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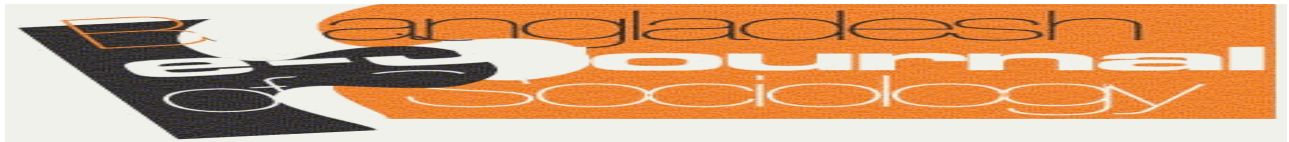
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## *Bangladesh e-Journal of Sociology*

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# Call for papers

For the

## 10<sup>TH</sup> ANNIVERSARY ISSUE

Of the

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## Note from the Editor

Since my last editorial, lamenting the failure of sociology in Bangladesh in general and lack of contribution from the Bangladeshi sociologist for the BEJS, I was mildly surprised and extremely happy to receive a number of papers from Bangladeshi authors for this issue and the next one. We have not accepted all of them but the ones being published here, meeting our rigid criteria, encourages me to be hopeful.

I am particularly excited about the first two papers where attempts have been made to explore new methodological territories. Yesmin Akhter, Md. Mahsin and Mohammad Zakaria Mohaimin, seek to use factor analysis technique to assess the contributions of 17 variables to the gross domestic product (GDP) of Bangladesh. After examining the different options they settle for the factor analysis techniques and report the best factor loading possibilities. While on the other hand, Mostafa Murshed examines two estimating models to measure intergenerational mobility, namely, the OLS and Quintile Regression models, and finds that neither of these two is exempted from biases. He then suggests ways of correcting these biases.

As of before, in this issue well, the largest number of contributions comes from Nigeria. Peter Ezeah after portraying the horrid picture of poverty in Sub-Saharan Africa, and Nigeria in particular, argues that the poverty trap and the technology inertia are “due to the absence of a strong innovation component in the policies and that, Nigeria’s technological progress is flawed as a result of the underutilization of indigenous talents for technological development and the undue emphasis placed on academic credentials”.

Bunmi Omolayo working with both junior and senior police officers in the Ekti State of Nigeria tries to estimate the job related stress and conclude that while there is no difference in job related stress between junior and senior officers, there is significant difference between the male and female officers. Olufemi Adejare Adewole looks at the cultural differences in work related values and concludes that “culture significantly affects reasons why people engage in work activities, the needs they seek to satisfy through their work, and motivation for work”.

Keeping to Africa, Nelson Jagero and Faith Mbulwa look at the plight of the youth and how they are enticed into drugs and other substance abuse. They focus on Makindu Town, Kenya and show how, particularly the girls, get entangled in drug abuses. The major findings of the study are that the extent to which female youth were vulnerable to drug and substance abuse “was high due to; peer pressure, unemployment, availability of drugs and substance and availability of money to purchase the drugs and substance”.

K.S. Latha and Simi John report on the predicament of the spouses of HIV/AIDS affected husbands in India. They note the level of discrimination and stigmatization suffered by these spouses, who often fall victims to the affliction later. Their agonies are, thus, multiplied as they are also required to live up to the expectations of the society.

The other two studies are also from South Asia. Yawar Hamid and Asmat Hamid show how the Mid-Day Meal scheme in district of Anantnag, in Jammu and Kashmir, India, has positively influenced the school attendance. Khandaker Mursheda Farhana, Syed Ajjur Rahman and Mahfuzur Rahman record causes of the migration of the poor to Rajshahi city, in Bangladesh. They note that the “migration of the rural poor to the urban centers has caused a direct transmission of rural poverty and backwardness to the towns, engendering the process of ‘ruralization’ of the urban areas”

These studies will, hopefully, continue to fill the need for sociological interpretation of the third world societies.

## An Application of Factor Analysis on Gross Domestic Product Data of Bangladesh

Yesmin Akhter<sup>\*</sup>, Md. Mahsin<sup>\*\*</sup> and Mohammad Zakaria Mohaimin<sup>\*\*\*</sup>

**Abstract:** We analyze Bangladesh's gross domestic product (GDP) data using a factor analysis model to find out the contributing factors that affect GDP. The Factors are calculated in two different methods and the adequacy of the factor model is tested. We use Principal Component and Maximum Likelihood factor analysis approaches and apply them to GDP data for the year 1999-2000. Data has been collected by the Bangladesh Bureau of Statistics on 17 contributing sectors. The analysis has revealed that seventeen sectors have been classified into three factors that are contributing to Bangladesh's GDP. These three factors for principal component analysis are renamed as service factor, agriculture & infrastructure factor, and fishing & mining factor. In maximum likelihood method the factors are renamed as service factor, agriculture & infrastructure factor, and education factor. Lastly the factor scores as district-wise for the three factors are compared. Since the availability of gross domestic product data is very scarce, the data for the year 1999-2000 is used for the analysis.

### Introduction

Factor analysis is a statistical approach that can be used to analyze interrelationships among a large number of variables and to explain these variables in terms of their common underlying dimensions (factors). The approach involves finding a way of condensing the information contained in a number of original variables into a smaller set of dimensions (factors) with a minimum loss of information (Hair, J.F. et al., 1992). Factor analysis is applied as a data reduction or structure detection (structural simplification) method. In this study, we apply this to the Gross Domestic Product (GDP) (market value of final goods and services produced in an economy in a year) data of Bangladesh for the period 1999-2000. To calculate the GDP, data from 64 districts were collected on 17 production sectors by the Bangladesh Bureau of Statistics (BBS 1995 to 2000). It is reasonable to assume that many of these sectors will be related to each other and hence the variables can be grouped by their correlations. This means, all variables within a particular group are highly correlated among themselves but have relatively small correlations with variables in a different group. It is conceivable that each group of variables represents a single underlying construct, or factor, that is responsible for the observed correlations. In this study, we analyze the GDP data with an aim to find the underlying factors that are influencing Bangladesh's GDP.

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**Description of the method**

**A. The Model:** Let the observable random vector  $\mathbf{X}$ , with  $p$  components, has mean  $\mu$  and covariance matrix  $\Sigma$ . The factor model postulates that  $\mathbf{X}$  is linearly dependent upon a few unobservable random variables  $F_1, F_2, \dots, F_m$ , called *common factors*, and  $p$  additional sources of variation  $\varepsilon_1, \varepsilon_2, \dots, \varepsilon_p$ , called *error* or, sometimes, *specific factors*. Then the factor analysis model is

$$\begin{aligned} X_1 - \mu_1 &= l_{11}F_1 + l_{12}F_2 + \dots + l_{1m}F_m + \varepsilon_1 \\ X_2 - \mu_2 &= l_{21}F_1 + l_{22}F_2 + \dots + l_{2m}F_m + \varepsilon_2 \\ &\vdots \\ X_p - \mu_p &= l_{p1}F_1 + l_{p2}F_2 + \dots + l_{pm}F_m + \varepsilon_p \end{aligned}$$

In matrix notation,

$$\underset{(p \times 1)}{\mathbf{X}} - \underset{(p \times 1)}{\boldsymbol{\mu}} = \underset{(p \times m)}{\mathbf{L}} \underset{(m \times 1)}{\mathbf{F}} + \underset{(p \times 1)}{\boldsymbol{\varepsilon}} \tag{1}$$

Here,  $\mu_i$  is the mean of  $i^{th}$  variable,  $F_j$  is the  $j^{th}$  common factor,  $L = l_{ij}$ ,  $i = 1, 2, \dots, p$ ,  $j = 1, 2, \dots, m$ , is the matrix of factor loadings where  $l_{ij}$  is the loading of  $i^{th}$  variable on  $j^{th}$  common factor and  $\varepsilon_i$  is the  $i^{th}$  specific factor. The unobservable random factors  $\mathbf{F}$  and the unique factors  $\boldsymbol{\varepsilon}$  satisfy the following assumptions:  $E(\mathbf{F}) = \mathbf{0}_{(m \times 1)}$ ,  $Cov(\mathbf{F}) = \mathbf{I}_{(m \times m)}$ ,  $E(\boldsymbol{\varepsilon}) = \mathbf{0}_{(p \times 1)}$ ,  $Cov(\boldsymbol{\varepsilon}) = \boldsymbol{\psi}_{(p \times p)}$ , Where  $\boldsymbol{\psi}$  is diagonal matrix. The covariance matrix

of  $\mathbf{X}$  can be easily obtained as

$$\begin{aligned} \Sigma &= Cov(\mathbf{X}) = E(\mathbf{X} - \boldsymbol{\mu})(\mathbf{X} - \boldsymbol{\mu})' \\ &= \mathbf{L}\mathbf{L}' + \boldsymbol{\psi} \end{aligned}$$

Also it can be shown that  $Cov(\mathbf{X}, \mathbf{F}) = \mathbf{L}$ . (See Johnson, R.A. and D.W. Wichern, 1982 for more information.) Therefore,

$$\begin{aligned} Var(X_i) &= l_{i1}^2 + l_{i2}^2 + \dots + l_{im}^2 + \psi_i \\ Cov(X_i, X_k) &= l_{i1}l_{k1} + \dots + l_{im}l_{km} \\ Cov(X_i, F_j) &= l_{ij} \end{aligned} \tag{2}$$

**B. Communality:** Communalities measure how strongly the variables are explained by the factors. A factor analysis model contains both common factors and specific factors. Therefore, the

variability in the observation are also split up by common factors and specific factors. The proportion of variability of the  $i^{th}$  variable  $(V(X_i) = \sigma_{ii})$  contributed by the common factors is called the  $i^{th}$  communality. The proportion of variance due to the specific factors is often called the uniqueness or specific variance. Let us denote the  $i^{th}$  communality by  $h_i^2$ . Then from the covariance structure in (2), we can write 
$$\underbrace{\sigma_{ii}}_{Var(X_i)} = \underbrace{l_{i1}^2 + l_{i2}^2 + \dots + l_{im}^2}_{communality} + \underbrace{\psi_i}_{specific\ variance} = h_i^2 + \psi_i,$$

where  $h_i^2 = l_{i1}^2 + l_{i2}^2 + \dots + l_{im}^2, i = 1, 2, \dots, p$ . i.e. the  $i^{th}$  communality is the sum of squares of loadings of the  $i^{th}$  variable on  $m$  common factors.

**3. Estimation of parameters:** In factor analysis, we try to describe the covariance relationships among many variables in terms of a few underlying common factors. Because the sample covariance matrix  $S$  is an unbiased estimator of the population covariance matrix  $\Sigma$ , we usually do factor analysis on the sample covariance matrix  $S$  or the sample correlation matrix  $R$ . For a factor analysis to be meaningful, the variables have to be highly correlated. That means, the off-diagonal elements of the covariance matrix (or equivalently of the correlation matrix) have to be very different from zero. Thus, if  $\Sigma$  is significantly different from a diagonal matrix, factor analysis model is then entertained and the initial problem is to estimate the factor loadings  $l_{ij}$  and the specific variances  $\psi_i$ .

There are two methods of estimating the parameter of a factor analysis model. These are principal component method and the maximum likelihood method. In the present study, we consider both methods for estimating parameters.

**A. Method of Principal Component:** The principal component factor analysis of the sample covariance matrix  $S$  is specified in terms of its eigenvalue-eigenvector pairs  $(\hat{\lambda}_1, \hat{e}_1), (\hat{\lambda}_2, \hat{e}_2), \dots, (\hat{\lambda}_p, \hat{e}_p)$  where  $\hat{\lambda}_1 \geq \hat{\lambda}_2 \geq \dots \geq \hat{\lambda}_p \geq 0$

Let  $m < p$  be the number of common factors.

The matrix of estimated loading  $\{\tilde{l}_{ij}\}$  is given by

$$\tilde{L} = \begin{bmatrix} \sqrt{\hat{\lambda}_1} \hat{e}_1 & \sqrt{\hat{\lambda}_2} \hat{e}_2 & \dots & \sqrt{\hat{\lambda}_m} \hat{e}_m \end{bmatrix} \tag{3}$$

The estimated specific variances are provided by the diagonal elements of the matrix  $S - \tilde{L}\tilde{L}'$ , so



$$\tilde{\Psi} = \begin{bmatrix} \hat{\psi}_1 & 0 & \cdots & 0 \\ 0 & \hat{\psi}_2 & \cdots & 0 \\ \vdots & \vdots & \ddots & \vdots \\ 0 & 0 & \cdots & \hat{\psi}_p \end{bmatrix} \text{ With } \tilde{\psi}_i = s_{ii} - \sum_{j=1}^m \tilde{l}_{ij}^2 \quad (4)$$

Communalities are estimated as

$$\tilde{h}_i^2 = \tilde{l}_{i1}^2 + \tilde{l}_{i2}^2 + \cdots + \tilde{l}_{im}^2 \quad (5)$$

The principal component factor analysis of sample correlation matrix is obtained by starting with **R** (sample correlation matrix) in place of **S** (sample covariance matrix).

The proportion of total sample variance due to the  $j^{th}$  factor is

$$\left( \begin{array}{l} \text{Proportion of total} \\ \text{sample variance due} \\ \text{to } j \text{ th factor} \end{array} \right) = \begin{cases} \frac{\hat{\lambda}_j}{s_{11} + s_{22} + \cdots + s_{pp}} & \text{for factor analysis of } \mathbf{S} \\ \frac{\hat{\lambda}_j}{p} & \text{for factor analysis of } \mathbf{R} \end{cases} \quad (6)$$

**B. Method of Maximum Likelihood**

If the common factor **F** and the specific factors  $\epsilon$  can be assumed normally distributed then maximum likelihood estimate of the factor loadings and specific variances may be obtained. When  $\mathbf{F}_j$  and  $\epsilon_j$  are jointly normal, the observations  $\mathbf{X}_j - \mu = \mathbf{L}\mathbf{F}_j + \epsilon_j$  are then normal, and the likelihood is

$$\begin{aligned} L(\mu, \Sigma) &= (2\pi)^{-\frac{np}{2}} |\Sigma|^{-\frac{n}{2}} e^{-\left(\frac{1}{2}\right) r \left[ \Sigma^{-1} \left( \sum_{j=1}^n (x_j - \bar{x})(x_j - \bar{x})' + n(\bar{x} - \mu)(\bar{x} - \mu)' \right) \right]} \\ &= (2\pi)^{-\frac{(n-1)p}{2}} |\Sigma|^{-\frac{(n-1)}{2}} e^{-\left(\frac{1}{2}\right) r \left[ \Sigma^{-1} \left( \sum_{j=1}^n (x_j - \bar{x})(x_j - \bar{x})' \right) \right]} \\ &\quad \times (2\pi)^{-\frac{p}{2}} |\Sigma|^{-\frac{1}{2}} e^{-\left(\frac{n}{2}\right) (\bar{x} - \mu)' \Sigma^{-1} (\bar{x} - \mu)} \end{aligned} \quad (7)$$

which depends on **L** and  $\Psi$  through  $\Sigma = \mathbf{L}\mathbf{L}' + \Psi$ .

It is desirable to make **L** well defined by imposing the computationally convenient *uniqueness condition*

$$\mathbf{L}'\Psi^{-1}\mathbf{L} = \Delta, \text{ a diagonal matrix} \quad (8)$$

The maximum likelihood estimates of the communalities are

$$\hat{h}_i^2 = \hat{l}_{i1}^2 + \hat{l}_{i2}^2 + \dots + \hat{l}_{im}^2 \quad \text{for } i = 1, 2, \dots, p.$$

$$\left( \begin{array}{l} \text{Proportion of total} \\ \text{sample variance due} \\ \text{to } j \text{ th factor} \end{array} \right) = \begin{cases} \frac{\hat{l}_{1j}^2 + \hat{l}_{2j}^2 + \dots + \hat{l}_{pj}^2}{s_{11} + s_{22} + \dots + s_{pp}} & \text{for factor analysis of S} \\ \frac{\hat{l}_{1j}^2 + \hat{l}_{2j}^2 + \dots + \hat{l}_{pj}^2}{p} & \text{for factor analysis of R} \end{cases} \quad (9)$$

**C. A Large – Sample Test for the Number of Common Factors:**

The assumption of a normal population leads directly to a test of model adequacy. Suppose the  $m$  common factor model holds. In this case  $\Sigma = \mathbf{L}\mathbf{L}' + \Psi$ , and testing the adequacy of the  $m$  common factor model is equivalent to testing

$$H_0 : \Sigma = \underset{(p \times p)}{\mathbf{L}} \underset{(p \times m)(m \times p)}{\mathbf{L}'} + \underset{(p \times p)}{\Psi}$$

vs.  $H_1 : \Sigma$  any other positive definite matrix.

When  $\Sigma$  does not have any special form, the maximized likelihood function is proportional to

$$|\mathbf{S}_n|^{-n/2} e^{-np/2} \quad (10)$$

Under  $H_0$  the maximum of likelihood function is proportional to

$$\begin{aligned} & \left| \hat{\Sigma} \right|^{-n/2} \exp \left( - \left( \frac{1}{2} \right) \text{tr} \left[ \hat{\Sigma}^{-1} \left( \sum_{j=1}^n (\mathbf{x}_j - \bar{\mathbf{x}})(\mathbf{x}_j - \bar{\mathbf{x}})' \right) \right] \right) \\ & = \left| \hat{\mathbf{L}}\hat{\mathbf{L}}' + \hat{\Psi} \right|^{-n/2} \exp \left( - \frac{1}{2} n \text{tr} \left[ (\hat{\mathbf{L}}\hat{\mathbf{L}}' + \hat{\Psi})^{-1} \mathbf{S}_n \right] \right) \end{aligned} \quad (11)$$

Now we define the likelihood ratio statistic for testing  $H_0$  as

$$\begin{aligned} -2 \ln \Lambda &= -2 \ln \left[ \frac{\text{maximized likelihood under } H_0}{\text{maximized likelihood}} \right] \\ &= -2 \ln \left( \frac{|\hat{\Sigma}|}{|\mathbf{S}_n|} \right)^{-n/2} + n \left[ \text{tr}(\hat{\Sigma}^{-1} - \mathbf{S}_n) - p \right] \end{aligned} \quad (12)$$

with

$$\nu - \nu_0 = \frac{1}{2} p(p+1) - \left[ p(m+1) - \frac{1}{2} m(m-1) \right] = \frac{1}{2} [(p-m)^2 - p - m] \quad \text{d.f.} \quad (13)$$

Since  $\text{tr}(\hat{\Sigma}^{-1} - \mathbf{S}_n) - p = 0$  provided  $\hat{\Sigma} = \hat{\mathbf{L}}\hat{\mathbf{L}}' + \hat{\Psi}$  is the maximum likelihood estimate of  $\Sigma = \mathbf{L}\mathbf{L}' + \Psi$ . Thus we have

$$-2 \ln \Lambda = n \ln \left( \frac{|\hat{\Sigma}|}{|S_n|} \right) \tag{14}$$

Bartlett (Bartlett, M.S.1954) has shown that the chi-square approximation to the sampling distribution of  $-2 \ln \Lambda$  can be improved by replacing  $n$  in (14) with the multiplicative factor  $(n-1-(2p+4m+5)/6)$ . Using Bartlett's correction, we reject  $H_0$  at the  $\alpha$  level of significance if

$$(n-1-(2p+4m+5)/6) \ln \frac{|\hat{L}\hat{L}' + \hat{\Psi}|}{|S_n|} > \chi^2_{[(p-m)^2 - p - m]/2, (\alpha)} \tag{15}$$

provided  $n$  and  $n-p$  are large. Since the number of degrees of freedom,  $\frac{1}{2}[(p-m)^2 - p - m]$ , must be positive, it follows that

$$m < \frac{1}{2}(2p+1 - \sqrt{8p+1}) \tag{16}$$

in order to apply the test (15).

**D. Rotation of Factors:** Using the estimation method described above, we estimate the initial loadings by an orthogonal transformation. An orthogonal transformation of the factor loadings, and the implied orthogonal transformation of the factors, is called factor rotation. The estimated loadings have the same ability to reproduce the covariance or correlation matrix. But the initial loadings may not be easily interpretable and hence it is a usual practice to rotate the factors until a simple structure is obtained. Ideally, we look for the set of loadings such that each variable loads highly on a single factor and has small-to-moderate loadings on the remaining factors.

If  $\hat{L}$  is the  $p \times m$  matrix of estimated factor loadings obtained by any method (principal component, maximum likelihood, and so forth) then  $\hat{L}^* = \hat{L}T$ , where  $TT' = T'T = I$

is a  $p \times m$  matrix of "rotated" loadings. For this rotation, the estimated covariance or correlation matrix also remains unchanged, since

$$\hat{L}\hat{L}' + \hat{\Psi} = \hat{L}TT'\hat{L} + \hat{\Psi} = \hat{L}^*\hat{L}^{*'} + \hat{\Psi}$$

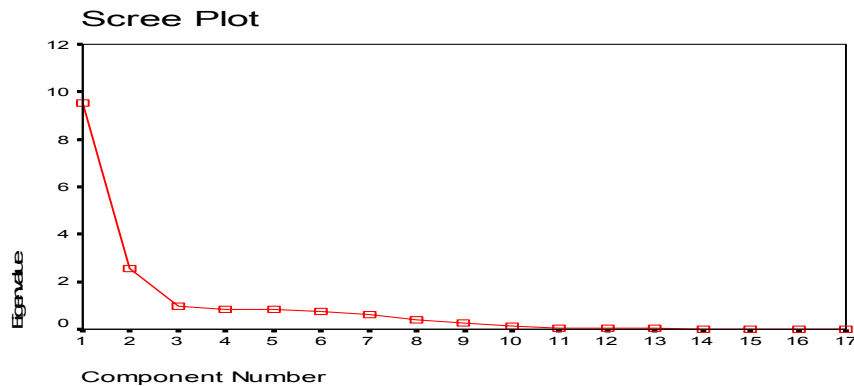
From the above equation we see that the communalities also remain unchanged. There are several types of rotations to choose from. The most popular one is the *varimax criterion* suggested by Kaiser (Kaiser, H.F. 1958). For this we define  $\tilde{l}_{ij}^* = \hat{l}_{ij}^* / \hat{h}_i$  to be the final rotated coefficient scaled by the square root of the communalities. Then the varimax procedure selects the orthogonal transformation  $T$  that makes

$$V = \frac{1}{p} \sum_{j=1}^m \left[ \sum_{i=1}^p \tilde{l}_{ij}^{*4} - \left( \sum_{i=1}^p \tilde{l}_{ij}^{*2} \right) / p \right] \tag{17}$$

as large as possible. By scaling the rotated coefficients  $\hat{l}_{ij}^*$ , variables with small communality gets more weight in the determination of simple structure. After the transformation  $\mathbf{T}$  is determined, the loadings  $\tilde{l}_{ij}^*$  are multiplied by  $\hat{h}_i$  to keep the original communalities unchanged.

**Analysis**

There are 64 observations, one from each district, on 17 sectors (variables), which are contributing to Bangladesh’s GDP. From a factor analysis perspective the first three eigen values, 9.525, 2.561, 0.977 of the correlation matrix suggest a factor model with  $m = 3$  common factors. Because the first two eigen values are greater than unity and the third one is closer to unity and together they explain almost 77% of the total variance. Again a scree plot also shows that the first three eigen values load very highly on the observed variables. Therefore, we consider a factor model with  $m = 3$  common factors. Also the adequacy of the three factors model is tested by applying the large sample test for the number of common factors. The estimated value of the test statistics using equation [15] is 78.71 and the 5% critical value is  $\chi_{88, .05}^2 = 115.84$ . Since the critical value is not exceeded by the calculated value 78.471, hence we fail to reject  $H_0$ .



**Figure 1: Scree plot**

We conclude the data do not contradict a three-factor model. The principle component and maximum likelihood factor analysis approaches were then applied to the correlation matrix of the GDP data. The resulting estimated factor loadings, estimated rotated factor loadings and communalities are presented in the table for both methods.

**Table 1: Results of principal component method with varimax rotation**

Variables	Three - factor solution						
	Estimated factor loadings			Estimated rotated factor loadings			Communality $\hat{h}_i^2$
	$F_1$	$F_2$	$F_3$	$F_1^*$	$F_2^*$	$F_3^*$	
Crops	.033	<b>.478</b>	-.551	-.051	<b>.714</b>	-.142	.533
Forest	.195	<b>.872</b>	-.133	.026	<b>.786</b>	.445	.816
Animal	.064	<b>.545</b>	-.041	-.041	<b>.457</b>	.303	.303
Fishing	.239	<b>.647</b>	.311	.106	.344	<b>.666</b>	.572
Mining	.126	.430	<b>.669</b>	.031	-.061	<b>.803</b>	.649
Manufacturing	<b>.855</b>	-.318	.063	<b>.899</b>	-.164	-.031	.836
Electricity	<b>.943</b>	-.190	-.034	<b>.962</b>	.008	-.019	.926
Construction	<b>.515</b>	.259	-.313	.461	<b>.466</b>	-.024	.430
Wholesale	<b>.876</b>	-.114	.008	<b>.881</b>	.031	.051	.781
Hotel	<b>.963</b>	-.190	.056	<b>.981</b>	-.044	.055	.967
Transportation	<b>.976</b>	-.140	.015	<b>.984</b>	.021	.054	.973
Finance	<b>.963</b>	-.151	-.031	<b>.974</b>	.038	.010	.951
Real Estate	<b>.983</b>	-.009	-.020	<b>.967</b>	.145	.106	.967
Public Ad	<b>.940</b>	-.259	-.022	<b>.973</b>	-.053	-.052	.952
Education	<b>.707</b>	.218	.026	<b>.651</b>	.254	.243	.548
Health	<b>.972</b>	.166	-.006	<b>.922</b>	.271	.221	.973
Community	<b>.808</b>	.483	.012	<b>.700</b>	.482	.405	.886
Cumulative proportion of total sample variance explained	56.031	71.095	76.841	54.513	66.876	76.841	

From the above Table 1 we can see that, the proportion of total variance explained by the three-factor solution (76.841) is appreciably larger than that for the one factor solution (56.03). In varimax rotation three-factor solution expresses the same proportion of total variance as one factor solution. According to unrotated solution of principal factor analysis we can see that the last 12 variables of the gross domestic product loads highly on the first factor  $F_1$  and might be called as *Service Factor* and first 4 variables loads highly on the second factor  $F_2$  and might be called as *Agriculture Factor*. Only one variable "mining and quarrying" loads highly on the third factor  $F_3$  and can be renaming as *Mining Factor*. After varimax rotation we have found that the "construction" variable which had high loading on the first factor ( $F_1$ ) of unrotated solution have high loading on the second factor ( $F_2^*$ ) of the rotated solution. Similarly the "fishing" variable which had high loading on the  $F_2$  before rotation have high loading on  $F_3^*$  after rotation.

**Table 2: Results of maximum likelihood method with varimax rotation**

Variables	Three - factor solution						
	Estimated factor loadings			Estimated rotated factor loadings			Communality
	$F_1$	$F_2$	$F_3$	$F_1^*$	$F_2^*$	$F_3^*$	$\hat{h}_i^2$
Crops	.037	<b>.310</b>	.170	-.021	<b>.352</b>	-.049	.125
Forest	.200	<b>.685</b>	.493	.022	<b>.867</b>	.015	.745
Animal	.059	<b>.278</b>	.207	-.014	<b>.351</b>	.005	.122
Fishing	.237	<b>.448</b>	.360	.100	<b>.610</b>	.069	.383
Mining	.131	<b>.216</b>	.212	.049	<b>.319</b>	.066	.110
Manufacturing	<b>.872</b>	-.487	.027	<b>.797</b>	-.198	.571	.999
Electricity	<b>.926</b>	-.041	-.319	<b>.978</b>	-.025	.062	.939
Construction	<b>.480</b>	.225	.044	<b>.436</b>	.302	.040	.283
Wholesale	<b>.862</b>	-.039	-.087	<b>.835</b>	.094	.214	.751
Hotel	<b>.960</b>	-.138	-.151	<b>.947</b>	-.001	.255	.962
Transportation	<b>.969</b>	-.011	-.205	<b>.978</b>	.072	.141	.960
Finance	<b>.943</b>	-.028	-.286	<b>.982</b>	.008	.083	.972
Real Estate	<b>.980</b>	.095	-.111	<b>.956</b>	.212	.150	.982
Public Ad	<b>.921</b>	-.093	-.364	<b>.988</b>	-.094	.058	.988
Education	<b>.733</b>	-.197	.453	.519	.247	<b>.672</b>	.769
Health	<b>.975</b>	.221	.016	<b>.908</b>	.383	.168	.999
Community	<b>.809</b>	.451	.233	<b>.679</b>	.657	.142	.911
Cumulative proportion of total sample variance explained	55.339	64.222	70.999	51.493	65.083	70.999	

So according to the rotated solution of principal factor analysis we can rename the factors as *Service, Agriculture & Infrastructure, and Fishing & Mining Factor* respectively.

From the above Table 2 we can see that, the proportion of total variance explained by the three-factor solution (70.99%) is appreciably larger than that for the one factor solution (55.34%). In varimax rotation three-factor solution expresses more proportion of total variance than one factor solution. According to unrotated solution of maximum likelihood analysis we can see that the last 12 variables of the gross domestic product loads highly on the first factor  $F_1$  and might be called as *Service Factor* and first 5 variables loads highly on the second factor  $F_2$  and might be called as *Agriculture & Infrastructure factor*. And no variable has high loading on third factor. After varimax rotation we have found that the “education” variable which had high loading on the first factor ( $F_1$ ) of unrotated solution have high loading on the third factor ( $F_3^*$ ) of the rotated solution.

So according to the rotated solution of maximum likelihood method we can rename the factors as *Service, Agriculture & Infrastructure, and Education Factor* respectively.

### Comparison of results obtained by two methods

According to the rotated solution of principal component method (PCM) we renamed three factors as *Service, Agriculture & Infrastructure, and Fishing & Mining Factor* where as in maximum likelihood method (MLM) we renamed three factors as *Service, Agriculture & Infrastructure, and Education Factor* respectively. The common variables of service factor both in MLM and PCM are same except education variable and construction variable. Education, which was in service factor in PCM, is in third factor (*Education Factor*) in MLM. Construction, which was in Agriculture & Infrastructure Factor in PCM, is in the Service Factor in MLM. In PCM third factor (*Fishing & Mining Factor*) is constructed by fishing variable and mining variable only whereas in MLM both these variables are included in the second factor (*Agriculture & Infrastructure Factor*). In MLM the third factor (*Education Factor*) consists of only a single variable “education” of gross district product.

### Sorted factor scores by Districts

The estimated values of the unobserved random factors are called factor scores. The sorted factor scores by districts for the principle component approach using regression method are given in the following table:

**Table 3: Sorted Factor Scores Table by Districts**

Factor 1		Factor 2		Factor 3	
District	Factor Score	District	Factor Score	District	Factor Score
Dhaka	7.17612	Mymensingh	2.8142	Brahamanbaria	2.88663
Chittagong	2.49538	Narail	2.65717	Sylhet	2.47533
Khulna	0.52531	Bogra	2.39893	Habiganj	2.23617
Narayanganj	0.49076	Comilla	2.09287	Chittagong	2.2207
Bandarban	0.46775	Faridpur	2.01663	Cox's Bazar	2.22058
Comilla	0.36773	Tangail	1.65246	Bogra	1.58574
Gazipur	0.32167	Naogaon	1.5098	Mymensingh	1.47769
Mymensingh	0.25718	Jessore	1.1575	Dinajpur	1.38043
Rajshahi	0.23588	Chittagong	1.02814	Khulna	1.12377
Natore	0.1626	Rangpur	0.97971	Comilla	1.08484
Tangail	0.1194	Dinajpur	0.97467	Chandpur	0.79669
Rangpur	0.09109	Kishoreganj	0.67029	Bhola	0.68717
Faridpur	0.06538	Chandpur	0.6674	Netrakona	0.66669
Pabna	0.04615	Gaibandha	0.63937	Bagerhat	0.59465
Sirajganj	0.03536	Noakhali	0.45517	Patuakhali	0.58555
Jessore	0.02575	Jamalpur	0.39354	Barisal	0.43122
Barisal	0.0237	Sirajganj	0.33135	Noakhali	0.38458

Narsingdi	-0.03693	Kurigram	0.30428	Lakshmipur	0.34513
Sylhet	-0.06606	Sunamganj	0.30117	Kishoreganj	0.14973
Noakhali	-0.06943	Barisal	0.29681	Pirojpur	0.03695
Kishoreganj	-0.08844	Netrakona	0.22071	Barguna	-0.02618
Dinajpur	-0.09739	Jenaidah	0.21759	Rajshahi	-0.0777
Jamalpur	-0.09867	Pabna	0.19445	Rangamati	-0.18032
Kushtia	-0.13818	Rajshahi	0.11858	Naogaon	-0.19237
Naogaon	-0.17417	Sathkira	0.10526	Pabna	-0.20066
Gaibandha	-0.18	Khulna	0.08088	Jessore	-0.22712
Bogra	-0.19088	Thakurgaon	0.05781	Bandarban	-0.24326
Kurigram	-0.19965	Nilphamari	0.02831	Narsingdi	-0.2801
Brahamanbaria	-0.20539	Kushtia	-0.00911	Sunamganj	-0.2871
Sathkira	-0.21703	Bhola	-0.13278	Feni	-0.29041
Nilphamari	-0.22979	Natore	-0.13674	Gazipur	-0.30827
Bagerhat	-0.24018	Moulvibazar	-0.14277	Sathkira	-0.31612
Moulvibazar	-0.24253	Narsingdi	-0.24363	Kurigram	-0.31835
Sunamganj	-0.24384	Bagerhat	-0.3011	Gaibandha	-0.32437
Nawabganj	-0.24706	Sherpur	-0.36407	Tangail	-0.35983
Munshiganj	-0.25397	Nawabganj	-0.3727	Thakurgaon	-0.37529
Chandpur	-0.25626	Manikganj	-0.37682	Sirajganj	-0.42194
Jenaidah	-0.25838	Lakshmipur	-0.38033	Madaripur	-0.4261
Lakshmipur	-0.27109	Gazipur	-0.40632	Narayanganj	-0.43665
Manikganj	-0.27324	Patuakhali	-0.48154	Gopalganj	-0.44832
Netrakona	-0.27936	Lalmonirhat	-0.48569	Natore	-0.45574
Bhola	-0.28435	Joypurhat	-0.52823	Jhalokati	-0.45732
Feni	-0.28516	Pirojpur	-0.58184	Jamalpur	-0.46792
Thakurgaon	-0.29291	Barguna	-0.62627	Munshiganj	-0.47908
Rangamati	-0.29711	Chuadanga	-0.62892	Moulvibazar	-0.48242
Sherpur	-0.31127	Gopalganj	-0.63965	Nawabganj	-0.48472
Chuadanga	-0.31721	Madaripur	-0.64243	Rangpur	-0.48824
Cox's Bazar	-0.32338	Panchagarh	-0.66674	Rajbari	-0.4906
Madaripur	-0.32392	Sylhet	-0.6737	Lalmonirhat	-0.50125
Gopalganj	-0.32499	Magura	-0.67539	Sherpur	-0.56088
Pirojpur	-0.32952	Feni	-0.70032	Jenaidah	-0.57145
Habiganj	-0.35424	Shariatpur	-0.73415	Panchagarh	-0.57349
Lalmonirhat	-0.35594	Munshiganj	-0.75623	Shariatpur	-0.58526
Rajbari	-0.36415	Rajbari	-0.78737	Manikganj	-0.5879
Jhalokati	-0.37892	Dhaka	-0.9146	Kushtia	-0.58866
Joypurhat	-0.37993	Cox's Bazar	-0.92138	Nilphamari	-0.60151
Shariatpur	-0.38492	Narayanganj	-0.96977	Joypurhat	-0.63406
Patuakhali	-0.38929	Meherpur	-1.01905	Magura	-0.64515
Magura	-0.40067	Jhalokati	-1.04143	Khagrachhari	-0.69028
Panchagarh	-0.40152	Brahamanbaria	-1.06787	Chuadanga	-0.71068
Meherpur	-0.41885	Habiganj	-1.19565	Meherpur	-0.74324
Khagrachhari	-0.42479	Khagrachhari	-1.23365	Dhaka	-1.16945
Barguna	-0.42957	Rangamati	-1.6537	Faridpur	-1.62186
Narail	-0.57667	Bandarban	-1.87309	Narail	-3.03866



The above Table 3 represents the 64 districts according to their scores on each factor in descending order. Each district has individual scores on each factor. We can see that the district Dhaka has highest score on the first factor where as the districts Mymensingh and Brahmanbaria have highest scores on second factor and third factor respectively.

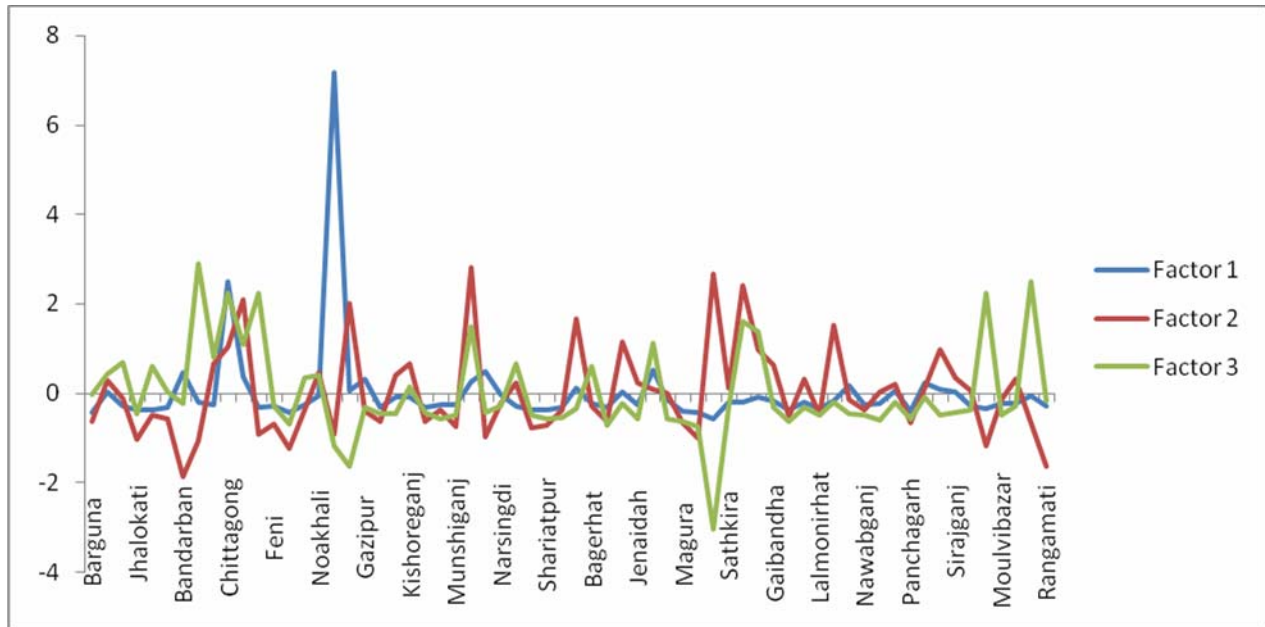


Figure 2: Factor scores of 64 districts

The above graph is plotted by districts against their scores on each factor. Scores of districts on each factor can be compared from this figure such as district Dhaka have highest score on factor 1, but have low score on 2<sup>nd</sup> factor and negative score on 3<sup>rd</sup> factor.

**Conclusion**

From the above analysis it is evident that three major factors are influencing Bangladesh’s GDP. For the principal component analysis the factors are *Service Factor*, *Agriculture & Infrastructure Factor*, and *Fishing & Mining Factor*. The first factor consist of manufacturing sector, electric, gas and water supply, wholesale & retail trade, hotel & restaurants, transport, storage & communication, financial intermediation, real estate renting & business service, public administration & defense sector, education sector, health and social work sector, community, social & personal service sector. Second factor consists of crops & horticulture, forestry & related services, animal farming, construction and the third factor consists of fishing sector, mining & quarrying. In maximum likelihood method the three factors are *Service Factor*, *Agriculture & Infrastructure Factor*, and *Education Factor*. The first factor consists of manufacturing sector, electric, gas and water supply, construction, wholesale & retail trade, hotel & restaurants,

transport, storage & communication, financial intermediation, real estate renting & business service, public administration & defense sector. Second factor consists of crops & horticulture, forestry & related services, animal farming, fishing sector, mining & quarrying; and the third factor consists of education sector. Both MLM and PCM give the almost equal but not the same result. The common variables of service factor both in MLM and PCM are the same except education variable and construction variable. Education, which was in service factor in PCM, is in third factor (*Education Factor*) in MLM. Construction, which was in agriculture & infrastructure factor in PCM, is in the service factor in MLM. In PCM third factor (*Fishing & Mining Factor*) is constructed by fishing variable and mining variable only whereas in MLM both these variables are included in the second factor (*Agriculture & Infrastructure Factor*). In MLM third factor (*Education Factor*) consists of only a single variable "education" of gross district product. According to the test of hypothesis we found that three-factor model is adequate for the data. Finally we calculate the scores of districts on each factor and found that the district Dhaka have the highest score on the first factor whereas the districts Mymensingh and Brahmanbaria have the highest scores on second factor and third factor respectively.

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## Intergenerational Mobility as a Determinant of Socio-economic Status: A Theoretical Discussion

Mustafa Murshed\*

**Abstract:** *Intergenerational mobility describes how the socio-economic status of a child is influenced by his/her parent's status. Having equal abilities children from different families don't have the equal options in leading their lives. This paper articulates two estimating model namely, OLS and Quintile Regression and interestingly neither of these models is exempted from biases. The unavailability of data from two separate generations lead to measurement error and life-cycle bias. These problems can be address by considering measurement error model and taking control of parent's and child's age (in homogeneous sample). Meanwhile, the result also suffers from sample selection problem because in most of the cases the represented samples that characterize the children's and parents' statuses are not random. To mitigate the problem of sample selection a combination of Heckman-type correction method and weighted least squares is used as it produces better result(s). This paper is not a primary works rather the whole discussion is based on secondary evidences.*

### Introduction

The economic status of a person is supposed to be strongly related with his/her family background. The socio-economic statuses are usually transmitted from one generation to another. The family under poverty level has nothing to invest for its offspring as is also true for even a middle income family. So it can be argued that the intergenerational mobility over the years plays a dominant role to depict the status of the next generation. The important reason is that different families have different wealth endowments which create unequal opportunities. Reasonable number of models have been developed to explain this relationship between parent's and children's status such as income, earnings, social class, occupational prestige scores or occupational classes (Ermisch and Francesconi, 2002; Nicoletti, 2008).

In a rough terminology it is not difficult to define intergenerational mobility. It is nothing but the difference between children's positions in their generation's distribution of economic status and what their parents did in their generation's distribution (Dearden, et al., 1997). If the correlation is high then it implies that people who are born in disadvantaged families have a smaller chance to possess high socio-economic positions than people born in privileged families. On the other hand, zero (or low) correlation implies more equal opportunities (Ermisch and Nicoletti, 2005; Björklund and Jäntti, (2000)).

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This is a literature review and thus the paper attempts to deal with secondary evidences. I paid attention particularly on modeling the equation, measurement error, life cycle bias, sample selection problems and how to solve those problems. The required data in such a study should be generated from the Panel Survey of different waves (longitudinal data), for example, in Bangladesh it is the Household Income and Expenditure Survey (HIES) and in UK it is British Household Panel Survey (BHPS). This paper is expected to provide some valuable information for the researchers to conduct further research and help the policy makers to set the strategies in terms of improving the socio-economic indicators of the country.

The paper proceeds as follows: in Section one there is an introductory discussion which also covers the background of literature, Section two develops the methodology of the study and Section three analyzes how the model is considered while Section four critically evaluates the concepts and issues. Section five has the paramount importance because it is perhaps the core section of our discussion. The next section contains the concluding remarks of this paper.

### **Background**

The intergenerational mobility was earlier considered as a matter for sociologists though in the last couple of decades economists have paid interest because one of the significant indicators of social success is income (Mocetti, 2007 and Blanden et al., 2002). Family background and status play a vital role in a person's achievement(s). The degree of intergenerational mobility may vary from family to family but there is an existence of intergenerational mobility. A good number of studies, such as Becker (1981), Becker and Tomes (1979, 1986) and Loury (1981) have been covered by the researcher to illustrate why parent's and children's status are correlated;. It is interesting that all of these above mentioned works found the existence of relationship between the son's or daughter's socio-economic status or other socio-economic measure with his/her parents' (Ermisch and Francesconi, 2002).

One of the major works articulated by Becker and Tomes (1986) which links the distinction of constrained and unconstrained families to the existence of financial assets transfers from parents to children. Other than income if we consider the other socio economic indicators e.g. educational attainment, then the result is also the same for the parents' level of education. There exists a strong association between parental education and the educational outcomes of their children which is positive for all nations across the 20<sup>th</sup> century. It shows a persistent inequality in educational opportunities (Pfeffer, 2007-09).

The measurement needs to be based on the permanent income but due to the unavailability of data it is not possible. The works of Solon (1992) and Zimmerman (1992) are a reassessment of

the degree of intergenerational mobility in the United States and the results show less mobility than previously thought. Solon (1992) in his "Intergenerational Income Mobility in the United States" argued that, "*Previous estimates of intergenerational income mobility have been based on error-ridden data, unrepresentative samples, or both.*"

The findings of different researches focus on the extent of intergenerational mobility which is measured by the estimate  $\beta$  (see Equation no – 01 below). Here, the estimates of some studies are illustrated. The consensus estimate of 0.2 suggested by Becker and Tomes is based upon studies subject to this measurement error bias. Behrman and Taubman (1990), Lillard and Reville (1998), Mulligan (1997) and Solon (1992) made correction of this problem and estimate this about 0.4 to 0.5. It is interesting that Zimmerman (1992) also obtained an estimate of 0.4, while Peters's (1992) estimated result varies between 0.1 and 0.2 using the same data. The difference may be justified by comparing the difference in the survey and the sample sizes because Solon (1992) used 348 father-son pairs from the PSID (Panel Study of Income Dynamics) while Zimmerman (1992) considered 876 from the NLS (National Longitudinal Survey). Atkinson, et al. (1983) provided evidence of about 0.4 to 0.45 based on data from a single British city, Dearden, et al. (1997) offered an estimate of about 0.4 to 0.6 using a more representative sample, Gustafsson (1994) and Björklund and Jäntti (1997) studying Swedish data obtain an estimate of about 0.2 to 0.25 (Corak and Heisz, 1999). There is a list of different results in Appendix-A for readers' information.

Solon (1992) and Zimmerman (1992) results are twice larger than what articulated by Becker and Tomes (1986). A study conducted by Mozumdar (2005) found it even 50% higher than what was found by Solon and Zimmerman (Francesconi and Nicoletti, 2006).

Nevertheless it needs to be mentioned that Behrman and Taubman (1985), Jenkins (1987), Angrist and Krueger (1992), Arellano and Meghir (1992), Björklund (1993), Atkinson et al. (1995), Reville (1995), Couch and Dunn (1997), Fortin and Lefebvre (1998), Solon (1999), Carmichael (2000), Breen and Goldthorpe (2001), Osterbacka (2001), Mayer and Lopoo (2001), Fertig (2001), Chadwick (2002), Chadwick and Solon (2002), Haider and Solon (2005), Grawe (2005), Goldthorpe and Jackson (2007) made significant contributions assessing the intergenerational mobility over time (Blanden et al., 2002; Bratberg, et al., 2003; Ermisch and Nicoletti, 2005 and Grawe, 2006).

### **Methodology**

This paper is completely based on theoretical arguments of different books, journals, websites and writings (published & unpublished) of different authors. Here I tried to illustrate the definition of the technical terms, analyze the findings and comments of scholars. In this paper no data are

used and no testing of hypothesis is considered. So this is just a theoretical elaboration of the arguments on intergenerational mobility. The whole discussion is based on the secondary evidences.

### Measurement of Econometric Model

#### *Model under consideration*

Here, we are using a log-linear regression model where the log of a child's<sup>1</sup> permanent socio-economic status in family  $i$ , denoted by,  $y_i^{child}$  and his/her father's log permanent socio-economic status<sup>2</sup>, denoted by  $x_i^{father}$ . The model can be expressed as:

$$y_i^{child} = \alpha + \beta x_i^{father} + \varepsilon_i \quad \text{[Equation no - 01]}$$

where,  $\beta$  = parameter of interest that denotes the intergenerational elasticity of son's status with respect to father's status

$\alpha$  = intercept term that represents the change in status common to the son's generation, and

$\varepsilon_i$  = random disturbance (Francesconi and Nicoletti, 2006)

Here,  $y_i$  describes the life time measure or the permanent income in logs. The intergenerational mobility actually depends on the value of  $\beta$ . When  $\beta$  is positive children's average log earnings depend on their father's earnings or otherwise speaking the daughters' expected occupational prestige depends on their fathers' occupational prestige. We can characterise the by two extreme cases:

- (i)  $\beta=0$  ensures the complete mobility to the mean and a completely independent distribution of child than that of his/her parents.
- (ii)  $\beta=1$  refers complete immobility, where (abstracting from the random disturbance  $\varepsilon_i$ ) the distribution of child is completely generated by the father's status.  
(Dearden, et al., 1997)

A higher value of  $\beta$  in a lower income family refers a less access to resources whilst growing up or facing credit constraints which may cause stopping them from attending university (Blanden et al., 2002).

### Estimation Method

#### *Ordinary Least Square (OLS) Method*

The OLS method simply estimates the elasticity of son's earnings with respect to that of father's and thus it also calculates the intergenerational correlation between them. It is in fact an easy and

<sup>1</sup> The child can be referred as a son or a daughter and I use the term interchangeably without any gender discrimination.

<sup>2</sup> For simplicity, I assume father's status but it doesn't matter if it refers his/her parent's status.

effective measure to summarize their status by simple statistic. This will produce a consistent estimate when both  $y_i^{child}$  and  $x_i^{father}$  are normally distributed. By definition, the intergenerational elasticity,

$$\beta_{OLS} = \{cov(y_i^{child}, x_i^{father})\} / var(x_i^{father})$$

And similarly, intergenerational correlation,

$$\rho = \{cov(y_i^{child}, x_i^{father})\} / \sqrt{[var(x_i^{father}) var(y_i^{child})]}$$

But keep in mind that we observe only some pairs due to the selection procedure so the data would be censored and consequently the OLS estimate of  $\beta$  (generated from those data) would be inconsistent (Fertig 2001 and Nicoletti, 2008). I will explain this in section four.

### *Quintile Regression*

We can observe a comprehensive picture of child's and father's status by considering quintile regression. Unlike the OLS (the conditionality on mean describing how  $y_i^{child}$  depends on  $x_i^{father}$ ), it shows how  $y_i^{child}$  depends on  $x_i^{father}$  at each specific quintile on the conditional distribution of the children's earnings for each cohort. It allows us to differentiate the mobility levels of different types of children.

If we slightly manipulate the equation no-01 and have a model like  $y_i^{child} = \alpha + \beta_{\theta} x_i^{father} + \varepsilon_i$  then  $\beta_{\theta}$  is the estimated elasticity at the  $\theta^{th}$  quintile of the child's conditional earnings distribution (Fertig, 2001 and Nicoletti, 2008).

## **Concepts and Issues to be considered**

### *Measurement Error in Earnings*

Theoretically, we are interested in considering the intergenerational elasticity in long run permanent earnings but it is not an easy task to get the data. Typically, the permanent incomes for both are generally unobservable whether only a single or a few observations for each generation is available.

So the earnings can be calculated for a single or few specific years. To obtain the estimate of permanent income is one of the major obstacles in estimating Equation no - 01. The bias can be characterized by assuming that the short-run proxy for child's long-run status is his/her measured status in the whole period.

To get rid of this problem John Ermisch and Cheti Nicoletti (2005) suggested the most common approach to assume the following classical measurement error model:

$$w_{it} = w_i + u_{it} \quad \text{[Equation no - 02]}$$

where,

$w_{it}$  = the log earnings for the i-th individual (son or father) at age (time, year)  $t$ ,

- $w_i$  = the long run permanent log earnings, and  
 $u_{it}$  = a transitory component or random error *i.i.d.*<sup>3</sup> across the life cycle and across individuals and independent of  $w_i$ .

The measurement error can be split into two approaches:

- a) The error (measurement) in father's earnings that causes bias named, an 'attenuation bias' which can be misleadingly inflating social mobility across generations. Solon (1992) and Zimmerman (1992) empirically documented that in the previous studies those were considerably downwards biased. The argument behind the reason is that the variance of observed status is greater than the variance of permanent status.
- b) Unlike the father's case the error in child's earnings doesn't cause bias.

The bias can be mitigated by either using multi-year averages of earnings as the dependent variable or employing instrumental variables (IV) estimation (Grawe, 2006 and Blanden et al., 2002).

### Life-cycle Bias

Attenuation bias can be reduced by taking average of fathers' earnings for several years. But the correction procedure remains under question because measuring the parameter at different stages in the generations also induced bias. The parent's earnings which is taken later in life compare to that one for children leads a 'life-cycle bias'.

The annual permanent component of earnings does not necessarily equal to the lifetime permanent earnings. In a continuous time framework variance of earnings goes up with age which results in a biased estimate compared to when both measures are taken at the same point of the lifecycle. This is undoubtedly a downward bias because average earnings are a bad proxy for permanent earnings when people are too old or too young (Blanden et al., 2002 and Ermisch and Nicoletti, 2005).

The intergenerational elasticity,  $\beta_{OLS}$  is supposed to be underestimated when children are young and overestimated when their age is observed at higher stage, whereas the correlation coefficient,  $\rho$  is always underestimated and the bias is decreasing in son's age. Controlling for sons and fathers age (such as, polynomial in age for sons and fathers) in the intergenerational mobility equation is a conditional measure in reducing this bias. The condition requires that the growth of earnings should be homogeneous across the individuals because heterogeneous

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<sup>3</sup> Independently and Identically Distributed



individuals means different wealth endowments which leads to different sizes of investment in human capital (Ermisch and Nicoletti, 2005).

### **Sample Selection Problem**

Both cases of regressions would generate biased results when using the samples extracted from a short panel. By the definition of 'random sample'<sup>4</sup> the sample selected for the regression are not random because the selected samples are mediated by some other variables. Cheti Nicoletti (2008) in her "Multiple Sample Selection in the Estimation of Intergenerational Occupational Mobility"<sup>5</sup> identified the problems of sample selection which are affected by two different sources of sample selection:

- A. Father-daughter co-residence, and
- B. Daughter employment selection.

I intentionally ruled out the difference between son's earnings with that of daughter's because this is not our interest.

#### *Co-residence Problem of Sample Selection*

Our target is to observe the children's occupational prestige with their fathers but if they (children) don't live with their parents for at least one wave then it becomes impossible to do that. There may be some unobserved factors affecting children's later socio-economic status which are also influencing factors of children's chances of living (co-residing) with their parents. If we ignore those variables then the OLS estimate of  $\beta$  will suffer from sample selection bias (Francesconi and Nicoletti, 2006).

The study based on short panel has a greater problem than that of long panel. Nicoletti (2008) argued that the co-residence problem<sup>6</sup> in the short panel for USA (Panel Study of Income Dynamics) and Germany (Socio-economic Panel) are less significant than the survey conducted in Belgium, Hungary, Luxembourg, Poland and UK.

The problem of co-residence still exists even when we observe a long panel. Because in a 10-year-long panel, a 35 years old (now) child is 25 years old (at the beginning) in the last wave of the panel and by that age the child is supposed to leave her/his parental home. Considering instead a 25 years long panel, a child 35 years old (now) in the last wave is 10 years old at the beginning of the panel and at that age s/he is probably still living with her/his parents (Nicoletti, 2008).

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<sup>4</sup> By definition, it ensures that every unit in the population has a known and non-zero probability.

<sup>5</sup> This is an extended work of Francesconi and Nicoletti (2006) paying particular interest in sample selection problem.

<sup>6</sup> Here attrition and employment selection problems are not included.

Francesconi and Nicoletti (2006) observed that older sons are less likely to be a co-residence with fathers while young black (Caribbean or African) men (though statistically insignificant), men of Indian ethnic origin, religious services (except non-Christians), and the people who live in Greater London are more likely to co-reside with their fathers. So the variables that affect the sample selection are the ethnicity, social norms and customs and in the later case (Greater London) the high price of buying a separate house.

#### *Employment Selection Problem*

The intergenerational occupational mobility can be estimated only for people who are employed. Because if we want to estimate how the earnings of a child is related with her/his father then we should consider the employment model. But the people who are working or employed are not a random sample so the data generated from the sample is a sub-sample of people who are employed. There may be some unobserved factors (potential variables) affecting the status of a child to be employed. Like the co-residence problem of sample selection this will definitely lead to a selection bias and particularly more relevant when we are interested in estimating the association between earnings of daughters and fathers because women generally face more hindrances to occupy themselves in jobs.

Out of the two problems the first one is large both in terms of size and bias, while the employment selection issue seems a bit insignificant. To address this problem Heckman-type correction method (Francesconi and Nicoletti, 2006) can be used. This is a two-step estimation procedure and it is the first solution for sample selection bias (Vella, 1998). This type of correction attempts to correct the selection bias on unobserved variables. For example, a cognitive skill of a person is likely to affect the probability of employment and earnings. But it also produces bad result due to the biasness because of the omitted variable problems still exist there. Nicoletti (2008) proposed a weighted least squares with weights given by the inverse of the propensity score. In an extension, Nicoletti (2008) suggested a method of the combination of the regression adjustment and the weighting methods. This is more robust in terms of consistency because if one of the methods is consistent then it will produce a consistent estimator.

#### **Conclusion**

Intergenerational mobility is an indicator of describing the society's happiness. The degree of mobility may vary from society to society and country to country due to the sharp differences of different societies but there is a clear evidence of correlation between parent's socio-economic characteristics and that of their children. This paper is a literature review and thus makes an attempt to define the technical terms, analyse the consequences of intergenerational mobility and

propose the measures to solve the potential difficulties. No doubt the degree of mobility can be an issue to formulate the public policies because compared to an advanced society it allows us to describe how a backward society is deprived from material wellbeing. Measurement error and life-cycle bias cause problem in estimation but we can solve this by considering specific model(s). On the other hand sample selection problem also creates biased estimate which can be eliminated by applying a combination of Heckman-type correction method and weighted least squares. Despite all sorts of difficulties this paper reflects the significance of studying intergenerational mobility over time.

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**Appendix - A**

This table is taken (without any modification) from “Lifecycle bias in estimates of intergenerational earnings persistence (page 554)”<sup>Ω</sup> by Nathan D. Grawe, Department of Economics, Carleton College, One North College St., Northfield, MN 55057, USA. In column-4 the estimate is the regression coefficient which regress the intergenerational earnings of father’s age.

Table 1: Estimates of intergenerational earnings persistence organized by mean age of father

Author	Mean age of father	Mean year of father observation	Estimate	Location
Lefranc and Trannoy (forthcoming) * @	34	1964.0	0.41	France
Lillard and Kilburn (1995)	30–40 <sup>?</sup>	1975.5	0.27	Malaysia
Björklund and Chadwick (2003)	40.5	1972.5	0.24	Sweden
Corak and Heisz (1999)	40–45	1980.0	0.23	Canada
Mulligan (1997)	40–45	1969.0	0.33	US
Björklund and Jäntti (1997) *#	43	1970.2	0.28	Sweden
Shea (2000) **	44	1969.0	0.36	US
Solon (1992)	44	1969.0	0.41	US
Björklund and Jäntti (1997) *#	45	1969.0	0.42	US
Mazumder (forthcoming) <sup>a</sup>	46	1982.0	0.39	US
Peters (1992)	47	1969.5	0.14	US
Bratberg et al. (forthcoming) <sup>b</sup>	47	1978.0	0.12	Norway
Dearden et al. (1997) *	45–50	1974.0	0.58	UK
Tsai (1983)	45–50 <sup>?</sup>	1958.5	0.28	Wisconsin
Österbacka (2001)	48.5	1972.5	0.13	Finland
Couch and Dunn (1997) #	51	1986.5	0.11	Germany
Wiegand (1997) *	51	1984.0	0.20	Germany
Altonji and Dunn (1991)	52	1967.3	0.18	US
Couch and Dunn (1997) #	53	1986.5	0.13	US
Österberg (2000)	53	1979.0	0.13	Sweden

<sup>Ω</sup> This is available online at [http://www.sciencedirect.com/science?\\_ob=ArticleURL&\\_udi=B6VFD-4GMJ925-1&\\_user=520547&\\_coverDate=10%2F31%2F2006&\\_rdoc=1&\\_fmt=high&\\_orig=search&\\_sort=d&\\_docanchor=&view=c&\\_rerunOrigin=scholar.google&\\_acct=C000025998&\\_version=1&\\_urlVersion=0&\\_userid=520547&md5=ce50b0717c2184698031163e0af1a57](http://www.sciencedirect.com/science?_ob=ArticleURL&_udi=B6VFD-4GMJ925-1&_user=520547&_coverDate=10%2F31%2F2006&_rdoc=1&_fmt=high&_orig=search&_sort=d&_docanchor=&view=c&_rerunOrigin=scholar.google&_acct=C000025998&_version=1&_urlVersion=0&_userid=520547&md5=ce50b0717c2184698031163e0af1a57) from 14 July 2005.

<sup>a</sup> Mazumder's estimate using three years of father's data is chosen in order to most closely match the methodology of the other studies in the table. When he uses six years of father's earnings data, his estimate is 0.47. His estimates resulting from ten and fifteen years of data are avoided since these estimates were found to be very sensitive to the treatment of top-coded earnings reports.

<sup>b</sup> The 1960 cohort is chosen from the Bratberg et al. study since it is twice as large as the 1950 cohort sample.

\* Studies using IV estimation.

\*\* Because Shea does not include the same number of earnings observations for each father, the precise years of observation and the average year of observation are clear from the study. However, the data are intended to be very similar to that of Solon.

? The range attributed to Mean Age of Father is particularly difficult to infer from information in the paper.

# Studies which are expressly cross-country comparisons.

@ The estimate found is that when sons are measured in 1993 and fathers in 1964. Average age of fathers taken from personal correspondence with authors.

## Technology Inertia and Poverty Trap in Sub-Saharan Africa: The Case of Nigeria

Peter Ezeah \*

**Abstract:** *Since the industrial revolution, advances in science and technology have continuously accounted for most of the growth and wealth accumulation in the leading industrialized economies. In recent years, the contribution of technological progress to growth and welfare improvement has increased, especially with the globalization process which is characterized by exponential growth in export of manufactured goods. This scenario is however absent in Africa and particularly Nigeria where there is technological inertia and a poverty trap. This paper argues that despite the fact that there exists a plethora of technology policies in Nigeria full benefits have not been derived from these efforts due to the absence of a strong innovation component in the policies. Secondly, Nigeria's technological progress is flawed as a result of the underutilization of indigenous talents for technological development and the undue emphasis placed on academic credentials. The paper submits that overcoming the technology inertia in Nigeria is essential to achieving the Millennium Development Goals (MDGs). To this end the talent-based indigenous technological development approach is recommended for employment generation and poverty reduction in the country.*

### Introduction

Africans have first responsibility for their own development but the misery endured by the world's poorest people who live in Africa is not just African problem. It affects the conscience of humanity as a whole. It threatens the global environment and it impedes world trade and development everywhere (Jones, 2006)

Africa's average per capital income is lowest in the world almost half of the continent's population live well below the poverty line of one United State's dollar per day, subsisting on less than US \$0.65 per day. Despite continuing growth in population, during the 80s and 90s the number of extremely poor in East Asia fell by 265 million but in Sub-Saharan Africa they increased from 164 million to 277 million, raising its share of the world's absolute poor i.e., those without any prospect of getting themselves out of poverty from 25 to 30% (Jones, 2006). The proportion of the developing world's population in extreme economic poverty fell from 28 percent in 1990 to 21 percent in 2001. Most of this improvement has occurred in East and South Asia (Wikipedia, 2009). On the other hand, in Sub-Saharan Africa, extreme poverty went up from 41 percent in 1981 to 46 percent in 2001, which combined with growing population; increased the number of people living in poverty from 231 million to 318 million (Wikipedia, 2009). The 2007 World Bank Report predicts that in the year 2030, Africa will be home to a larger proportion of the world's poorest people than it is today.

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The Federal Office of Statistics (FOS, 2006) puts the extent of Nigeria's poverty in 1985 as 46 percent. By 2001 poverty incidence in the country has reached 66 percent in statistical terms, this means that 76.6 million Nigeria's out of the then population of 110 million were poor. With an estimation of 150 million today, about 80 million were poor. According to (FOS, 2006), "poverty permeates virtually all ramifications of Nigeria's national life. In 2003, Nigeria ranked among the ten countries which have the greatest numbers of people without access to safe water. The World Bank Report (2003) stated emphatically that the cash income of the poor in Nigeria "is insufficient to cover minimum standards of food, water, shelter, medicare and schooling".

The cumulative consequence of the foregoing is that the majority of African and Nigerian households are imprisoned in a poverty trap. They cannot get out of poverty because they do not have the cash surplus required to invest in income enhancing activities. Nigerians are also caught in the poverty trap because they are too poor to invest in infrastructure, education, health care and other developmental indicators. Finally, Nigerians are entrapped in poverty because they lack the will and tenacity of purpose to nurture and develop their indigenous skills, and technological capabilities with which to launch industrialization to usher in authentic national development. With the African population expected to grow at 2.8 per year, it will require an annual improvement in productivity of at least, twice the level achieved since the 1970s to prevent an increase in the number of absolute poor. It is in view of this factor, that the heads of state and government through the New Partnership for African Development (NEPAD) recognized the importance of technology as a tool for achieving an industrial growth rate in the continent at 6% per annum. There is no gain saying the fact that Africa is saddled with a technological inertia. Research shows that the widening income and welfare gap between Sub-Saharan Africa and the rest of the world is largely as a result of the technology inertia responsible for the poverty trap in the continent.

With respect to Nigeria specifically, Usman (2008) argued that one of those critical factors militating against sustained industrialization, rapid and balanced development of the country's economy is the complete absence of technical progress to support all the development initiatives. For him, the prolonged crises in most sectors of the Nigeria's economy are not unconnected to technology problems.

Evidently, all measures predicated on the importation of foreign technologies have always proven to be pseudo-solutions which do not last. Sooner or later, the problems always tend to resurface again. In fact, the reason why past visions of national development such as 1990, 2000, 2010 etc were doomed to fail from the word go is attributable to their failure to initiate indigenous technological development to serve as their main engine or driving force. Thus, for any serious

vision to succeed to get Nigeria out of poverty, it must make rapid technological development its focal point. This is because of the fundamental linkages between technology, industrialization and economic development.

### **Conceptual Clarifications**

Poverty is a most conveniently expressed as a shortfall in consumption (or income) from some poverty line. The most commonly used poverty line is an income of US \$1 per day. However, this statistics does not adequately convey the full impact or implication of poverty. According to Wikipedia (2009), poverty is a shortage of such necessities as food, clothing, shelter and safe drinking water, all of which determine man's quality of life. It may also include the lack of access to opportunities such as education and employment which aid the escape from poverty and/ or allow one to enjoy the respect of fellow citizens. In addition to being unable to buy necessities of life, poverty affects a person's freedom to live a valued life and undertake critically important functions. Poverty excludes individuals and groups wholly or particularly from full participation in the societies in which they live [IFAD, 2001]. In the United States, according to Wikipedia (2009), "to be poor is to be deprived of those goods and services and pleasures which others around us take for granted".

Poverty is usually measured in either absolute or relative terms (the latter being actually an index of income inequality). Relative poverty views poverty as socially defined and dependent on social context. Absolute poverty refers to a set standard which is consistent over time and between countries. An example of an absolute poverty measurement is the percentage of a population eating less food than is required to sustain the human body (approximately 2000-2500 calories per day for an adult) (Wikipedia, 2009).

The World Bank (2006) defines extreme poverty as living on less than US \$1 per day, and moderate poverty as less than \$2 per day, estimating that "in 2001, 1.1 billion people had consumption levels below \$1 a day and 2.7 billion lived on less than \$2 a day".

Technology on the other hand, is any practical art which utilizes scientific knowledge to enhance human society and conditions. Technology has also been defined by Kalu (2000) as the study and utilization of manufacturing and industrial methods. Technology is central to manufacturing and consequently to an economy. It is therefore critical to the development and utilization of local resource endowment.

Technological capabilities according to Chambua (1996) are the capabilities needed to acquire, assimilate, use, adapt, and change or create technology. Technological capabilities include the



skills of persons in various economic sectors who have acquired technical knowledge about production process through formal training and learning by doing. It involves the following:

- (i) The search for available alternative technologies and the selection of the most appropriate.
- (ii) The successful use of the technology in the transformation of inputs into outputs.
- (iii) The further development of the technology as result of some innovation.
- (iv) The institutionalized search for more important innovation through research and development (Chambua, 1996).

### **Nigeria's Capability for Technological Innovations**

History reveals that Nigeria had well established technologies before the advent of the Europeans as evident in the sophistication which the country developed iron smelting, gun making, carving and pottery. It is therefore surprising that Nigeria is currently lagging behind in technological advancements.

In the 1950s and 80s, Nigeria spent enormous resources training her students in all areas of technology and arts. In this regard, professors Awojobi, Chike Obi, Wole Soyinka, Chinua Achebe to mention but a few immediately came to mind. All the five universities in the country then were centres of excellence, with the state-of-the-art equipment, outstanding educational system, outstanding professors, and highly competitive students. The students that excelled were given overseas scholarships in-order to advance in their fields of endeavour and interact with their colleagues in Europe and the Americas. This situation has deteriorated in the country. Nigeria has articulated science and technology policies in very critical areas, full benefits have not been derived from these efforts due to the sheer absence of a strong innovation component in the policies. For example, Nigeria's manufacturing over the years has been dependent highly on foreign equipment and machinery due technological backwardness and industrialization policy. This is the bane of Nigeria's economic development as a nation. This explains partly the low performance of manufacturing in the country. According to Okonkwo and Akpa (2004), the manufacturing sector in Nigeria between 1980-1985 during the pre-structural adjustment period experienced downward trend with average capacity utilization of 44%. Between 1986-1993, during the structural adjustment period (SAP) capacity utilization was an average of 40.8% from 1993-1998 during post SAP period, manufacturing index fell from 185 to 133 while capacity utilizations dropped to 32%. The point being made here is that the absence of indigenous technological innovation hampers development in the country.

Innovation is often confused with research and measured in terms of scientific or technological outputs. However, according to Yisa (2009), innovation is neither research nor science and technology, but rather the application of knowledge in production. This knowledge might be acquired through learning, research or experience, but until it is applied in the production of goods or services, it cannot be considered innovation (Yisa, 2009). Simply put, innovative technology is a body of knowledge available to a civilization that is of use in fashioning implements, arts, skills, and extracting or collecting materials (Odetunde, 2000). Technological innovation requires mavericks who are willing to go where no others have gone before, leaders who are willing, ready and capable of committing resources in order to achieve common goals and shared vision, and a workforce that is trainable and ready to accept challenges. Presently, Nigeria's capacity for technological innovations is very low. This accounts for the technological inertia and poverty trap in the country.

As a solution, some people consider technology transfer from the West as a way out of the technological inertia in Africa. However, experiences from India, Japan, Malaysia, south-Korea, Hong Kong, Singapore, Brazil and others show that technology is not restricted to wholesale transfer of foreign technology. They looked inwards. Thus, the critical point is the acquisition and strengthening of domestic technological capability to produce indigenous goods and services for employment generation and poverty alleviation. The points being made here is that indigenous technological capability is quite weak in Nigeria presently.

### **Factors Militating Against Technological Development in Nigeria**

Since independence, Nigeria's policy makers have tended to think of technology erroneously in the context of finished products rather than as a set of ideas rooted in the local culture with the set purpose of serving the basic needs of the people. This perception of technology focuses attention on the importance of finished products. Again, the problem of technological development in Nigeria reveals factors such as poor funding for science and technology education, inadequate infrastructure for research and development (R & D), poor staffing and lack of linkage between (R & D), and industries [Usman, 2008]. According to Usman (2008), Nigerian universities limit their roles to teaching and manpower production at the total exclusion of research in order to advance and improve society.

Other identifiable problem hindering the launch of Nigeria's technical progress is the failure to correctly exploit the naturally endowed talents in Nigeria. Thus, there is the underutilization of talent in Nigeria. This is due to the tendency to confuse academic intelligence with technological potentials. Thus, while the industrially advanced economics of North America, and Western Europe or the rapidly developing Asian countries respect the utilization of natural talents in

everyday endeavour, especially science and technology, and tend to attract talents from other countries, African countries including Nigeria only utilize talents from other countries. African countries, including Nigeria, only utilize talents in sports and entertainments. That is why they are mostly successful in those areas. In most other activities, including science and technology, Nigeria recognizes only paper qualifications. This is a problem because existing educational training systems are designed to usher in technical progress in Nigeria, but academic credentials are inaccurate indicators of the technological potentials of Nigeria. In fact even in developed countries, there is no clear correlation between academic intelligence and inventive talents. For instance, while there are some individuals who are good in both theory and practice of technology; there are many others who are academically sound but have problems using tools; just as there are many who are inventive geniuses even though they do not have high credentials [Usman, 2008]. Inventors such as Thomas Edison, Gutenberg, the Wright Brothers and Bill Gates etc. are people that have changed the course of human history, but they do not even have a University degree. Using academic performance only, to anchor technological development is faulty and can only produce poor quality and quantity technology output that cannot compete favourably with the high tech goods produced by inventive geniuses in the advanced economics.

Given the high level of today's global competition in the technological sector, it is inappropriate to anchor all our programme of technological development solely on academic performance, hence the need to adopt the talent-based approach to correctly select those who have the right aptitude. This approach de-emphasizes academic credentials, and instead, focuses on the inventive talents in some people. The talent-based approach to technological development (TBITD) goes beyond the mere acquisition of skills for operating or servicing imported machines as presently handled by the Polytechnics and other vocation training centres in Nigeria. This would involve the introduction of a special programme on adoptive technology in some selected universities in Nigeria; with separate units having well equipped workshops and laboratories to those who possess the acquired inventive flair, such a scheme should be designed to re-awaken and nurture the spirit of inventiveness which is almost dead in Nigeria. It should focus on imparting the skills for conducting extra-ordinary research required for the adaptation and advancement of technologies to create employment and reduce poverty in Nigeria.

In Nigeria today, there are several universities, polytechnics and colleges of technologies duplicating research efforts. Most oftentimes, the researchers' efforts are not mindful of the end-users needs when the research output do not meet the yearnings of the people, the whole effort ends in colossal waste of the little resources available to us.

Other problems militating against technological breakthrough in Nigeria include:

- (1) Inconsistent, uncoordinated and inappropriate policies.
- (2) Fragmented and overlapping institutions.
- (3) Low productivity.
- (4) Private sector under investment.
- (5) Unfavourable business climate.
- (6) Infrastructural deficiencies.
- (7) Limited access and use of long-term business credit.
- (8) High risk of investment.
- (10) Insecurity of lives and properties.
- (11) Inflationary trends.
- (12) Presence of sub-standard materials.
- (13) Paucity of funds for research.

It is necessary at this point to underscore the problems of deficient infrastructure with particular reference to power and energy. It is an understatement that without adequate power and energy, the economy and technology in particular cannot thrive.

### Conclusion

To achieve economic independence, the need for technological breakthrough becomes imperative. In this regard, an institutional framework that focuses government policies on the provision of basic infrastructures is a *sine qua non* for technological development in Nigeria. This is to facilitate and encourage the development of ideas rather than the consumption of already developed ideas and their consequent useable products which will also institutionalize the development of appropriate indigenous technology in Nigeria. To this end, sustainable technology in Nigeria should be based on building a stable institutional framework that reinforces the acquisition of ideas about technology. With this in place poverty will be drastically reduced in Nigeria.

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## Effect of Gender and Status on Job Stress among Police Officers in Ekiti State of Nigeria

Bunmi Omolayo\*

**Abstract:** *This study was carried out to measure the effect of gender and status on job stress among Police Officers in Ekiti State of Nigeria. One hundred and fifty-three police officers randomly selected from Ekiti State Police Command participated in the study. The participants were made up of both senior and junior police officers between the age of 25 and 55 years. Using the t-test for independent groups to test the two hypotheses for this study, results shows that female police officers experience a higher significant stress level than their male counterparts. Results also revealed that senior police officers do not experience more stress level than junior police officers. Recommendations were made based on the findings of this study.*

### Introduction

Stress is a critical factor in determining individual's health and well-being. It is a phenomenon that has generated a lot of researches mostly as a result of its negative perception and its bio-medical effect on human behavioral manifestation. Stress has been described as a bio-chemical and behavior reaction associated with fight or flight response, characteristics of the primitive cavemen as evident in his life when confronted with life threatening events. Scientifically, it has been used as a psychological precursor of illness consequent of number of conditions or as a catchall for anxiety, discomfort, and the likes.

Stress is defined as the individual's response to circumstances and events called stressors which threatens them and tax their coping abilities (Locke & Taylor, 1990), the non-specific response of the body to any demand made on it (Sutton & Khan, 1984), lack of fit between the needs and abilities of individuals on one hand and the supplies or demands of the environment on the other (Watson & Penne baker, 1989), and an adaptive response in reaction to external events or situations that place extreme psychological and physical demands on the individual (Cooper & Marshall, 1976).

Personality has been identified as one of the numerous factors in response to job stressors, and it is the most overly anxious people who are susceptible to their effect (Locke & Taylor, 1990). It appears however, that the single factor most likely to lead to job stress is a poor fit between the person and the job environment (Horowitz, 1979). Stress level varies between jobs. Studies have shown that substantial stress is obtainable from teaching as compared with what is obtainable by construction workers (Sutton & Khan, 1984). Organizational factors such as job security, shift work, long work hours, role conflict, physical hazard, exposure and interpersonal conflicts with co-

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workers or supervisors contribute to increased stress levels. Reciprocally, elevated stress levels in an organization are associated with increased turnover, absenteeism, sickness, low productivity and low morale. Work stressors are related to depression, anxiety, general mental distress, heart disease, ulcer and chronic pain (Hayness & Fenilabib, 1980).

Psychological stressors produce altered measurements of various bodily chemical hormones, blood pressure as well as altered level of anxiety (Cooper & Marshall, 1976), and childhood stresses and experiences has a degree of relevant of stress in adult roles set (Lazarus, 1991). Personality moderates the relationship between role stressor and satisfaction to the extent that negative impact of role stressor is relatively less pronounced when ability is high (Horowitz, 1979). Abdul-Halim (1978) found that stressors tend to be more aversive for individuals in low-enriched jobs than in high-enriched jobs. In a review of studies in psychopathology, Levi (1989) reported that women had higher rates of nervousness while men had consistent high rate of personality disorder caused by stressors. In comparing men and women at similar occupational levels, Compos and Williams (1990) found that women reported more symptoms of stress than men (such as feeling of depression, nightmares, and feeling of overwhelm).

### **Hypotheses**

1. Female police officers will experience a higher significant level of job stress than their male counterparts.
2. Senior police officers will experience more stress on the job than junior police officers.

### **Research Methods**

#### *Research Design*

The research design used for this study is survey research design with the use of questionnaire. Gender and job status are the independent variables while job stress is the dependent variable.

#### *Research Participants*

One hundred and fifty-three randomly selected police officers participated in the study. They consist of fifty senior and one hundred and three junior officers, out of which fifty-six were female and ninety-seven were male. Their age ranges between 25 and 55 years. They were selected from the Ekiti State Police Command in Nigeria.

### *Research Instruments*

The instrument used to generate data from the participants is a 15-item questionnaire tagged Job Tension (JT) developed by Khan, Wolfe, Quinny, and Snoeck (1964). It has alpha reliability coefficients of .87 (Sheridon, et al, 1978) and .39 (Oseghare, 1988), and a concurrent validity coefficient of .01 (Sheridon, et al, 1978).

### *Procedure for Data Collection*

The consent of the selected participants was received before distributing the instruments to them. Equally, verbal permission was granted by the sectional heads of the organization before embarking on the instrument distribution. The participants returned the instrument safe for analysis.

### *Statistical analysis*

The individual participant's scores were analyzed using the t-test for independent groups, a commonly used statistical method in the behavioral sciences.

### **Results**

The results of the data analyzed are presented in Table form as follows:

**Table 1: Summary table of t-test showing the comparison of the scores of female and male police officers in Ekiti State**

Participants	N	X	SD	Df	t-critical	t-computed	p
Female police officers	56	42.48	7.804	151	1.645	3.205	>.05
Male police officers	97	38.02	8.824				

t(151) =3.205, p>.05

Source: Author's Survey

Result as shown in Table 1 revealed that female police officers experience significant high level of stress than their male counterparts. Hypothesis 1 is therefore accepted.



**Table 2: Summary table of t-test showing the comparison of the scores of senior and junior police officers in Ekiti State.**

Participants	N	X	SD	df	t-critical	t-computed	P
Senior police officers	50	40.26	9.558	151	1.645	0.607	>.05
Junior police officers	103	39.35	8.415				

t(151) = 0.607, p < .05

Source: Author's Survey

From Table 2, result shows that senior police officers do not experience more job stress than the junior ones. Therefore, the second hypothesis is rejected.

## Discussion

This study set out to examine two hypotheses. The first was female police officers will experience a higher significant level of job stress than their male counterparts, and the second hypothesis was senior police officers will experience more stress on the job than junior police officers. Findings from this study show that female police officers experience high significant stress level than the male police officers. The plausible explanation of this finding could be attributed to the cultural values of the Nigerian society. The female population has a lot of responsibilities to carry out such as taking good care of the home and children, exchanging family visitation and engaging in series of social gatherings. The male population on the other hand is considered to be the breadwinner of the family whose responsibility is just to release fund for the attainment of physiological needs of the family. However, the responsibilities of the female population as a result of cultural values and societal expectations have negative effect on their physical well-being and coping mechanisms on the job. They usually have very little time to ease their pent-up tension that they have been keeping or harboring from their workplace. This finding is in consonance with the previous findings of Compos and Williams (1990) who found that women reported more symptoms of stress than men.

Furthermore, the result of this study revealed that senior police officers do not experience more stress on the job than the junior police officers. This suggests that status on the job has no

significant effect on the stress experienced by both the senior and junior police officers. The plausible explanation of this is that every job activities have its attached stressors, which the workers performing that work activities will have to experience. These job stressors are present in all work activities.

## Conclusion

Result of this study indicated that female police officers experienced a significant higher job stress than their male counterparts. It was also found in this study that senior police officers does not experience more stress on the job than the junior officers.

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## **Psychosocial Characteristics and Experience of Discrimination and Stigmatization among Spouses of HIV/AIDS Infected Husbands: A Study from India**

**Latha, KS.\* and Simi John\*\***

**Abstract:** *The strains of those caring for people with HIV/AIDS are enormous. The purpose of this study was to ascertain the socio-demographic characteristics of spouses of HIV/AIDS infected husbands, frequency of depression/depressive symptoms and the various correlates associated and the experience of discrimination and stigmatization. Thirty caregivers were recruited from a rehabilitation agency where their husbands were admitted. Spouses were interviewed using structured instruments. Majority were within 40 years of age; with primary education, married for last 5 years with good- satisfactory marital life. 24(80%) tested as positive and aware of the implications of their illness; 27 (90 %) fulfilled a criteria for a depressive disorder. It was found that in almost all settings of life stigma and discrimination was seen. However the community reactions were comparatively lesser than in other settings. The implications of the findings discussed in the light of interventions proposed for the spouses.*

### **Introduction**

Current research has tended to exclude the wellbeing of caregivers in favor of focusing on HIV patients. The impact of caring for a chronically ill person or a person with a disability on the physical and mental health of the caregivers has, however, been long recognized and studied (Baumgarten(1989); Pinquart & Sörensen 2003; Pinquart & Sörensen 2007; Prachakul & Grant 2003; Pruchno 1990; Saunders 2003 ; Savage & Bailey 2004; Vitaliano et al 2003). On the whole caregivers were significantly depressed, experienced more stress, and had lower self-efficacy than non-caregivers (Pinquart & Sörensen 2003).

Results from review studies have suggested that sociodemographics, such as gender, lower socioeconomic levels, relationship between caregivers and patients, lack of social support, poorer physical health status and risky health behaviours are associated with mental ill-health of caregivers (Connell et al 2001 ; Cooper et 2007 ; Haley 2003 ; Klassen et al 2007; Savage & Bailey 2004; Van der Vooprt, et al 2007).

The caregivers in many situations are predominately female and the people they care for are usually their partners or older adults. The spouses are one of the main care givers in the family. The strains on those caring for people with HIV/AIDS are enormous. The caregivers are a

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precious resource. The quality of care they provide and their ability to do so over a sustained period depend on the protection of their own well-being and morale.

The acute and chronic aspects of HIV disease place profound demands on the spouses for practical support. The unpredictability of the disease, the uncontrollability of symptoms and the debilitating effects of disease contribute to stress and depression of spouses (Cohen, & Lazarus 1979). Unlike professional caregivers, partners do not have the protection of a limited work day of professional distance. In addition many spouses have not taken care of a seriously ill person, nor have they seen someone die.

Care giving to people with chronic illnesses has been found consistently to have negative effects on the informal care giver's health and well-being. It has been documented that care givers experience various physical health problems; depression; disruption in interpersonal relationships, social life; work life and financial strain associated with care giving (Given & Given 1998).

Depressive mood is the distressing emotion most frequently reported in care givers of people with AIDS (Given & Given 1998; Bergman-Evans 1994; Knop et al 1998; Turner & Catania 1997; Flaskerud, & Tabora 1998; Wight 2000; Land et al 2003). In a study where depressive mood was considered an outcome measure also found it to be a strong predictor of poorer physical, social and role functioning, as well as perceived physical health (Flaskerud, & Tabora 1998). Although this is well recognized in principle, care for the carers is rarely given the priority it deserves.

### **Stigmatization and discrimination**

Social reactions to people with AIDS have been overwhelmingly negative. Stigma is triggered by many forces, including lack of understanding of the disease, myths about how HIV is transmitted, prejudice, lack of treatment and irresponsible media reporting on the epidemic. HIV/AIDS related stigma and discrimination also interact with pre-existing fears about contagion and disease. The existence of HIV/AIDS-related stigma has been widely documented all over the world (Herek & Capitanio 1999; Klein et al 2002; Snyder et al 1999; Herek 1999; McGrath et al 1993; Ambati et al 1997; Bharat & Aggleton 1997; Bharat et al 2001). HIV infection fits the profile of a condition that carries a high level of stigmatization (Herek 1999; Goffman 1963; Jones et al 1988). According to UNAIDS, HIV/AIDS related stigma and discrimination are linked to the actions and attitudes of families, communities, and societies (UNAIDS, 2002).

The impact of HIV/AIDS on women is particularly acute. The existing social inequalities—especially those of gender, sexuality, and race—are at the root of HIV-related stigma. In many developing countries, women are often economically, culturally and socially disadvantaged and lack equal access to treatment, financial support and education.

HIV-related stigma manifests itself in various ways. HIV-positive individuals, their loved ones, and even their caregivers are often subjected to rejection by their social circles and communities when they need support the most. Stigmatized individuals may suffer discrimination that can lead to loss of employment and housing, estrangement from family and society, and even increased risk of violence (Herek 1999; Gielen et al 1997; Zierler 1997). The forms of discrimination against women included being refused shelter; denied a share of family property; denied access to treatment and care; being blamed for husband's HIV diagnosis when the diagnosis is made soon after marriage (Bharat 1996). HIV/AIDS-related stigma compromises the well-being of people living with the disease.

Family responses to the infected relative were influenced by community perception of the disease and such responses included fear of isolation and ostracism ( McGrath et al. 1993; Bharat & Aggleton 1999 Warwick et 1998) leading to concealment of diagnosis leading to stress and depression within the family Bharat & Aggleton 1999.

The present study aims to assess the frequency of occurrence of depressive symptoms/clinical syndrome and frequency of occurrence of stigma and discrimination and its nature in spouses of HIV/AIDS infected persons and the various correlates of the same.

### **Materials and Methods**

The sample was taken from the Rehabilitation Centre for HIV/AIDS, Mangalore which comprised of 30 spouses of HIV/AIDS infected husbands who were admitted in the facility for management of infections and other symptoms. Permission was sought from the authorities of the centre and as the study did not involve any interventions no ethical clearance was required at that period when the study was conducted. The purpose and format of the study were explained and consent was taken. Of the forty five who were approached to participate in the study fifteen declined. Interviews were conducted in privacy. A clinical interview was conducted to generate ICD-X diagnosis. The interview seemed to provide an outlet for the expressions of emotions for the participants, as many were overwhelmed with the experience of care giving and worried for their own health and future. Consequently each interview lasted from 1<sup>1/2</sup> -2 hours. Extensive notes were taken to record the qualitative comments of the spouses, in addition to their responses to the structured questionnaires. Those satisfying the inclusion criteria were taken. Standardized

tools were used for sociodemographic data which included details such as age of the spouse, education, and religion and employment status, the head of the family, family type, sero status of the spouse and child/children, reactions of the family, marital details like duration of marriage and quality of marriage. In addition social support and coping strategies were also enquired. To quantify depression Hamilton Rating Scale for Depression (Hamilton 1960) and Beck's Depression Inventory (Beck et al 1974) were used. The schedules to evaluate the experience of stigma and discrimination among wives of patients with seropositivity in various settings were assessed.

### **Instruments**

#### *Hamilton Rating Scale for Depression -HDRS (1960)*

The Hamilton Depression Rating Scale (Hamilton 1960) has been the gold standard observer rated scale for the assessment of depression for more than 40 years. The Hamilton Depression Rating Scale (HAM-D) has become the most widely used depression severity rating scale in the world. It was originally published by Max Hamilton in 1960 (Hamilton 1960) to measure severity of depression in previously diagnosed depressed inpatients. Since that time, multiple versions of the scale have been created. In addition, structured interview guides, self-report forms, and computerized versions have been developed in an effort to standardize administration of the scale and improve the psychometric characteristics of the individual items. Many of the psychometric properties of the Hamilton depression scale are adequate and consistently meet established criteria. Internal reliability estimates ranged from 0.46 to 0.97. Retest reliability for the Hamilton depression scale ranged from 0.81 to 0.98. The 24-item version was used. Items on the HAM-D are scored 0 to 4. The rater enters a number for each symptom construct that ranges from 0 (not present) to 4 (extreme symptoms). The cut off is as follows: 0 - 4 normal, depending on age, education, complaints, 5 - 8 mild; 8 - 11 moderate; 12 - 15 severe. Ratings are completed by the examiner on the basis of patient interview and observations.

#### *Beck Depression Inventory (Beck et al 1967)*

Beck Depression Inventory (BDI) (Beck et al 1974) is a 21 item, self rated inventory with each item rated with a set of four possible answer choices of increasing intensity. When the test is scored, a value of 0 to 3 is assigned for each answer and then the total score is compared to a key to determine the depression's severity. The total score ranges from 0 to 84. Scores of 0 to 9 are considered minimal; 10 to 16, mild; 17 to 29, moderate; and 30 to 63, severe. Internal consistency has been high in numerous studies. The reliability figures here were above .90. Internal consistency studies demonstrated a correlation coefficient of .86 for the test items, and

the Spearman-Brown correlation for the reliability of the BDI yielded a coefficient of .93. Validity is supported by correlation with other depression measures. Because it is a self-report instrument, it is sometimes used to screen for major depression, for instance in medical outpatients.

#### *Schedule to evaluate discrimination and stigma*

A schedule to tap the discrimination and stigma in various settings such as hospital, family, community, schools and work place was prepared by the authors after going through the previous literature related to the topic and in consultation with the experts who validated the same.

#### **Data Analysis**

Statistical analysis was carried out with the Statistical Package of Social Sciences (SPSS). Descriptive statistics were used to determine the background characteristics of the sample such as age, education, religion, employment status and family type. Mean scores were computed for depression. Due to small sample size appropriate statistics could not be applied.

#### **Results**

The mean age of the spouse was 33.6(S.D.7.94) with a range of 19-56 years and the infected husband was 36.00(S.D.7.78) with a range of 25-60 years. Majority of the spouses i.e., 50% were in the age group of 31-40 and 21-30 years was 23%. As regards education 40% had primary education; 27% high school and about 20% had attended college. The distribution of religion of the spouses was 37% Hindus; 30% Christians and 23% Muslims and 10% from other religions. Employment status of the spouses varied, working in semiskilled or unskilled jobs 40%; professionals 10% and rest were housewives; majority from rural or semi urban background; 50% hailing from nuclear and the rest from non-nuclear families. In 43%, the husbands and 33% of spouses were the main bread winners and 60% of husbands were the head of the family. The socioeconomic status ranged from lower to lower middle class.

The duration of marriage: 36% married for 1-3 years and 47% married between 3-10 years. Regarding the quality of marital life 57% rated their marriage to be good-satisfactory. Of the 26 spouses, who tested their blood for HIV, 24(80%) tested as positive and except 17% the rest were aware of the implications of their illness. There was not much difference in the duration of contact of HIV in husbands and their spouses. Among the spouses in 23.3% the duration of infection was less than 1 year; 20% >1-3 years; 20% >3-5 years and in 20.6% 5-10 years. Among the spouses who tested their children (mean number of children 1.2) -24(80%) tested as positive.

The most commonly reported physical manifestations among the spouses were: STD 17 %; skin lesions 13%; fever and cough 10 %; and lymphadenopathy 10%; tuberculosis 7%.

The spouses described their emotional reactions towards their husbands after diagnosis was confirmed: 64% denied any emotions; 43% were angry; 30% sympathetic and 17% continued to care for their husbands as earlier. Many of them reported more than one reaction. In the sample 27(90 %) fulfilled a criteria for a depressive disorder and 3(10 %) a mixed state of depression and anxiety.

**Table 1 Distribution of Sociodemographic characteristics of the sample**

<b>Variable</b>	<b>%</b>
<b>Age</b>	
Mean Age of the Spouse(wives)	33.6
S.D.	7.94
Range	19-56
<b>Mean Age of Husbands</b>	36.00
S.D.	7.78
Range	25-60
<b>Education</b>	
Primary	40.00
High school	27.00
College	20.00
<b>Religion</b>	
Hindus	37.00
Christians	30.00
Muslims	23.00
Other	10.00
<b>Employment status</b>	
Semiskilled	40.00
Professional	10.00
Housewives	50.00
<b>Type of Family</b>	
Nuclear	50
Non- nuclear	50
<b>Main bread winner</b>	
Husband	43.00
Self (wives)	33.00
Others	24.00
<b>Head of family</b>	
Husband	60.00
Others	40.00
<b>Duration of marriage</b>	
< 1year	13.00
1-3 years	23.00
3-5	20.00
5-10	27.00
> 10	17.00



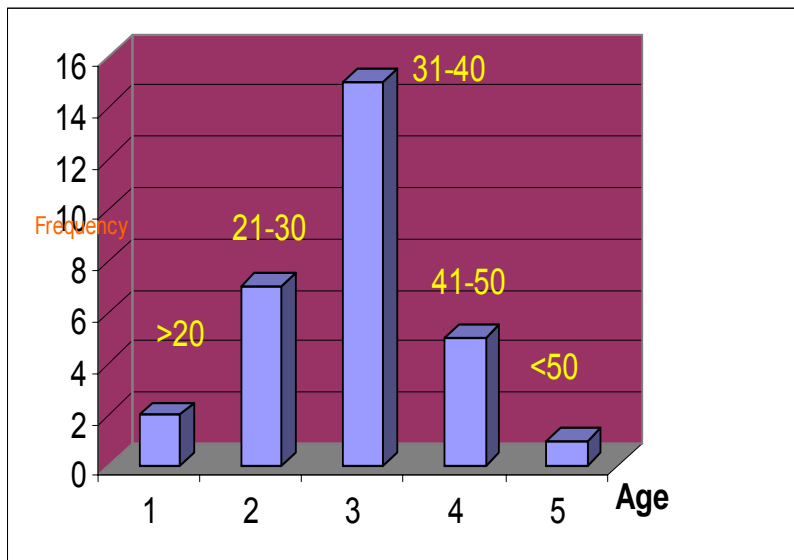


Figure 1: Distribution of the Age groups in the sample

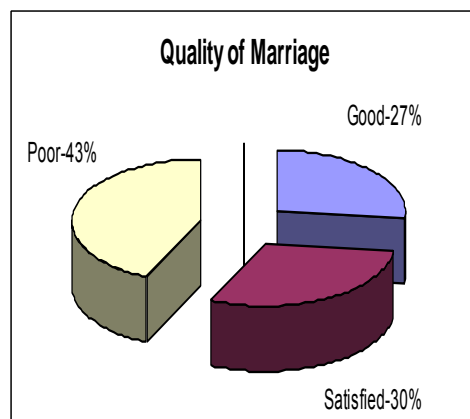


Figure 2: Quality of Marital Life

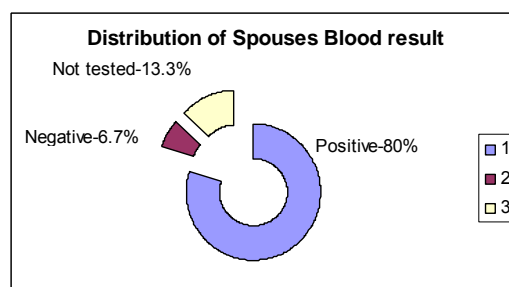


Figure 3: Distribution of Spouse's Blood Result

The mean BDI scores were 28.8 (S.D.8.7) with an observed range of 14-53.and on the HDRS the mean were 45.4(S.D.10.7) with an observed range of 30-69. On BDI 18(60%) fell in the moderate degree of depression and 36.7% severe degree on the other hand on HDRS all of them were in the severe category of depression.

**Table 2: Distribution of Mean & S.D. of Depression Severity of BDI & HDRS**

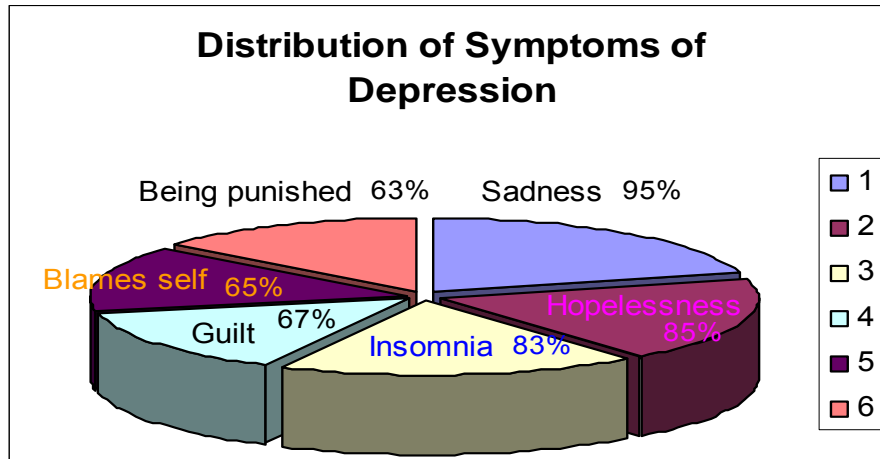
Variable	BDI*	HDRS <sup>§</sup>
Mean	28.8	45.4
S.D.	8.7	10.7
Observed Range	14-53	30-69
<b>Severity</b>		
Normal	--	--
Mild	1	-
Moderate	18	-
Severe	11	30
Total	30	30

\*BDI- Beck Depression Inventory <sup>§</sup>Hamilton Depression Rating Scale

The most frequently reported symptoms given in a rank order, were sadness-1 (95%); hopelessness-2(85%); sleep problems-3(83%); guilt-4(67%); blame oneself-5(65%); being punished-6(63%).

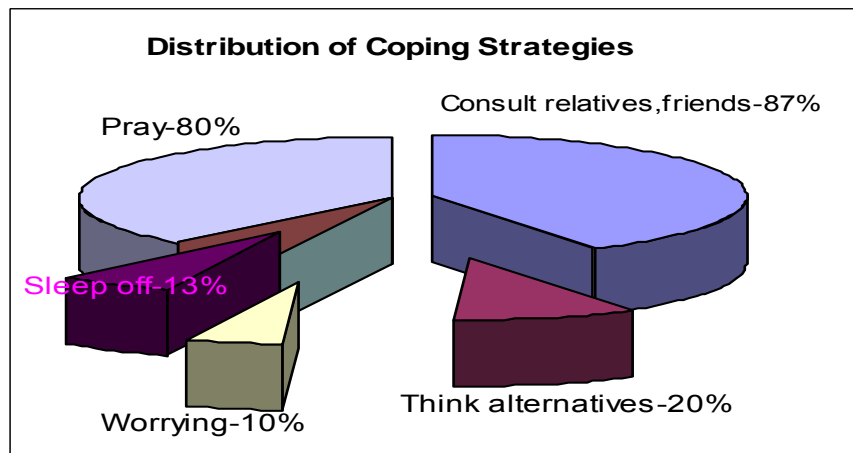
**Table 3: Most Frequently Reported Symptoms**

Symptoms	%	Rank
Sadness	95.00	1
Hopelessness	85.00	2
Sleep problems	83.00	3
Guilt	67.00	4
Self blame	65.00	5
Being punished	63.00	6
Anxious	40.00	7



**Figure 4: Distribution of the Common Depressive Symptoms Reported by Spouses**

The coping strategies commonly utilized by spouses were consulting relatives/friends/ professionals 87%; pray to God-80%; try to think of alternatives 20%; and excess caffeine intake-13%. The social support network were poor 37% reported just one or two members in their network from whom they could derive assistance, whereas about 43% had up to 5 members to contact in times of need.



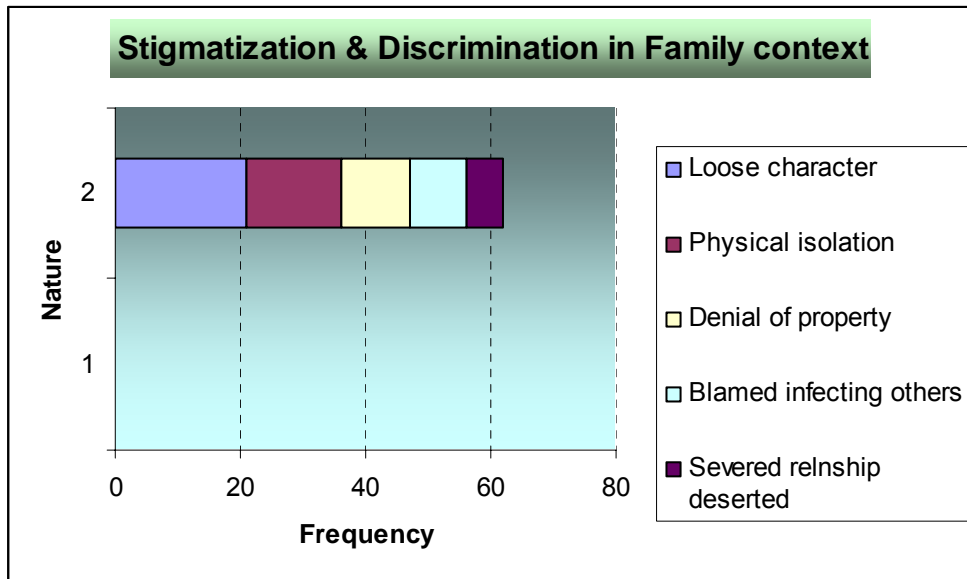
**Figure 5: Distribution of Coping Strategies**

**Stigmatization and discrimination**

The discrimination and stigma towards the spouses in the various settings and contexts are described separately. In all the contexts, the reactions towards the spouses were more than one.

*Family context*

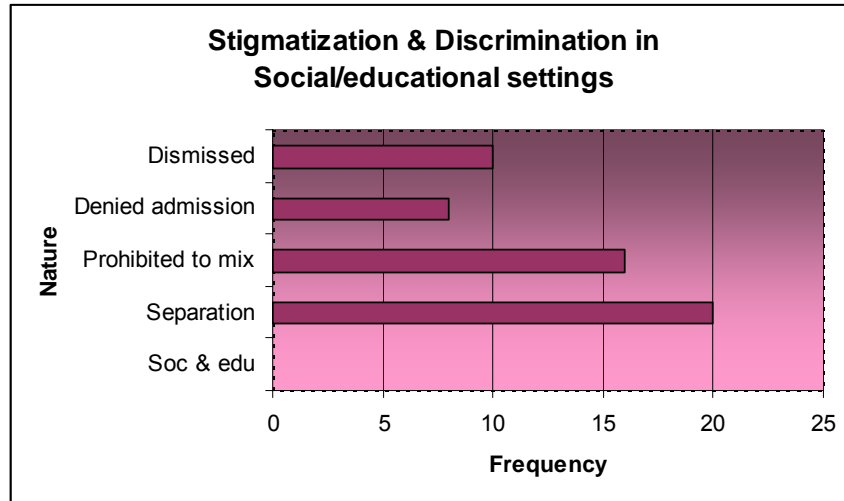
The most common reactions of the family members toward the spouse is given in a rank order (a) 21 (70%) stigmatized the infected spouses as of loose character ; (b) 15(50%) physical isolation at home-2; (c) 11(37%) denial of share of property; (d) 9(30%) blamed as passing virus to others-4; and (e) 6 (20%) had severed relationship /deserted.



**Figure 6: Stigmatization and Discrimination in Family Context**

**Social and educational settings.**

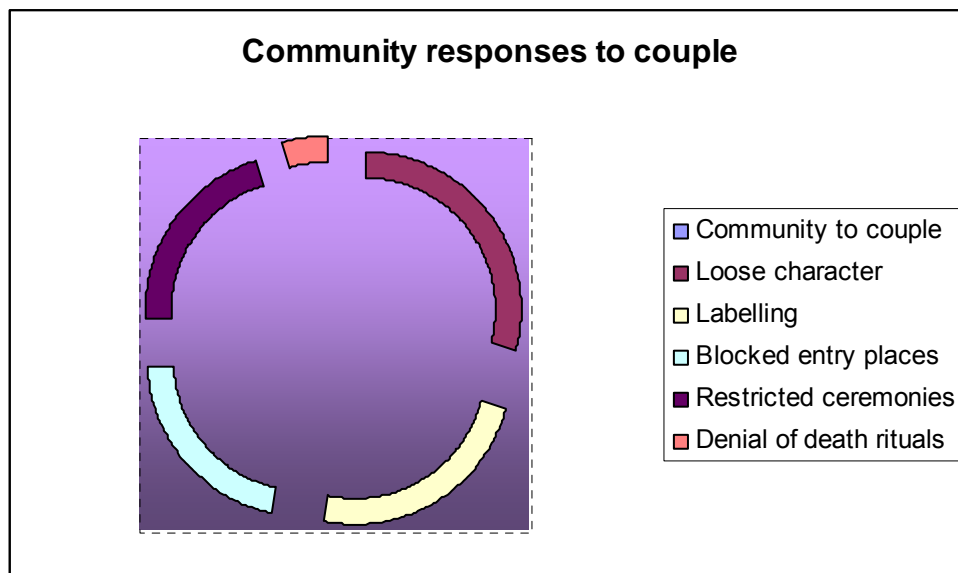
The nature of discrimination against children is given in rank order (a) 20 (67%) experienced discrimination and separation from others; (b) 16 (53%) prohibited to mingle with friends and others; (c) 8 (27%) experienced denial of admission to institutions; (d) 10 (9%) were dismissed from school.



**Figure 7: Stigmatization and Discrimination in Social/Educational Settings**

*Attitudes of the community towards the couple*

The usual types of attitudes of discrimination towards the couple is put in a rank order (a) 18(60%) stigmatization as loose character; (b) 15(50%) labeling and name calling; (c) 13 (43%) the blocked entry to common areas; (d) 13(43%)-restricted from attending religious ceremony and (d) 3(10%) denial of death ritual to husbands.



**Figure 8 Community Responses to Couple**

**Public/community reactions**

Of the thirty spouses 22(73%) experienced the reactions such as being insulted or teased by others 11(37%) and 11(37%) respectively and 8(27%) reported being belittled by the public.

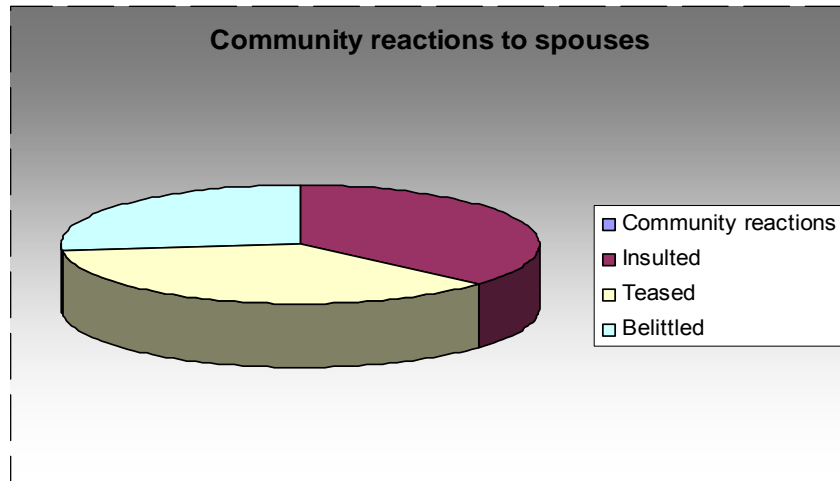


Figure 9: Community Responses to Spouses

**Hospital and health care settings**

The total sample of thirty spouses 16(37%) reported that they and their husbands were refused treatment; followed by physical isolation in the wards 15 (50%); refused admission in hospitals 13(43%); easily discharged from the hospitals 13(43%) and 10(33%) experienced the unnecessary use of protective gears by hospital staff.

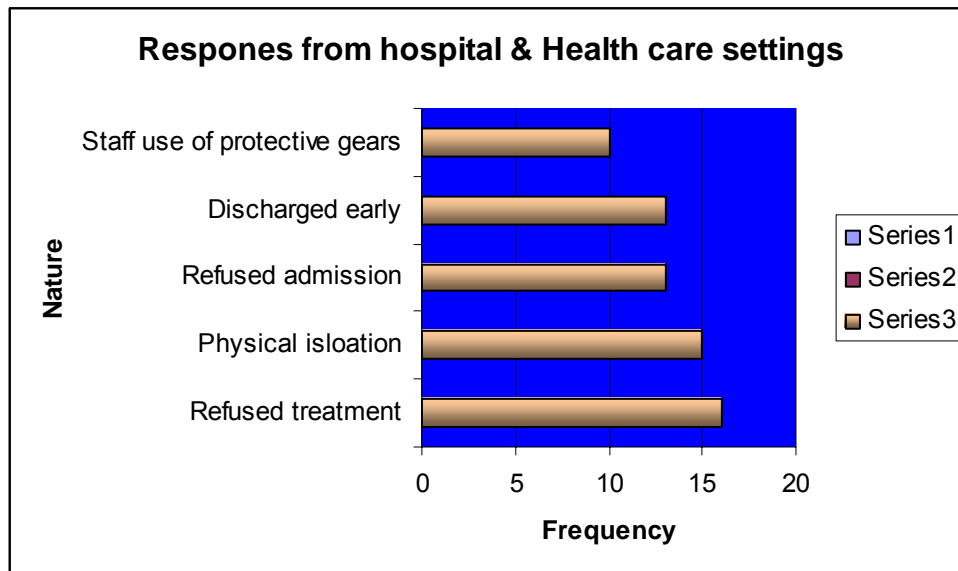
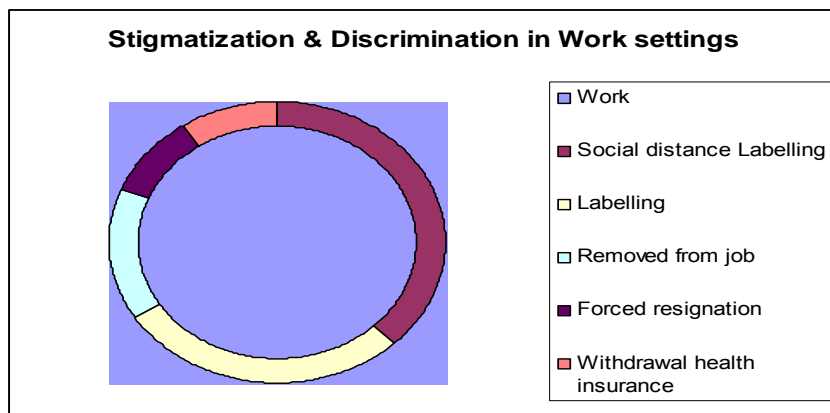


Figure 10: Responses from Hospital and Health Care Setting

**Work settings**

Of the thirty spouses 20(67%) of them faced social distance in the society; followed by the 15(50%) labeling and name calling; 8(27%) removed from the job; 5(17%) forced resignation and 5(17%) withdrawal of health insurance benefit.



**Figure 11: Stigmatization and Discrimination in Work Setting**

**Discussion**

In the present study both the infected husbands and their wives were in their third or fourth decade of life and in the IV stage of family life cycle i.e., couple with preschool children (Olson, 1989). In this stage of life and family life cycle the source of stress are multiple. Most of them were married for the last 5 years and usually in the early phase of marriage; partners are still in the process of building up close relationship with spouses. In addition to developing careers, they were caring for their dependent children and other members, if they are in an extended family. In this study fifty percent were from joint or extended families. Thus spouses of people with AIDS are premature in their care giving role due to their age compared with traditional caregivers. This premature characteristic of care giving can create additional stress over and above the stress associated with care giving.

A high proportion of the sample of spouses suffered from moderate to severe depression, with depressive cognitions and sleep disturbance, as the formal assessment indicated. Periods of extreme distress, grief, despair hopelessness and helplessness may be common among care givers. In addition many of them had various physical symptoms and infections related to AIDS. The disease progression in their partner portends not just the loss of the partner but their own psychological vulnerability to the extent that they see their partner’s disease progression as a forecast of their own future and they are physically vulnerable as their own disease progresses. HIV+ care givers whose own health deteriorates are likely to be concerned about being able to provide care while also needing to receive care. Depressive mood is the distressing emotion most

frequently reported in care givers of people with AIDS (Given, & Given 1998; Bergman-Evans 1994; Knop et al. 1998; Turner & Catania 1997; Flaskerud, & Tabora 1998)

Sleep problems in caregivers of people with AIDS, occur frequently and seem to be associated intimately with the care giving experience (Knop et al 1998; Flaskerud, & Tabora 1998). Sleep problems are also highly correlated with depressive mood and anxiety (Mcenany et al 1996). The existing literature suggests that caring for a loved one with human immunodeficiency virus (HIV) presents unique demands for the caregiver. Because many HIV caregivers are sexual partners of the care recipients, they may struggle with concerns about their own health risks in addition to that of their partner (Turner, & Catania 1996).

The physical and psychiatric morbidity of care giving as have been recognized usually are transient and circumscribed to the period of care giving. But in the case of informal caregivers especially in spouses it is not transient and circumscribed. These findings explain the presence of depressive symptoms associated with care giving in those without a prior psychiatric history (Schulz, et al 1990). Spouses who experience a conflict between their work and care giving roles are faced with a dilemma. On the other hand, spouses have major commitment to their partner's well-being.

In this study many spouses tried to cope with stress either by consulting relatives, friends or professionals or praying to God. Seeking social support and religious coping are strategies that involve elements of both problem-focused and emotion-focused coping. Support seeking may include asking for advice, concrete aid, emotional support, or justification for one's perceptions and/or actions (Thoits, 1986). Similarly, religious coping, which includes prayer, is generally considered a form of emotion-focused coping, but may involve asking for advice or even concrete aid. The study of religious coping strategies is as yet in its infancy (Pargament 1997). In general, religious coping may be most helpful with uncontrollable stressors (Aldwin 1994) or people facing chronic stressors such as caregiving, especially those in lower socioeconomic status groups (Cupertino et al 2000).

It is evident from this study that the spouses were discriminated against in all the settings- intimate as well other more impersonal or public settings. In most societies, AIDS is associated with groups whose social and sexual behaviour does not meet with public approval (Ambati et al. 1997) Negative responses and attitudes towards people suffering from AIDS are strongly linked to general levels of knowledge about AIDS and HIV and, in particular, to the causes of AIDS and routes of HIV transmission (Ambati et al 1997), Studies have reported that younger and more



highly educated people typically manifest lower levels of HIV-related stigma than older people and those who are less educated (Herek 1999).

With these findings in mind, it is perhaps not surprising that virtually every Indian setting in which HIV-positive people interacts with other people provides a back-drop for discrimination, stigmatization, and denial. Studies have documented HIV/AIDS-related DSD in contexts such as the family, the community (Bharat & Aggleton 1999; Bharat et al 2001; Bharat 1996; Warwick et al 1998) ; the health care system,( Tirelli et al 1991; Shisam 1993; Daniel & Parker 1990; Ogola 1990; Bharat 1996) and the workplace (Chinai 1995).

Due to stigma and HIV/AIDS-related discrimination, the rights of people living with HIV/AIDS and their families are frequently violated simply because they are known, or presumed, to have HIV/AIDS. This violation of rights hinders the response and increases the negative impact of the epidemic. Freedom from discrimination is a fundamental human right founded on principles of natural justice that are universal and perpetual. The basic characteristics of human rights are that they are inherent in individuals because they are human and that they apply to people everywhere (Fact Sheet: UNAIDS HIV/AIDS 2001). Stigmatization, therefore, can cause denial of treatment to patients.

This study is limited by small convenience sampling, the number of participants involved and the settings of the study. This may limit the generalizability of the results. Nevertheless, the study throws some light on the psychological status of the spouses of HIV+/AIDS infected husbands and the various correlates.

### **Implications**

This study has important therapeutic implications. Detail assessment of caregivers should be a routine which helps in a comprehensive intervention programme. Therapies should be tailored to the spouses or other caregivers' psychosocial, cultural and economic situation. Mental health professional be actively involved in treating depressive mood, anger, anxiety and sleep problems in care givers.

To conclude the level of care giving needed by persons with AIDS can be all-consuming and utterly exhausting emotionally as well as physically. Health professionals can play an important role validating caregiver's experience, helping them anticipate what is ahead, and guiding them to obtain additional practical and emotional support. Legal protections are essential components of the societal response to stigma and discrimination. The recognition of the negative consequences of HIV/AIDS stigma, for individuals as well as for the public health, have led to the enactment of

statutory provisions for people living with HIV disease in many Western countries and we have a long way to go before we achieve a society where HIV related discrimination cease to exist.

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## Vulnerability of the Female Youth to Drugs and Substance Abuse in Makindu Town, Kenya

Nelson Jagero\* and Faith Mbulwa\*\*

**Abstract:** *The concept of vulnerability helps to identify those members of a population who are likely to suffer long term disruptions of livelihood and lifelines as well as those who will find it more difficult to re-establish their accustomed patterns of living. Many people in Kenya when asked about consumption of drugs and substance will express a sense that there is a crisis. Today women and children abuse drugs and substance which was unheard of in the past. In the past women were safe, they would hardly abuse drugs and substance. Currently female youth are abusing drugs and they are catching up with the men.*

*The objective of the study was to investigate the extent to which female youth in Makindu town are vulnerable to drug and substance abuse. The research design used in the study was case study design using snow ball sampling technique. Twenty-nine respondents were sampled for the study. The data was collected by the use of unstructured interviews, participant observation for female youth who abused drugs and substance and focus group discussion guides for female youth whose partners abused drugs. Data was analysed using both quantitative and qualitative methods. The major finding of the study was that the extent to which female youth were vulnerable was high due to; peer pressure, unemployment, availability of drugs and substance and availability of money to purchase the drugs and substance.*

### Introduction

Man has long used drugs not only to enhance pleasure and relieve discomfort, but also to facilitate the achievement of social, religious and ritualistic aims. The range of available psychoactive substances was not large, and one of them usually became the local drug of choice – alcoholic beverages in some countries, and opium, cannabis or coca preparations in others. The degree to which society accepted the use of drugs differed according to the history, the occasion and the dose (Kramer and Cameron, 1975).

The Incas of South America for instance took cocaine which had a central role in their religious and social systems throughout civilization which stretched from around 1200 to 1500 (Wolmer, 1990). In classical Greece and Rome, alcohol was widely drunk and some scholars of the time mention the problems of alcohol abuse. Many drugs that are routinely used today were once prohibited in medieval times. According to Wolmer (1990) coffee was banned in the Ottoman Empire but with little success. In the 17th century in parts of Germany and Russia, the penalties

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for smoking tobacco included splitting or cutting off the nose of the offender. On the other hand, many drugs that are routinely used today were once freely available. Wolmer (1990) notes that in the United Kingdom in the early 19th century opium would be bought over the counter from chemists and even from grocers. Without a prescription Cocaine and cannabis were both legal in the United Kingdom and United States of America.

The 19th Century saw the development of drugs for special purposes. The special picture of drug taking behavior showed signs of complication. Prominent leaders and professionals called for attention to social problems resulting from widespread abuse of alcohol, cocaine and opium among others. As a result, drugs like cocaine, opium, peyote, heroine etc. were declared illegal overtime in many countries. Cannabis which is illegal in many countries has been currently legalized in Netherlands (Daily Nation, 2<sup>nd</sup> September, 2003).

Kenyan people have been consuming and using intoxicant and drugs from time in memorial. Alcohol was the most popular form of intoxicant. Alcohol was consumed in its natural form, or it was distilled into a spirit and then consumed. Illicit drinks in Kenya include *chang'aa*, *toivo*, *tornado* or *piwa*. Herbs, roots, bark, leaves and plants were sources of drugs. The most common sources were the following; tobacco leaves (chewed, smoked, or inhaled as snuff) miraa or khat leaves and outer skin from twigs (chewed), bhang (marijuana) leaves (smoked or chewed). Other forms of drugs from these sources were commonly used for medicinal purposes forming the basis of indigenous pharmacology, (Mwenesi, 1995).

In the traditional society, beer drinking was a privilege for the old men; women, young men and boys were forbidden to drink it. Men would take beer to the father of the woman they wished to marry and the circumcision of a boy would be followed by general drinking by elderly men. The culture restricted the use of some substance such as alcohol to senior age group and to special occasions often sanctioning the use of alcohol under strict conditions. The conditions spelt out that, only elders could consume alcohol, which could be consumed only during occasions such as when a baby was born, after the harvest of crops and during funeral. This is no longer restricted to senior age group or to special occasions (Willis 2002). Instead it is readily available to adults and to youth between 10 – 24 years. Not only does the youth consume alcohol but also use drugs to the extent that substances pose dangers to the health of the youth and ultimately to the well being of the nation.

Women's lives are affected by substance abusers, and more women are themselves becoming involved in drug use. Among teenagers, girls as well as boys experiment with all kind of drugs and other mind altering substances. The increase in drug taking among young people

incorporates all levels, and what began as the use of drugs in African traditional society for social relations evolved over time into a problem of dependence and abuse and is of great concern, (Kerachio, 1994).

A rapid assessment for UNDP in 1997 in Kenya showed that substance abuse among school and university students, parents and teachers is increasing. Students abuse cannabis, heroine, khat and inhalants (UNDP, 1997). The trend is clear, substance abuse is increasing and girls and women are catching up fast with males. This is an indication that the female youth are getting more vulnerable hence the need to establish the reasons behind the rise in the drug intake among the young women and girls, the main thrust of this study. This concern is fuelled by changes in sex role attitudes and in the work and family role of women, which suggests that male and female drug and substance use patterns may become more similar. Role changes that may expose women to more drug and substance use occasion include increased labour force participation, an increase in the proportions of single or divorced adult women and later child bearing by young adult women. Women who ignore the social propositions against female intoxication are especially vulnerable to loss of control over their drug and substance use.

One social status believed to influence differential vulnerability to adverse consequences of alcohol and drug use is gender. Vulnerability based on gender differences is argued in terms of physical vulnerability, social control, labeling and internalized sex role norms. It is suggested that women are more vulnerable to adverse intrapsychic consequences. The expectation that alcohol and drug abuse will have more deleterious consequences among women than men is grounded on both biological differences and in social role expectations for men and women. From biological stand point, it is noted frequently that the lower ratio of water to total body weight in women causes them to metabolise alcohol and drugs differently from men. Even when body weight is controlled, women reach significantly higher blood alcohol concentration than men (Robbins 1989). Drugs such as marijuana that are deposited in body fat may be slower to clear in women than in men. Low clearance rate creates a potential for cumulative toxicity and adverse drug and alcohol interactions because of their relatively high use of prescription psychoactives. Thus make girls and women vulnerable to intoxication, dependence and associated problems, but the physical differences in dose effect relationships also could influence females to drink less and to take smaller drug doses. The expectations of more adverse psychological consequences for women than for men who abuse drugs or alcohol is based as much on men's and women's social roles as on biological differences, (Robbins 1989).

Feminine deviance is characterized by an internalization of distress. The greater the responsibility felt by females for care of relationships deters antisocial deviance by women. Alcohol and drug

abuse are believed to carry far more stigma for women than for men. When women fall out they are likely to fall and to take on a more damaging and more permanent stigma than men. This originates from the socialization experience of girls. Girls are socialized for eventual social family roles involving connection to and concern about children, husbands and other family members. This diverse and continuous nurturing role expectation makes female intoxication problematic. Woman's sobriety is more threatening than a man's because care of a field can be abandoned for a day, but care of a child cannot. This sex role argument is likely to be generalized to modern work roles. Even outside family women's roles and ideology are more relational, for example women's work in the labour force such as service workers, nurses, or teachers frequently extends the same home roles. Socialization for these roles encourages women to see morality and measure their self worth according to an ideal of responsive to and care for other (Robbins and Martin 1993).

The rapid spread of substance abuse can be attributed to the breakdown of indigenous society and to the introduction of foreign influences that have made a variety of substance available on large scale (National Agency for the Campaign against Drug Abuse, 2002). The survey demonstrated that substance abuse is widespread, affects the youth mostly but cuts across all social groups. Alcohol, tobacco, bhang and khat are the substances most often abused and the youth are also abusing imported illegal substances such as cocaine and mandrax. The survey further reveals that while substance abuse by the youth ranges from increasing use of illegal and 'hard drugs' to legal 'soft' drugs, the youth mostly abuse four substances in this order: alcohol, tobacco, bhang and inhalants. Substance abuse by the country's youth is turning out to be a major problem because they begin to consume substances in early adolescence.

Gender inequality can complicate and extend the time for women's recovery. Although the low position of women in many societies, and the extreme levels of female poverty worldwide increase women's vulnerability to disaster, women are playing a central role in disaster management in many cultures. They are an important force for change and need to be further strengthened as such. Without vulnerability assessment, communities will not know what predisposes them to vulnerability and how risks affect them. Without emergency preparedness and response mechanisms, an emergency can easily escalate into a risk. Vulnerability reduction, like development, empowers communities to take control of their destinies, and it must be integrated at every sector of a country at every level. (WHO, 1999)

Taking female youth in Makindu Town as the object of interest, this research seeks to identify some of the factors that make youth in Kenya vulnerable to drugs and substance abuse. The study is guided by the following research questions:-



- a) What is the extent of vulnerability to drug and substance abuse among female youth?
- b) What is the government and society doing about the problem of female youth's indulgence in drugs and substance abuse?

### ***Study objectives***

The goal of this study is to investigate the nature and magnitude of vulnerabilities that expose female youth to drug and substance abuse in Makindu town Kenya.

### ***Theoretical Framework.***

#### *Chaos theory*

The word chaos has been generally used to mean a state of confusion, lacking any order. According to Bower, (1988) chaos is the irregular, uncertain discontinuous aspect of change within the confines of a patterned whole. This means that there are those events we cannot predict in an organizational life and even in our desire to create order and control of the situation; events often seem one step ahead of us. Chaos theory describes the behavior of certain non linear dynamical systems that under specific conditions exhibit dynamics that are sensitive to initial conditions (popularly referred to as the butterfly effect.) as a result of this sensitivity, the behavior of chaotic and unpredictable results can and will occur in systems that are sensitive to their initial conditions.

The two main components of chaos theory are the ideas that systems – no matter how complex they may be – rely upon an underlying order, and that very simple or small systems and events can cause very complex behaviors or events. (<http://www.imho.com/grae/chaos/chaos.html>)

Bower (1988), further notes that as a qualitative study, chaos theory investigates a system by asking about the general characteristics of its exact future term behavior rather than seeking to arrive at numerical predications about its exact future state.

Disaster and emergencies epitomize on the unpredictability or non linearity of human events. There are many events that we can predict in the society but not disaster. Man cannot therefore predict when a disaster will occur, the number of fatalities or the amount of resources and personnel required to bring order to chaos. Factors to be considered in disaster safety cannot be accurately defined, quantified or even understood at anytime. This then leaves man with only the option of continuously improving the effectiveness of safety measures undertaken and having a

successful disaster response plan within his organization to effectively stop or respond to any eventuality.

It is imperative that the society prepares itself to tackle disasters. Since disasters that are related to drug and substance abuse such as car accidents affect those involved and not involved in drug and substance abuse. It is the responsibility of everyone in the society to act against drug and substance abuse because we could all be directly affected by the related disasters.

## **Literature Review**

### *Vulnerability of female youth to drug and substance related risks*

Illicit drug cultivation, processing, trafficking and abuse are on the rise in Africa. If the trend continues, Africa could be faced with a major crisis. Sub-Saharan Africa serves principally as a transit route between Asian suppliers and Western customers. African countries are being used as spring boards for international trafficking by criminal syndicates. The continent is also increasingly being used by drug cartels for production and consumption of illicit drugs as well as money laundering, (United Nations Organization for Drug Control, 2001). Overall, drug prevalence rates among youth in many countries are higher than for the general population.

During the past decade according to United Nations Organization for Drug Control (2001) patterns and trends in drug abuse among young people differed from region to region. In Africa, the limited data available indicate an increase in the abuse of drugs, especially cannabis, and the appearance of various synthetic drugs, as well as cocaine and heroin. Recreational use of drugs is found primarily among young people who are polydrug users (mixing or alternating a large range of substances) within recreational settings.

The stimulant properties of some of the drugs chosen for recreational use are exploited to allow the users to remain active for longer periods than would otherwise be possible. Nightclubs, discotheques and other social gathering places for youth have been at the centre of the widespread distribution and use of psychoactive substances. In that context, the drugs play a role as a social lubricant. At the same time, the recreational use of drugs is taking place in a cultural and social environment that has become more tolerant towards drugs, and in which young people are exposed to messages that give the impression that recreational use of drugs is safe,

acceptable or glamorous, and may even be beneficial in the pursuit of material success and the satisfaction of personal needs.

Amphetamine-type stimulants are abused more for instrumental use by people such as truck drivers, agricultural workers, sex workers and also students (mainly to keep awake when preparing for examinations). Recreational use of drugs has changed the traditional image of drug abuse as a part of the life of people living on the margin or underground, or excluded from society.

The abuse of drugs is increasingly also taking place among mainstream youth during their free time, usually at weekends and have become a part of the subculture of some young people. The trend signals a risk that the dangers of drug abuse are being increasingly ignored, and that drug abuse is coming to be seen as a normal activity, (United Nations Organization for Drug Control, 2002).

Heroin on the other hand has been a street drug at the Kenyan coast since the 1980s where its use has spread from a few large towns to many smaller settlements, including some rural villages. The increasingly easy availability of heroin is linked to the 1980s tourist boom when Italian investors set up businesses with local partners. The Swahili community was particularly affected because they were in the forefront of the tourist industry and came into direct contact with Europeans requesting heroin, (Beckerleg et al 2005).

According to an article printed from the UN Chronicle by The International Conference on Drug Abuse and Illicit Trafficking (1987), the reason why people turn to narcotics are as varied as the types of people who abuse them. Some of the apparent internal and external factors contributing to drug use are: ignorance of dangers of illegal drug use, and of the health consequences of abusing specific substances, feelings of alienation, changing social structures including breakdown of family unity and a sense of community and urbanization and unemployment (drug use may mitigate adjustment difficulties and loneliness resulting from migration to urban areas and loss of traditional values and support structures and lack of training and/or skills for employment).

When a young person starts using drugs, according to Neal (1998) and United Nations Organization for Drug Control (2001), this maybe due to individual factors, but also to social factors involving both the young person's local environment and society in general. These factors can, to varying degrees, be influenced through various measures. People with sensation seeking personalities run a particularly great risk of ending up in drug abuse, particularly because they are

attracted to environments where drugs are used. Other important individual factors are various psychological or social disturbances, unemployment, financial problems and a person's current state of mind. A person's attitude to alcohol, drugs and lifestyle issues may also be a contributory factor in substance abuse. Such attitudes can be influenced only to a limited extent, since they are often formed early in life. A good knowledge of the harmful effects of drugs and an awareness of the risks involved may make a person less inclined to try drugs. Thus, drug information and efforts to influence people's attitude to drugs are important tools when it comes to reminding people of the dangers of drugs reducing their curiosity about drugs. A person's susceptibility may vary quite considerably over time. Important contributory factors in a person's local environment such as peer influence, and the presence of a local drug culture, decide whether or not a young person will come into close contact with drug abuse and that he/she is presented with opportunity to try drugs (exposure to drug abuse).

Taboos against female drunkenness and recreational drug use have pervaded most societies throughout history and seem rooted in two focal concerns: female sex virtue and nurturing role obligations. According to United Nations Organization for Drug Control (2005), females who abuse drugs are more likely to be stigmatized by society than male drug abusers because their activities are considered to be doubly deviant. It is generally considered that drug abuse violates norms of behavior and many feel that drug abuse by female is even worse as it diverges from the traditional expectations of women as wives, mother, daughters and nurturers of families. Because of this stigma, females are more likely to conceal their drug abusing behavior, because it is often culturally unacceptable for women to take drugs. Those may try to hide it from others until they get very sick or need emergency care. Relationships form another area of vulnerability for female drug abusers. They often have male partners who also use drugs. Because of the unequal power balance in many of these relationships, females have greater difficulties abstaining from drug use, particularly if their male drug abusing partners continue and support drug use. The male partner may even discourage the female from seeking prevention and treatment services. These relationships are highly stressful, particularly for the female partner.

National Agency for the Campaign against Drug Abuse has been holding consultative meetings to develop a strategic plan that would include public awareness campaigns, intervention of special groups, counseling services and rehabilitation for the vulnerable, the youth and support services. These included institutional framework of drug abuse control, strategies of drug abuse treatment and in prevention education activities, (National Agency for the Campaign against Drug Abuse, 2007).

From the following newspaper article it is evident that the National Drug Policy is being enforced:

- From an article by Steve Mbogo sampled from 'The Business Daily' dated July 8, 2008, titled, *'Tough times for smokers as ban comes into force.'* He says that, *'Smokers will from today be buying cigarettes in packet, as tobacco companies comply with a new law meant to protect the public from exposure to cigarettes smoke. The law will end what has been a culture of buying cigarettes in sticks – except in up market outlets and supermarkets – instead of packets or boxes. The tobacco Control Act of 2007, which came into effect on October 2007, provided for a nine month implementation period which ended yesterday.'* This article has cited the Implementation of the Tobacco Control Act of 2007 which clearly indicate that the Kenyan government has put down measures to curb the abuse of drugs and substances in the country.

## **Methodology**

### *Research Design*

The study applied a case study design. This involved a case on the vulnerability of female youth to drugs and substance abuse in Makindu town. Research design was the program that guided the investigator as she collected analyzed and interpreted observations. It was the logical proof that allowed the researcher to draw inferences concerning causal relations among variables that had been investigated.

### *Site selection and description*

The study was carried out in Makindu town. Makindu town was selected purposively since no study of vulnerability to drugs had been carried out. The area was where the researcher worked and she wanted to better understand the female youth she worked with. The town was located 200km from Nairobi and 250km from Mombasa. It was along Mombasa-Nairobi highway. It had a population projection for 2008 of 11,160 people, 3906 being female youth. There were 1860 households with an average of 6 heads (Kibwezi District Development Plan 2008-2012, 2009). The poverty level stands at 34% contributing to 3.8% of the National Poverty level. The food poverty level is at 57.2%. The causes are attributed to circumstances such as unreliable, inadequate and erratic rainfall, lack of clean drinking water leading to increased cases of water borne diseases (typhoid, amoebic dysentery etc), reduced productivity, increased cost of medication, high rates of unemployment- both formal and informal leading to increased number of idlers and dependency, lack of credit facilities hence limiting investments, poor marketing system, unavailability and high prices of farm inputs, poor agricultural practices, sparse location of health facilities, absence of rural-micro industries, poor road network and lack of rural electrification to steer and bolster local industries such as the Jua Kali.( KDDP 2008-2012, 2009)

### *Sampling*

The sampling frame for this study was generated from the occurrence register at Makindu Town Police Post, Makindu Town Location Chief's Complaints Records, Central Register at the Probation Department (Makindu District), Criminal Records at the Law Courts and Non Governmental Organizations (NGOs) dealing with youth and drug related issues.

Snow ball sampling was used to select 29 female youth abusing drugs and substance, selected from the sampling frame obtained and 10 key informants dealing directly with female youth abusing drugs and substance.

The criteria for participants to be selected for the study will include the following:

- a) Female youth arrested in relation to drug related crimes whose records exists in the Makindu police post or the chief's complaints records.
- b) Female youth serving on probation or CSO for drug and substance abuse related crimes.
- c) Female youth living with partners who abuse drug and substance abuse, from records obtained of male youth at Makindu Police Post, Makindu Town Location Complaints register or the probation and Community Service Order Record.
- d) Key informants who deal with female youth abusing drugs and substance – The Probation Officers, The Police, The Provincial Administration, Youth Officers and relevant Non Governmental Organizations.
- e) The households around drug selling dens and bars
- f) Female youth in the streets.

The researcher faced the challenge where some of the female youth who had been referred to her refused to be interviewed.

### *Sources of data*

The study applied observing and interviewing as the principal data collection techniques. This was driven by the need to encourage greater interaction between the researchers and target respondents, eliciting holistic information and attitudes (Walliman, 2005). Five sources of data were identified. They included: documentation, archival records, interviews, direct observations and case studies. This study obtained secondary data from archival records and documentation. The archival records will include: service records such as those showing the number of clients served over a given period of time; and telephone listings. The documentation included: administrative documents-proposals, progress reports and other internal documents.

### **Methods and tools of data collection**

In this study the data collection methods included: participant observation the tool used was an observation checklist. The researcher spent an afternoon with the respondents observing their

activities. In the oral interview method, the tool to be used was a semi-structured questionnaire. It was not possible to interview more than twenty nine (29) respondents because of the time the researcher needed to spend with the respondents. Adequacy of information by the time the researcher interviewed the 29<sup>th</sup> informant there was no new information emerging. In other words the researcher had reached a saturation point (Strauss and Korbin, 1998). Ten key informants were interviewed. The researcher employed key informant guide, a tool used in social inquiry, gathering detailed information and opinion based on key informant's own knowledge of a particular issue.

Audio visual method was used employing a tape recorder during the interviews conducted. There were three focus group discussions of 7 members each where female youth whose spouses abused drugs and substance were interviewed. In one group the female youth did not abuse drugs and substance. These discussions were guided by a focus group discussion guide a qualitative tool whose purpose was to obtain in-depth information on concepts, perceptions and ideas of a group. It aimed to be more than a question-answer interaction. The idea was that group members discuss the topic among themselves, with guidance from the facilitator. There was an observation checklist for the direct observation method. In the documentation method there were minutes of meetings and other written reports of events. The archival record method included the following: service records such as those showing the number of clients served over a given period of time and telephone listings. Case study utilized the above mentioned methods to discuss specific cases which were identified as exceptional during data collection. By triangulating the methods and tools of data collection internal validity was ensured in the study.

#### *Data analysis*

This study employed both qualitative and quantitative data analysis. Qualitative data was analyzed using case description. In qualitative data analysis the data collected was sorted and categorized. In quantitative data, descriptive statistics such as percentages was used.

### **Presentation and Interpretation of Findings**

#### *Demographic Information*

This study interviewed 29 female youth of ages between 15 and 30 years. The substance abusers were found to be more between ages 25 to 30 years. This constituted 62.07% of all substance users interviewed. Those who were between ages 15 to 18 years only formed 3.45% and 19-24 years constituted 34.48% of the sample size. The mean age of substance abuser at Makindu town is at 26.

**Table 1: Age of the respondents**

Age	Frequency	Percent
15-18	1	3.45
19-24	10	34.48
25-30	18	62.07
<b>Total</b>	<b>29</b>	<b>100.00</b>

Since the issue of female youth drug and substance abuse was very sensitive in Makindu town, from the Table 1 it was deduced that female youth who were below 18 years did not want to be known as abusers. Some thought that their parents would be informed of their abuse. The fact that there was only one respondent does not mean that the numbers of abusers is small at that age set. The youth older than 25 years had developed a “don’t care” attitude and did not worry much about who would know that they were abusers.

#### *Initial drug and substance abuse age*

When these respondents were asked the age at which they started using the substance/s, their responses varied.

**Table 2: Age at first drug or substance abuse**

Age ( years)	No. of respondents	Percentage
Below 18	9	31
18 - 25	17	59
26 – 30	3	10
<b>Total</b>	<b>29</b>	<b>100</b>

From Table 2, it was seen that majority started abusing drug from 18 years. This formed 59% of all the respondents. As ages increased, the introduction to substance use also reduced. This was seen in the ages between 26 years and 30 years. It was however sad that 31% of those interviewed first used drugs or substance before 18<sup>th</sup> birthday. This called for parents to still morals in children before they reached adulthood as when that happened, they would not have control over what their children did.

#### *Occupation status*

Respondents were also asked to state what they did apart from using the substances. The collated data presented in Table 3 indicated that 10, (34.50%) of the respondents were unemployed. Another 8, (27.60%) were involved in small business. A total of 7, (24.10%) were



casual laborers. The high level of unemployment in Kenya was clearly manifested in this sample as none of them was advantaged to be in full employment. This left the question begging that 'Could it be the high poverty levels that had driven these respondents to substance intake or there are other reasons?'

**Table 3: Employment status of respondents**

<b>Employment status</b>	<b>Number of respondents</b>	<b>Percentage</b>
Unemployed	10	34.50
Business lady	8	27.60
Casual labourer	7	24.10
Farmer	1	3.45
Tailor	1	3.45
Commercial sex worker	1	3.45
Student	1	3.45
<b>Total</b>	<b>29</b>	<b>100.00</b>

#### *Understanding drug and substance*

Khat which was the most commonly abused had a niche in Makindu town where some respondents referred to those who didn't use it as fools. This was an indication that khat was enjoyed by those who used it. If this was the notion that all the female youth in Makindu held about khat, then the use was rising. This was because anyone who heard of such an assertion would definitely want to experiment to prove the statement wrong or right.

Alcohol was the second most abused substance, most respondents claimed to abuse beer from legal brewers but there was a heavy presence of chang'aa (locally brewed gin) dens. It was claimed that the chang'aa from Makindu supplied towns from Sultan Hamud to Mtito Andei. Bhang was the other drug abused by the female youth and was as cheap as Ksh.10. most female youth interviewed claimed that they did not smoke the whole stick they had to smoke half and put off for later use since the sensation derived was too much and they could not handle. Cigarettes were also abused together with other drugs and substance, apart from one respondent who only smoked cigarettes. The knowledge and understanding of the female youth about drug and substance abuse was present but mostly they did not consider taking of alcohol and chewing of khat as abuse.

#### *Drug and substance abuse in Makindu town*

All the respondents interviewed hadn't been involved in substance abuse and most of them still did. Only a few had stopped. Table 4 shows some of the substances abused by respondents and the level of abuse of the drug/substance as compared to other also listed. Khat was the most

abused then followed by alcohol. Bhang and cigarettes were not as much abused but it is important to note that it is illegal in Kenya for one to smoke bhang. A figure of 18% usage was therefore quite alarming. The addition that most of these respondents mentioned meant so much needed to be done if the situation was to be reversed. The social deterioration at the town threatened everyone's livelihood if not checked.

**Table 4: Drug and substance abuse**

<b>Drug/ substance</b>	<b>No of respondents using</b>	<b>Percentage</b>
Khat	10	33
Alcohol	9	32
Bhang	6	18
Cigarette	5	17
<b>Total</b>	<b>29</b>	<b>100</b>

*Vulnerabilities of the female youth in Makindu*

The substance abusers were most of the time in a vulnerable state as the conditions that surrounded them could not make it easier for them in terms of temptation. The respondents were asked to mention what they considered as vulnerabilities to the drug and substance abuse. The findings presented in Table 5 a total of 29 responses were received.

**Table 5: Vulnerabilities that face substance abusers at Makindu town**

<b>Leading causes of drug and substance abuse</b>	<b>Frequency</b>	<b>Percentage</b>
Peer pressure	7	24.14%
Unemployment	5	17.24%
Easy access to substance	4	13.79%
Poor social life and family background	2	6.89%
Experimenting	3	10.34%
Existence of clients who are better served under drug and substance influence	1	3.45%
Lack of concern from parents/guardians	2	6.90%
Availability of resources	1	3.45%
Witchcraft	1	3.45%
Lack of basic needs – food	1	3.45%
Lack of fear	1	3.45%
Law enforcers are also in practise	1	3.45%
<b>Total</b>	<b>29</b>	<b>100.00%</b>

Peer pressure was a great concern as it emerged as the leading vulnerability to the substance abusers. It received a total of 7, (24.14%) of all the responses received. This was then followed by unemployment that contributed to 5, (17.24%) of all the responses received. The fact that these substances could easily be accessed encouraged their consumption. One of the respondents lamented that it was cheaper buying bhang than buying khat. No wonder bhang consumption rates were surprisingly high. Other vulnerabilities mentioned included: poor social life, and family background, experimenting, existence of clients who were better served under substance influence, lack of basic needs hence the struggle to get some money, absence of fear – all ages were equally involved, lack of concern from parents/guardians, availability of resources, law enforcers were also in the practice and witchcraft.

*Extent of vulnerability of youth to drug and substance abuse*

In the interview from FGDs it was mentioned that the reason why some of the female youth abused drugs and substance was that they gave into pressure from their spouses. Mombasa road has fuelled the trafficking and uptake of drugs and substance in the visitors especially truck drivers were entertained by *high* girls at night and that vehicles from up Nairobi or down to Mombasa ferried drugs and substance.

There were other assertions that poverty, lack of employment and idling had also contributed to drugs and substance among female youth. It had not rained from the year 2008; the people were left with no income since agriculture was the main economic activity in Makindu. This meant that people were unemployed and therefore idle. To pass time and also to escape the reality that they did not have income they abused drugs and substance, it was argued. It was further argued that during the years when it had not rained the female used mostly abused alcohol and bhang. Alcohol was used as a social lubricant where it assisted the youth to make money through prostitution or otherwise.

Bhang was purported to be used by female youth who could not afford khat and needed to get high.

This was a clear indication that drug and substance use was on the rise in Makindu town. From this assertion it was argued that female youth would abuse drugs and substance whether they've got money or not. When they have money they abuse khat. When they do not have money they abuse alcohol and bhang. Female youth assisted each other by sharing whatever kind of drug and substance was available to them, this further reinforced use of drugs and substance. It was established that khat was an addictive substance and when one developed dependency she could do anything to have it, even begging hence losing self esteem. Further, it was argued that abuse of drugs and substance could lead to dependence. Dependence could make one experiment on other drugs and substance if and when the choice was not available. This

assertion implied that introduction of drug and substance into one's system lead to further use of drugs and substance.

It was established that those who were influenced into chewing khat had receive positive information about its use as the statement above. Female youth who abused khat initially had monies to spare and needed to budget for it. The researcher further questioned the reasoning ability of female youth who fell for that kind of statement because majority of those who reasoned that way had no assets. It was argued that some drugs could lead to crimes such as becoming a con-man since the abusers talked of non existent monies.

It was established that the vulnerability to drug and substance abuse was increasing in Makindu. It was evidenced from observation of the number of chang'aa and bhang dens in Manyatta village. They were many, such that one did not need to walk for long distances to access drugs or substance. One respondent also asserted that the number of female youth with whom she chewed khat had increased form three to six. She also asserted that the bhang dealer in Makindu was not only *Chauvery*, a man who was famous for selling bhang, but there were others who were selling the drug.

From their interviews the level of drug and substance abuse was high and most involved in drug and substance abuse were low income earners. Substance abuse creates a gap between the abusers and the community. The respondents who were abusers were asked about the strategies the society had put in place to curb drug and substance abuse among female youth. The results tabled in Table 6 indicated that the female youth felt that the community had isolated them. Some of them even thought that the community had adopted a "don't care" attitude towards and considered them outcasts. They believed they were hated and considered as prostitutes. As a result of this, most abusers did not pay any attention to correction comments from community members.

**Table 6: Societal strategies against drug and substance abuse in Makindu**

<b>Societal strategies against substance abuse</b>	<b>Frequency</b>	<b>Percentage</b>
Considered a prostitute	3	10.35%
Denied opportunity to be married	4	13.79%
Interacts well	2	6.90%
Not taken seriously	3	10.35%
Hated	6	20.68%
Isolated	11	37.93%
<b>Total</b>	<b>29</b>	<b>100.00%</b>

From Table 6 above it was clear that the community in Makindu did not tolerate drug and substance abuse. Those that abused had been highly isolated. This was a relatively good move but had no long term affect on abusers since they developed a defence mechanism towards the isolation. It was also clear that besides isolation of the drug and substance abusers the community had not done enough to ensure that it addressed the initial cause of the female youth to abuse drug and substance. The reaction here was more geared towards response as compared to mitigation.

#### *Denial of opportunity to be married*

It was established that the community played a role in ensuring that female youth ceased from abuse of drugs and substance. From one of respondent's assertion it was established that she would quit using drug and substance when she got a husband, this made it clear that the mechanism does not work against drug and substance abuse reduction. It was therefore logical to conclude that the community needed to devise other methods of responding to drug and substance abuse since the one's it had embraced were pushing the female to further drug and substance abuse. At the end of one of researcher's participant observation she realized that one of the respondents bought khat with all the money she had given her. This raised a lot of concern because she did not bother to spare the money for food or later use. The researcher realized that drug and substance abusers were short sighted in terms of their lives and lived for the day. This notion adopted was risky for a nation's development. This called for drastic measures to ensure that drug and substance abuse among female youth decreased.

#### **Conclusions**

The study established that female youth in Makindu town had knowledge of drugs and substance. Further, khat was identified as the most abused substance. It was sad to note the female youth did not consider chewing khat, abuse. Peer pressure was identified as the main vulnerability in Makindu town. This was fuelled by the different positive assertions that were made by drug and substance abusers about the drug and substance abused. There were assertions of how one got courageous and could confront those that had wronged her. It was also established that Mombasa road was contributing toward the rise of female drug and substance abuse. At the road the female youth abused drugs and substance while waiting for male company to entertain for prostitution or otherwise. The road also played a role of transporting drugs and substance with ease to Makindu town. The researcher also discovered that availability of resources such as money influenced female drug and substance abuse. It was argued that when women had extra

monies to spare engaged in drug and substance abuse. The community in Makindu should undergo capacity building to help it understand better drug and substance abuse. This would therefore, assist in devising modifying or devising new strategies that would enhance reduced drug and substance abuse among female youth.

Response measures included the establishment of a rehabilitation center where those youth who have developed dependency could be rehabilitated. The mitigation measures such as advocacy campaigns against drug and substance abuse. This is important in order to demystify the consequences of abuse to reduce the peer pressure. There was also the need to create employment through initiation and boosting of youth enterprise. There was also need to establish youth empowerment centers where youth could spend their leisure time constructively.

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## Mid-Day Meal Scheme and Growth of Primary Education: A Case Study of District Anantnag in Jammu and Kashmir

Yawar Hamid\* and Asmat Hamid\*\*

**Abstract:** *The study attempts to assess the impact of MDMS on attendance, enrolment, drop-out rates, of children in primary schools of district Anantnag in Jammu and Kashmir. To gather information regarding the impact of the scheme, 100 students, 50 parents, 20 teachers and 20 government officials were randomly interviewed through structured questionnaire schedule. In order to know the impact of the scheme data have been divided in two period's pre Mid-Day meals period (1999-00 to 2003-04) and post Mid-Day meals period (2005-06 to 2008-09) and growth rate of both periods has been calculated through Log-linear model. The results of the study shows that impact of MDMS is impressive in terms of enrolment, attendance and drop-out rates, but the scheme suffers from a number of bottlenecks in the course of its implementation.*

### Introduction

Education is the most important invention of mankind. It is more important than the invention of tools, machines, spacecrafts, weapons and medicines as these are the products of education. Man without education would still be living just like an animal. It is education which transformed man from a mere two-legged animal in to human being. It helps him to behave like a human being and prevents him from behaving like an animal. Hence the value of education is recognized in every society. Education is also regarded as the corner stone of economic growth and social development.

Despite the constitutional commitment, the goal to achieve universal primary education still remains a distant dream. According to 2001 census report, about 34.62 per cent of people remain illiterate in India. Furthermore, those who join primary schools, only one third continue beyond the primary level. The dropout rate is quite high in primary schools. The situation is worse in rural and backward areas. It is noted by many scholars that extreme poverty, malnutrition and under nutrition among the school going children are major causes of illiteracy. To overcome this problem and to increase the literacy rate, reduce drop-out rate, the government has introduced several schemes since independence for promoting education among school going children such as Integrated Child Development Scheme, Balwadi Nutritional Programme, NGO supported schools, Asharam Schools etc. But when these schemes failed to achieve the desired goal, the union Government launched new educational promotion scheme under the name of Mid-day Meals Scheme to universalize primary education.

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The genesis of mid-day meals goes back much earlier, to 1925, when the Corporation of Madras introduced the scheme for schoolchildren. In 1956, the Chief Minister of Madras, K. Kamraj, set up a 'Poor Feeding' programme. Five years later, all corporation and government schools in urban areas were covered in which American aid acted as a catalyst. And in 1982, the legendary chief minister of Tamil Nadu, M G Ramachandran, set up a state-wide scheme called the 'Nutritious Meal Programme'. By the mid 1980, three states, Gujarat, Kerala, Tamil Nadu and UT of Pondicherry had universalized a cooked Mid-day Meals Programme (MDMP) with their own resources for children studying at the primary stage. By 1990, the number increased to twelve as more states joined in this mission with their own resources namely, Goa, Madhya Pradesh, Maharashtra, Meghalaya, Mizoram, Nagaland, Sikkim, Tripura, U. P. In another three states, i.e. Karnataka, Orissa and W.B, the programme was implemented with state resources in combination with international assistance. Another two states namely A.P. and Rajasthan were implementing the programme entirely with international assistance. (Bhardwaj, R K 2003; Dev Mahendra, 2003; Dreze, j. and A, Goyal, 2003; Khera, Reetika 2002; Mathew, Minnie 2003; Parida, J.2010.)

In mid 1995, the government of India introduced a "centrally sponsored scheme" the national programme of nutritional support to primary education. Under this programme, cooked mid-day meals were to be introduced in all government and government aided primary schools within two years. The idea behind implementation of MDMP can be understood by three crucial perspectives: educational advancement, child nutrition, and social equity. Each of these objectives in turn has different aspects. Some are more ambitious than others. To illustrate, one basic contribution of mid-day meals to educational advancement is to boost school enrolment. Going beyond that, mid-day meals may be expected to enhance pupil attendance on a daily basis (and not just annual enrolment). School meals may also enhance learning achievements, in so far as 'classroom hunger' undermines the ability of pupils to concentrate and perhaps even affects their learning skills. Finally, a well-organized school meal can have intrinsic educational value, in addition to what it contributes to the routine learning process. For instance, school meals can be used as an opportunity to impart various good habits to children (such as washing one's hands before and after eating), and to educate them about the importance of clean water, good hygiene, a balanced diet, and related matters. Similarly, the nutritional objective of mid-day meals has several layers, ranging from the elimination of classroom hunger to the healthy growth of school children. In many respects, a mid- day meal programme is (potentially at least) a nutritionist's dream: the children come every day, on their own, and they eat whatever is given to them. This makes it possible not only to raise their intake of calories and proteins, but also to provide nutritional supplements such as iron and iodine, which need to be ingested in small doses over a period of time.

Mid-day meals also provide an excellent opportunity to implement nutrition programmes that require mass intervention, such as de-worming. Available experience indicates that these interventions are highly effective: for instance, a combination of mass de-worming with vitamin A and iron supplementation can significantly enhance children's nutrition for as little as Rs 15 per child per year (Tara 2003). The contribution of mid-day meals to social equity also has a variety of aspects. For instance, mid-day meals help to under-mine caste prejudices, by teaching children to sit together and share a common meal. They also foster gender equity, by reducing the gender gap in school participation, providing an important source of female employment in rural areas, and liberating working women from the burden of having to feed children at home during the day. To some extent, mid-day meals also reduce class inequalities. Indeed, in contemporary India, children enrolled in government schools come mainly from disadvantaged families. Thus, mid-day meals can be seen as a form of economic support to the poorer sections of society. More importantly perhaps, mid-day meals facilitate school participation among underprivileged children. This is likely to reduce future class inequalities, since lack of education is a major source of economic disadvantage and social marginalization. In short, despite their innocent garb, mid-day meals are a significant challenge to the prevailing inequalities of caste, class and gender.

Mid-day meals scheme was started in Jammu and Kashmir on 1<sup>st</sup> September 2004. Under the scheme cooked food is supplied to students at primary schools from standard I to V. As per the guidelines of the scheme, 100 grams of rice and 10 grams of dal per student per day are supplied to schools. The Government of India provides rice and Government of Jammu and Kashmir provides fund towards purchase of dal, vegetables, oil, condiments and transportation charges etc. @ of Rs0.64 per beneficiary per day. The government of India provides cooking cost @ Rs 1.00 per day per beneficiary and accordingly Rs 1.64 (Rs 0.64 from state government fund) is being provided per beneficiary per day.

### **Need , Scope and Research Methodology**

Anantnag is one of the districts of the Kashmir Valley situated in its south and south western direction at a distance of 52 Kms of Srinagar. Anantnag is spread over an area of 2092 Sq. Kms. with a population of 7.32 lacs and sex ratio is 922 females per 1000 males as per Census 2001. There are 406 villages, 158 Gram Panchayats and 7 blocks in the District and about 85% of population lives in rural areas. The population density of the district is 350 as per 2001 census. The literacy rate of the district is 44% as compared to 54% at state level. The male literacy rate is 56% while as for females it is 32%. The district is famous for countless springs and streams and is the gateway to the Kashmir Valley and is called the granary of the Kashmir Valley.

To analyse the impact of the scheme, the present study was conducted in the Anantnag district of Jammu and Kashmir. District Anantnag was deliberately selected because since the inception of the scheme no systematic study has been done to evaluate the impact of the programme on primary education in the district. Empirical data for the study was collected from 24 sample primary schools situated in the 7 different blocks of the district. Further to gather information regarding the impact of the scheme, 100 students, 50 parents, 20 teachers and 20 government officials were randomly interviewed through structured questionnaire schedule. Besides primary data on enrolment, attendance and dropout rates of school going children were collected from the school registers and inspection reports. In order to see the impact of the scheme data on enrolment, attendance and drop-outs was collected for both pre and post MDMS periods.

In order to calculate the average annual growth rate in Enrolment of Students, log-lin model has been used. The equation for log-lin model is as under

$$Y_t = y_0(1+r)^t$$

Where *r* is the compound rate of growth of *Y*. in order to make the equation linear we take natural logarithm on both sides of equation

$$\ln y_t = \ln y_0 + t \ln(1+r)$$

Now letting  $\beta_1 = \ln y_0$  and  $\beta_2 = \ln(1+r)$

$$\ln Y_t = \beta_1 + \beta_2 t + u_i$$

Where

$\ln y_t$  = logarithm of regress and or dependent variable

$\beta_1$  = The intercept.

$\beta_2$  = Coefficient of time.

$u_i$  = Disturbance term.

After getting value of  $\beta_2$ , ACGR has been calculated by the use of equation (1)

$$ACGR = (\text{anti log } \beta_2 - 1) \times 100 \dots\dots\dots (1)$$

**Objectives**

The major objectives of the study are

- I) To know the impact of Mid-day Meals scheme on primary education in terms of enrolment, attendance and drop-out rates.
- II) To know the operational and structural deficiencies of Mid-day Meals scheme.

**Results and Discussion**

The analysis of the data shown in Table 1 shows that average annual growth rate of enrolment in the Anantnag district has increased in the post Mid-Day meals period in comparison to pre Mid-Day meals period. During the pre Mid-Day meals period, the average annual growth rate of

enrolment was -10.58 per cent and in post Mid-Day meals period it is 0.24 per cent. Furthermore the growth rate of reserved category students also increased in the Post-Mid day meal period. This implies that there has been an increase in number of students enrolled in the post Mid-Day meals period. Over all, Table 1 shows that Mid-Day meals have a positive impact on the enrolment of students in all categories.

**Table 1: Average Annual Growth in Enrolment of Students in District Anantnag**

Area	Period	Reserved Categories	General categories	Total
<b>Breng Block</b>	1999-2000 To 2003-04	-8.90	-11.20	-10.05
	2005-06 To 2008-09	0.28	0.4	0.34
<b>Shangus Block</b>	1999-2000 To 2003-04	-9.9	-3.4	-6.65
	2005-06 To 2008-09	0.15	0.3	0.22
<b>Achabal Block</b>	1999-2000 To 2003-04	-10.4	-7.6	-9.0
	2005-06 To 2008-09	0.10	0.6	0.8
<b>Dachnipora Block</b>	1999-2000 To 2003-04	-11.2	-8.2	-9.7
	2005-06 To 2008-09	0.56	0.38	0.46
<b>Qazigund Block</b>	1999-2000 To 2003-04	-12.56	-8.6	-10.58
	2005-06 To 2008-09	0.29	0.19	0.24
<b>Khoveripora Block</b>	1999-2000 To 2003-04	-7.95	-5.78	-6.86

	2005-06 To 2008-09	0.54	0.38	0.46
<b>Shahabad Block</b>	1999-2000 To 2003-04	-11.95	-6.45	-9.2
	2005-06 To 2008-09	0.73	0.56	0.64
<b>Anantnag District</b>	1999-2000 To 2003-04	-6.16	-4.15	-5.15
	2005-06 To 2008-09	2.69	1.15	1.92

Note: \*Reserved categories include all lower cast categories (social caste, schedule tribe, other backward classes) and General categories\* includes other classes.

\*Figures based on field data collected from sample primary schools.

Mere enrolment is not sufficient for learning. For better quality of learning regular attendance in the class room is very necessary. To increase the rate of attendance of the students Mid-Day meals programme was started in India. Table 2 provides percentage of average attendance rate of students in both Pre- and Post Mid day meals period.

**Table No.2: Attendance Rate of Students in Different Periods\* (%)**

Area	Period	Attendance
<b>Breng Block</b>	1999-2000 To 2003-04	65%
	2005-06 To 2008-09	82%
<b>Shangus Block</b>	1999-2000 To 2003-04	72%
	2005-06 To 2008-09	90%
<b>Achabal Block</b>	1999-2000 To 2003-04	62%
	2005-06 To 2008-09	80%
<b>Dachnipora Block</b>	1999-2000 To 2003-04	63%
	2005-06 To 2008-09	74%
<b>Qazigund</b>	1999-2000 To 2003-04	60%

<b>Block</b>	2005-06 To 2008-09	75%
<b>Khoveripora Block</b>	1999-2000 To 2003-04	68%
	2005-06 To 2008-09	89%
<b>Shahabad Block</b>	1999-2000 To 2003-04	63%
	2005-06 To 2008-09	87%
<b>Anantnag district</b>	1999-2000 To 2003-04	64.71%
	2005-06 To 2008-09	82.42%

\*Period 1999-2000 to 2003-04 refers to pre MDMs and 2005-06 to 2008-09 refers to post MDMs period

\*Figures based on field data collected from sample primary schools.

Table No.2 reveals a rising trend of attendance during the post-Mid day meals period. The average attendance rate has gone up from 64.71 % in pre Mid-Day meals period to 82.42% in the post Mid-Day meals period. It clearly indicates that the percentage of average attendance has improved over the study period. To know the reasons for the increasing attendance rate of students in post Mid-Day meals period, the opinion of teachers, parents and students were registered. As per the opinions of the respondents, the Mid-Day meal scheme is one of the reasons for increasing attendance rate of students. But the other vital reasons were: (i) increasing awareness of education among the parents (ii) increasing interests of the parents to send their children to schools, and (iii) the impact of other facilities and incentives like free books, dress material etc.

Another variable used in our study was drop-out rate. The school lunch programme was primarily introduced to prevent drop-out from the schools. Average drop-out rate of students in the district is given in Table 3, which reveals that average drop-out rate has declined in the post Mid-Day Meals period. The average drop-out rate in pre Mid-day meals period was 25.15 % which has reduced to 14.22 % in post Mid-Day meals period. This implies that the average drop-out rate in the district has declined by 10.93 per cent indicating positive impact of lunch programme.

**Table 3: Average Drop-out Rate of Students in Different Periods\* (%)**

<b>Area</b>	<b>Period</b>	<b>Drop-outs (%)</b>
<b>Breng Block</b>	<b>1999-2000 To 2003-04</b>	<b>27.11%</b>
	<b>2005-06 To 2008-09</b>	<b>13.12%</b>
<b>Shangus Block</b>	<b>1999-2000 To 2003-04</b>	<b>22.54%</b>
	<b>2005-06 To 2008-09</b>	<b>10.3%</b>
<b>Achabal Block</b>	<b>1999-2000 To 2003-04</b>	<b>25.11%</b>
	<b>2005-06 To 2008-09</b>	<b>16.22%</b>

<b>Dachnipora Block</b>	<b>1999-2000 To 2003-04</b>	<b>26.17%</b>
	<b>2005-06 To 2008-09</b>	<b>14.23%</b>
<b>Qazigund Block</b>	<b>1999-2000 To 2003-04</b>	<b>30.34%</b>
	<b>2005-06 To 2008-09</b>	<b>19%</b>
<b>Khoveripora Block</b>	<b>1999-2000 To 2003-04</b>	<b>26.15%</b>
	<b>2005-06 To 2008-09</b>	<b>12.13%</b>
<b>Shahabad Block</b>	<b>1999-2000 To 2003-04</b>	<b>18.53%</b>
	<b>2005-06 To 2008-09</b>	<b>14.56%</b>
<b>Anantnag district</b>	<b>1999-2000 To 2003-04</b>	<b>25.15%</b>
	<b>2005-06 To 2008-09</b>	<b>14.22%</b>

\*Period 1999-2000 to 2003-04 refers to pre MDMs and 2005-06 to 2008-09 refers to post MDMs period

\*Figures based on field data collected from sample primary schools.

Though our study has found that MDMs has produced positive results, the operation of the scheme is not free from defects. This study found a number of socio-economic, cultural, financial and administrative problems influencing the operation of the scheme. In the study area it was found that general caste (general categories) students were not taking Mid-day meals with reserved caste (SC, ST, OBC) students on account of their social status and prestige. This was also true in case of students belonging to higher income group parents. There were often complaints by children and parents of higher income or caste that mid-day meals were prepared and served by cooks and helpers with dirty hands and clothes belonging to lower income class or lower castes.

The quality of food material supplied for school lunch programme is found very poor. Rice supplied by FCI godown was found producing bad smell. Dal and other condiments supplied by the agents were not fit for human consumption. Not only this but also the agents charged very high prices because they are not paid for the same on due time.

The scheme also suffers from managerial and administrative problems. There is no separate staff to look after the operation of the Mid-Day meal programme. At the school level, it is Headmaster/Headmistress or his/her representatives who are mostly involved in the management and operation of the noon-meals. The teacher also maintains daily record, receipts and expenditure under the programme. All these affect the study hour, the teachers ability in engaging classes. Overall it makes adverse impact on study atmosphere. At the upper level there is poor coordination and cooperation among the officials with regard to operation of the scheme.

The scheme also suffers from financial problem. There is no separate budgetary provision for the scheme. Financial allocation for the operation of the scheme is found not only inadequate but

also irregular. Due to inadequate provision of money for purchase of vegetables, condiments etc, quality of meals served to the students are very substandard in all the schools.

### **Conclusion**

Education moulds consciousness and character of a person. Realizing the importance of education, both the central and state governments, since independence have taken many measures to universalize primary education. Among the various measures undertaken in the recent past, the National Programme of Nutritional Support to primary education or popularly known as Mid-Day Meals scheme is a landmark programme in the direction of spreading primary education. The main focus of the MDMs is to increase enrolment, retention and simultaneously, take care of the nutritional health of primary level school going children. To know the impact of the programme this study was carried out in Anantnag district of Jammu and Kashmir.

The study found that the MDMs have produced a positive impact in case of attendance and drop –out rate in both reserved and general categories. It needs to be mentioned that the MDMs is not sole reason responsible for spreading of primary education. Increasing consciousness on the part of the guardians, implementation of other educational promotion schemes like Sarva Shiksha Abiyan etc., could be another reason responsible for increasing the rate of enrolment and decreasing the drop-out rates.

Though the impact of MDMs is impressive in terms of enrolment, attendance and drop-out rates, the scheme suffers from a number of bottlenecks in the course of its implementation. The quality of food supplied for the noon -meals programme is found very poor. Financial allocation for the operation of this scheme is inadequate and irregular, supervision and monitoring of programme is not regular. The study hours of the schools are getting affected due to direct involvement of teachers in the management and operation of the noon meals.

At the end, we may say that Mid-Day meals programme is a massive social welfare programme aiming at attracting children in to the educational main stream and also providing them with all the much needed supplementary nutrition to make them healthy and worthy citizens of the country.

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## Impacts of Cultural Differences on Work-related Values among Employees in Ibadan, Nigeria

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**Abstract:** *The thrust of this study is to investigate the impacts of cultural differences on the work-related values of employees in Nigeria using Declux Foods Plc, a multi-cultural confectionary Company located in Ibadan, Oyo State, Nigeria as a case study. Data for the study were generated through a multi-stage sampling technique with the use of questionnaires administered to one hundred and five (105) respondents selected from the study population. The work-related values (held in this study as dependent variables) were identified in relevant literature and were tested on a Likert's points of four (4) scale type ranging from strongly agree (4) to strongly disagree (1). Chi-square analysis was used to test the study hypotheses and the results were discussed under the various headings as appropriate. Findings from the study show that culture significantly affects reasons why people engage in work activities, the needs they seek to satisfy through their work, and motivation for work. Surprisingly, this study reveals that although employees are different in cultural orientations but the factor motivates them to put in their best at work is almost the same.*

### Introduction

Over the years, extensively large volumes of research have been devoted to the study of culture in relation to work values. Meanwhile, a general agreement recur in relevant literature that culture has attracted relatively more scholarship attention than other areas of study and life domains such as family, community, religion, and so forth can be explained by the key roles that culture play in both organization and social life (Smith et al, 1999). Besides, the multicultural composition of the Nigeria's population coupled with social and ethnic variations within the country's work places and the country at large (Otite 1987), has led to the concept of culture becoming more and more important and been rigorously researched during the past two decades (Erwee, 1988; Smith et al, 1999).

Seeing Nigeria against the background of a country that is striving towards (i) becoming a global competitor, (ii) attracting foreign investors' interest, (iii) rebuilding its rotten image in the international community as well as (iv) ensuring peaceful co-existence among its various ethnic groups at the work places (and social life), then the role of various cultures in shaping those behaviour which can enhance organizational effectiveness have to be analyzed and studied continuously. For instance, Schein (1992) argues that peak performance, harmonious workplace, effective integration of individuals' goal into the organizational goals and the desired changes in the society cannot be achieved without first considering culture as a primary source of resistance to changes and as a determinant of individual and group behaviour.

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Schein (1992) perceived culture as a phenomenon that is undetachable from the individual and that the process of forming, developing and changing a culture is much clearer when brought down to the level of the organization. Suffice this assertion to conclude therefore that 'if we want to understand the complex aspect of organizational life and how effectiveness could better be attained, we should move away from the superficial definitions and focus on how cultural differences among employees translate to differences in work values and organizational behaviour of the general workforce.

Apart from the above highlighted research analysis, many studies have treated work-values and work motivations as expressions of more general life values, and have made efforts to interpret the differences in terms of broader cultural patterns, reflecting the historical development of the particular region or groups and the adaptation of their environments as the primary determinants of what motivate employees or what an individual seeks in his job daily (Roe and Ester, 1999).

Therefore, the thrust of this study predominantly investigates the correlation between the culture of employees and work related values, with special attention to the Nigerian work organizations. However, it is expedient to note that work-related values and various motivational items are the behavioural variables that were subjected to serious empirical scrutiny in this study.

### **Statement of the Problem**

There is no doubt that central to the growth, viability and survival of any organization, be it public or private, is the effective utilization and management of the organization's human resources who are usually from different ethnic or cultural background and/or who were socialized into entirely different cultures. Sequel to these differences which usually manifest in terms of language, dress, orientations, and so on, managers in today's multi-cultural business community frequently encounter cultural differences which can interfere with the success and survival of their organizations (Erwee, 1988). In their own words, Adewole and Metiboba (2009) view the job of managers to motivate employee as a difficult and complex task because of some factors such as; the complexity of human needs and differences in employees' culture which can serve as a major issue in shaping work values of individuals.

Unfortunately, despite the enormous research into the relationship between culture and work values, today's managers still fail to harness effectively, the rich benefits of multicultural diversity of their workforce to the good of the organizations they serve.

Given the inherent differences in multicultural work places, leaders in the present day workforce have to direct organizations through difficult times of having to deal with the complex issue of

cultural diversity. It could however be argued that understanding the richness of this diversity and being able to apply its knowledge to the economic and social benefits of the organizations they serve has become one of the most difficult challenges for both researchers and human resource managers in Nigeria.

### **Objectives of the Study**

In specific outline, the objectives of the study are to;

- i. examine the relationship between employees' culture and work-related values,
- ii. determine whether employees' culture affects their orientation towards work itself,
- iii. investigate the correlation between employees' cultural background and their motivation for work,

### **Research Hypotheses**

Deriving from the research objectives and statement of the research problem, the following hypotheses were formulated and were tested through the respondents' opinions obtained from the research instrument;

*Hypothesis 1:* there will be no significant relationship between employees' cultural background and work values

*Hypothesis 2:* the culture of employees would not significantly influence what motivate them to work.

*Hypothesis 3:* there is no significant relationship between employees' culture and their orientation toward work itself.

### **What is Culture?**

Culture is a very complex social construct. This complexity is evident from the approaches that various authors follow to describe the construct 'culture'. Hodgetts et al. (1997) argues that there are many ways of examining cultural differences. The authors concluded that although leaders and researchers have been found struggling with the concept of culture but the concept is hard to define, hard to analyze, hard to measure and hard to manage. To further justify the complex nature of culture, Hofstede (1980) maintained that no single definition is likely to do justice to its complexity.

As broad and complex as the concept of culture, there are many definitions for culture as there are many theories on it. However, a general tread running through all these descriptions is that "culture refers to shared concept of life and that it guides the behaviour of individual and groups through strongly held beliefs and values which are transferable to generations after".

Smith et al. (1999) were of the view that culture is unique to each society or group of people and therefore it could be regarded as the collective personality of the group. Consistent with this view, Hofstede (1980) stated authoritatively that culture constitute to a human collectivity what personality is to an individual. Similar to the general definition of personality as “the interactive aggregate of personal characteristics that influence an individual’s response to its environment”, Hofstede viewed culture as the interactive aggregate of common characteristics that influence a human (collective) group’s response to its environment. Thus, culture plays significant part in determining the identity of a human group.

After naming several examples of cultural differences to explain his analogy, Van der Walt (1997) gave the following conclusions about culture;

- i. Culture gives identity: there is no aspect of human life that does not fall under the potential influence of culture. Thus, all human behaviour within organization and in social life can be explained and influenced by culture.
- ii. One’s own culture is normal for oneself: One is normally not aware of his/her own culture or of the fact that it might be unfamiliar or strange to others. This has been linked to anti-social behaviour called ethnocentrism.
- iii. One of the best ways to come to grip with one’s own culture is to seriously study and understand other cultures through cross-cultural education or informal learning. Van der Walt believed that one can not separate self understanding from understanding others. To reach the one, one has to start with the other and vice versa.

Schein (1992) presented a definition for culture which could be regarded as representative of most other points of view on culture. He defined culture as;

*“a pattern of shared basic assumptions that the group learned as it solved problems of external adaptation and internal integration, that has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way to perceive, think, and feel in relation to those problems”*

The general conclusion that could be drawn from the various definitions of culture that have been reviewed in this section which also forms the operational definition of culture as far as this study is concerned is that culture represents the whole complex of ‘things’ acquired, shared and/or held in common by members of a group who also transmits same to generations after it.

### **The Concept of Values**

Discourse on the concept of values tends to reveal contradictions. Notwithstanding, researchers in general agreed that values could be regarded as the central theme in the study of human behaviour, as well as the foundation on which the individual personality and outlook in life are

based. In this regard, Rokeach (1973) stated that the concept of values is the core concept in the study of all social sciences.

According to Rokeach, values are the most important dependent variable in the study of culture, society and personality, and at the same time, the most significant independent variable in the study of social attitudes and behaviour. Theron (1992) argues that it is possible to translate differences between cultures, social classes, work orientations, etc. into question concerning differences in the individual's underlying values and value system. The author also underlined the fact that managers should have a thorough understanding of the important role of values in human functioning and behaviour.

A generally acceptable definition of values is that of Rokeach (1973) which states that "value is an enduring belief that a specific mode of conduct or end-state of existence is personally or socially preferable to an opposite or converse mode or end-state of existence". This definition implies therefore that values serve as criteria upon which evaluations are of good or bad, like or dislike are made.

Review of various Studies in behavioural sciences has it that values are generally formed during the childhood years through the influences of a person's family. According to Marrow (1983) and Cherrington (1980) the same applied to work values. In these authors' views, a worker learnt to prefer certain intrinsic or extrinsic content of his/her job over and above others even right from the early age or early years of his career. The worker thus makes major career decisions based on this acquired prejudice about the job motivation.

### **Conceptualizing Work Values**

As in the case with culture and values, the literature is replete with various views on the concept of work values. The term "work values" is presented by different authors and researchers from different points of views. However, it is evident from the numerous definitions that the idea of an attitude towards or orientation with regard to work constitutes the central theme of most of the interpretations. For instance, one of the most significant facts that come to the fore from the theories of work and work motivation is that workers differ radically with regards to the reasons they have for working, factors that motivate them most in their work and the needs they want to satisfy through work. Biesheuvel (1984) supported this view and argued that it is not everyone who looks for satisfaction of higher level personality need through work they do and it is in fact, an intellectualist fallacy and mirage to assume that everyone seeks opportunity for responsibility, independence and creativity in his job. This has lent credence to the fact that what serves as a motivator to one employee may not motivate others to work, or that what a worker seeks to

satisfy through his job may be sharply different from what others seek to satisfy through the same job, even within the same work environment.

Like basic values, work values are beliefs pertaining to desirable end-states (e.g. high pay) or behaviour (e.g. working with people). The different work goals are ordered by their importance as guiding principles for evaluating work outcomes and settings, and for choosing among different work alternatives. Because work values refer only to goals in the work setting, they are more specific than basic individual values. But they refer to what a person wants out of work in general rather than to the narrowly defined outcomes. Work values represent cognitive expressions of the various needs or goals that are addressed through one's work and working, including monetary security, social interaction, intellectual stimulation, status, esteem and self-actualization needs (Ros et al., 1999; Super, 1995; Zytowski, 1970).

Super (1995) viewed work values as the various motivators that drive the individual to work. In Super's word, work values are regarded as values extrinsic to as well as intrinsic in work satisfaction. This may be seen as the by-product or the outcomes of work as well as those things which men and women seek in their work activity. Aweda (1987) does not regard all workers as being alike. He argues that workers come in assorted shapes, sizes, experiences, attitudes and ambitions. Some work for a living while for some working is a living. To some workers, work is regarded as the central goal in life, whereas others think about work as a way of providing for the daily necessities and then regarding time away from work as the joy in life.

Steers and Rhodes (1979) indicate that the belief by individual that being involved in work related activities is an important aspect of life (almost irrespective of what the nature of the job is) forms a major pressure to attend to work. In a related opinion, Van Pletzen (1986) believes that every individual holds certain evaluative disposition or inclination regarding work in general. In Pletzen's words, work values consist of a strong affective component and are evaluative in nature, i.e. the question of whether work is good or bad.

To broaden our horizon on the concept of work values, a few definitions of the concept were considered below;

- Work values are an index of a person's attitudes towards work in general, rather than his/her feelings about a specific job" (Wollack et al, 1971).
- Work values refer to the usefulness, or general worth that a person assigns to some behaviour or conceptions of work (e.g. physical efforts) and non-work activities (e.g. leisure) (Wayne, 1989).

- A set of concepts which mediate between a person's affective orientation and classes of external objects offering similar satisfaction (Zytowski, 1970).

Work values, in summary, are indicatives of an individual's inner attitudes or ways of thinking towards work and other conditions that do not merely apply to his own position or certain tasks but rather, to work in general. This summary therefore forms the operational definition of work values for the purpose of this study.

### **Development of Work Values**

As mentioned earlier, values are generally formed during the childhood years through the influence of a person's family. Cherrington (1980) argued that same applied to work values since no one is born with values, they are therefore learnt. Research results of Cherrington shows that the parental home (socialization) has a significant influence on the establishment and development of the work values of the individual.

Van Pletzen (1986) hypothesized that work values represent a personality variable and that it is formed together with the personality of the individual. Work values are not inherent characteristic of any individual, they are learnt. Pletzen highlighted eight (8) management principles that contribute considerably to a positive development and changes in work values in an organization;

- i. Commitment to excellence and positive work values should be supported by the organizational climate.
- ii. The organization's expectations and required quality of work should be communicated clearly to employees.
- iii. The values and exaltedness of work and service delivery should be explained to employees.
- iv. Through effective delegation, responsibility of employees must be ensured.
- v. Through individual choice and participation, personal involvement of employees must be promoted.
- vi. The organization should make sure of performance assessment when providing feedback with regards to work achievements.
- vii. Effective work performance should be adequately rewarded.
- viii. Employees should be continuously supported to ensure personal growth and development.

Obviously, it is clear from these aforementioned principles that apart from being a personality variable that are formed or learnt from childhood years through the process of socialization, the



organizational and direct work environment could have significant influence in forming and maintaining work values.

### **Appraisal of Literature**

Attempt has been made in this study to review several scholarship orientations on the concept of culture as a major social construct that determine people's behaviour within the workplace and in social life. Culture was variously defined by different authors from different view points. However, one common feature that runs through all the definitions is that culture represents a system of shared meaning which dictates what people do, how they do it and what they regard as important to them. Thus bringing down to the organizational level, through culture, values in respect of life and work are organized into mental programme that determine how employees behave within the workplace and in group life.

Also, relevant literature reviewed in the course of this study revealed that human beings do not like work very much and will avoid it as far as possible. Thus, it becomes a question to be answered via a thorough empirical study the fact that though human beings hate work but still engage daily in work activities. Therefore, the simple fact that answers this question is that the values that human beings attached to work and generally the motives for which they engaged in work activities varied greatly from person to person and across cultures.

On the other hand, the concept "work values" is presented by different authors and researchers from different points of views. However, it is evident from the numerous definitions that the idea of an attitude towards or orientation with regard to work constitutes the central theme of most of the interpretations. This has lent credence to the fact that what serves as a motivator to one employee may not motivate others to work, or that what a worker seeks to satisfy through his job may be sharply different from what others seek to satisfy through the same job, even within the same work environment.

### **Theoretical Framework**

The theoretical paradigm that explained work values from a broad cultural context is the theory of basic values. First, it specifies ten (10) motivationally distinct types of values, including power, achievement, hedonism, and stimulation. Others are self-direction, universalism, benevolence, tradition, conformity and security. These motivational values were postulated to be recognized by members of most societies and to encompass the different types of values that guide them.

This approach is sometimes sub-divided into two namely; private values theory and group values theory. As the name implies, the basic private values theory holds that the life of an individual and

those factors (values) which motivates him/her to act or fails to act depend solely on personal values which guides the individual's behaviour. The theoretical tradition in the former thus believes that what an individual seeks to satisfy in his/her job is personal, desirable and as well serve as the guiding principles to the employee's personal life, career decisions and actions (Super, 1973). On the other hand, the group values theory views work values of an individual as culturally originated. The theory postulates that what guides the behaviour of an individual employee both at the workplace and in social life is the culture of the group he/she belongs.

Indeed, following the theoretical perspective in the latter, we conclude in this paper that in order to understand the meaning that one attributes to work, the personal structure of values and/or the processes linking these various components (the 10 types of values mentioned above), it is necessary to study the cultural and social context in which the individual lives and works. Consistent with our conclusion in this paper, Schwartz (1999) argued that exploring the meaning of work within a cultural context is important as the cultural context may shape and modify values.

### **Methodology**

This study adopted a survey research design of a descriptive type to investigate the relationship between cultural differences and work-related values of employees in a multi-cultured work organization. Data for the study were generated mainly through multi-stage sampling technique by the use of structured and unstructured questionnaire administered to a sample of 105 respondents randomly selected from Decxul Foods Plc, Ibadan, Oyo State, Nigeria. Out of a total of 105 questionnaires distributed to subjects on the issue under study, 102 turned in their completed questionnaires. This forms 97 per cent of the total and this is considered statistically significant enough to continue with the study. Respondents were selected from all the cultural groups represented at the selected work organization.

The questionnaire utilized in this study was divided basically into 2 sections. Section A of the questionnaire titled **RESPONDENTS' BIO-DATA** elicited information on the socio-demographic background of the respondents such as age, sex, level of education, ethnic affiliation, marital status, religion, years of experience, etc. Section B of the self-administered questionnaire was titled **CULTURE AND WORK VALUES SCALE (CWVS)**. This comprises both structured and unstructured questions meant to obtain information on respondents' culture and how it relates to or influences their orientation about work, premium placed on work, orientation about motivational/reward systems, relation with others at work, and so forth.

Respondents were asked to answer questions related basically to various work values identified in relevant literature, and same were hold in this study as independent variables subjected to empirical scrutiny. The questionnaires were administered at the premises of the

selected work organization (Decxul Foods Plc) by the researcher after due approval from the Human Resource Manager of the company.

### Quality Control

Test and pre-test of the research instrument was done to ensure reliability and validity of the research tool. Validity tests and pre-tests of the research instrument were done at the Department of Sociology, University of Ilorin, Nigeria. A reliability co-efficient of 0.85 was obtained with the use of Pearson Product Moment Correlation Co-efficient.

### Results and Findings

**Table 1: Distribution of the Respondents According to their Socio-Economic Characteristics**

Variable/ Group	Frequency	Percentage (%)
<b>Sex</b>		
Male	86	84.3
Female	16	15.7
Total	102	100
<b>Age</b>		
20 – 25	5	4.9
26 – 30	19	18.6
31 – 35	48	47.1
36- 40	22	21.6
41 & above	8	7.8
Total	102	100
<b>Educational Status</b>		
Primary	12	11.8
Secondary	27	26.5
NCE/ND	48	47.0
HND/BSc	11	10.8
Postgraduate	4	3.9
Total	102	100
<b>Marital Status</b>		
Single	16	15.6
Married	79	77.5
Divorced	7	6.9
Total	102	100

<b>Ethnic Affiliation</b>		
Hausa	22	21.5
Yoruba	46	45.1
Igbo	27	26.5
Others	7	6.9
Total	102	100
<b>Religion Affiliation</b>		
Islam	39	38.2
Christianity	51	50.0
Others	12	11.8
Total	102	100
<b>Job Position</b>		
Manager	4	3.9
Supervisor	9	8.8
Foreman	11	10.8
Machine Operator	48	47.1
Others	30	29.4
Total	102	100

Source: Researcher's survey, 2011

Table 1 above shows the socio-economic backgrounds of the respondents. Majority of the respondents were male while the female constituted 15.7% of the participants. Also, a cursory look at the table shows that 47.1% of the respondents fall within the ages of 31 – 35 years while 4.9, 18.6 and 21.6% were within 20 - 25, 26 – 30 and 36 – 40 years respectively. The marital status shows that majority of the respondents 77.5% are married, 15.6% are singles while only 1 of the respondents is divorced. In terms of the cultural affiliation of the respondents, 45.1% are Yoruba, 21.5 are Hausa, Igbo constituted 26.5% while 7.9% belong to other ethnic backgrounds. Further analysis of Table 1 above reveals that half of the respondents are Christians, 38.2% are Muslims while 11.8 practices other religions. Also, the job position of the respondents shows that Machine operators formed 47.1% of the total, 3.9% are Managers, Supervisors constituted 8.8% of the respondents, 10.8 are Foremen while 29.4% belong to other job positions.

Three hypotheses were generated and tested in this study based on the respondents' opinion obtained from the research instrument. Chi-square analysis was used to test the hypotheses and the summary of the analyses are presented in table 2, 3 and 4 below:

**Table 2: Chi-square Analysis of the Relationship Between Employees' Cultural Background and Work-related Values**

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	45.590 <sup>a</sup>	9	.000
Likelihood Ratio	48.107	9	.000
Linear-by-Linear Association	24.552	1	.000
N of Valid Cases	102		

$$X^2_c = 45.590, X^2_t = 16.919, df = 9, \text{Sig. level} = 0.05$$

**Hypothesis 1:** *states that there is no significant relationship between employees' cultural background and work values*

Table 2 above shows that the chi-square calculated value  $X^2_c$  (45.590) is greater than the chi-square table value  $X^2_t$  (16.919) at the 0.05 significant level. This shows that the result was significant. Therefore, the null hypothesis is rejected and the alternative hypothesis is accepted. Thus, it is confirmed in this study that there is significant relationship between employees' cultural background and work values.

**Hypothesis 2:** *The culture of employees would not significantly influence what motivate them to work.*

From Table 3 below it could be observed that the relationship between employees' cultural background and factors that motivate them to work was not significant. Result of the analysis shows that the chi-square calculated value  $X^2_c$  (5.514) is less than the chi-square table value  $X^2_t$  (16.919) at the 0.05 significant level. The alternative hypothesis is therefore rejected and the null hypothesis is accepted.

**Table 3: Chi-square Analysis of the Relationship between Employees' Cultural Background and Factors that Motivate them to Work**

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	5.514 <sup>a</sup>	9	.787
Likelihood Ratio	5.364	9	.801
Linear-by-Linear Association	1.024	1	.312
N of Valid Cases	102		

$$X^2_C = 5.514, X^2_t = 16.919, df = 9, \text{Sig. level} = 0.05$$

**Hypothesis 3:** *The there will be no significant relationship between employees' culture and their orientation toward work itself.*

**Table 4: Chi-square Analysis of the Relationship between Employees' Cultural Background and their Orientations about Work**

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	11.175 <sup>a</sup>	9	.264
Likelihood Ratio	12.429	9	.190
Linear-by-Linear Association	.190	1	.663
N of Valid Cases	102		

$$X^2_C = 11.175, X^2_t = 16.919, df = 9, \text{Sig. level} = 0.05$$

Table 4 above revealed that the chi-square calculated value  $X^2_C$  (11.175) is less than the chi-square table value  $X^2_t$  (16.919), the analysis showed that the result was not significant. The null hypothesis is thus accepted and the alternative hypothesis is rejected. Therefore, this study confirmed that there is no significant relationship between the cultural background of the Employees and their orientation towards work.

### Discussion of Findings

This study has amply demonstrated through empirical investigation, the relationship between employees' cultural background and their work-related values. Result obtained from hypothesis one of this study was significant and thus confirmed that cultural background of employees determines their work-related values. While some employees' work value was to accept responsibilities, others seek opportunities as they perform their jobs daily. This finding is consistent with Van Pletzen (1986) assertion that every individual holds certain evaluative disposition or inclination regarding work in general. In the same manner, Aweda (1987) does not regard all workers as being alike. He argues that workers come in assorted shapes, sizes, experiences, attitudes and ambitions.

Another major finding from this study is that although employees are different in cultural orientations, what motivate them to put in their *best* at work is almost the same. It was found out in this study that for most of the respondents, pay rise is the only motivator that makes them to work more efficiently. Congruent with the scientific management orientation that man is an *economic* animal who is motivated by cash; this study confirmed that money is a major motivating factor, especially within the Nigeria context. This finding was also supported by Adebisi (1995) in his study titled "Productivity as a function of Incentive System". Thus, the study revealed that the differences in the culture of employees do not translate into differences in what factor motivates them to put in their best at work. We therefore conclude based on this finding that motivation is independent of culture but depends on individuals' present *physiological* and *psychological* needs.

Perhaps, the most interesting revelation from this study is that culture was found to have no significant relationship with the work orientation of the employees. This is because most of our respondents indicated that they are working to make a living, only few of them signified that they work because working is their lives while fewer work to enjoy social interaction or to ensure self-actualization. As may be expected, most of our respondents in this study indicated that they are working to meet their basic daily needs and to provide for their families. A minute portion of the respondents signified that they are working for the fun of it, to enjoy social interaction or for self-actualization. It is instructive however to stress the fact that this finding is not peculiar to the Nigerian employees' because findings have revealed that largest proportion of workers, the World over, do so mostly to make a living and make life better for themselves and family members.

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## Factors of Migration in Urban Bangladesh: An Empirical Study of Poor Migrants in Rajshahi City

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**Abstract:** *This paper examines the factors of rural-urban migration in Bangladesh. It is found that the underlying cause of migration is mainly driven by economic and social factors i.e., unemployment, poverty, political and ethnic conflicts, religious etc. In the migration process the push factors are more active than pull factors, as poverty and unemployment always push the poor villagers to change their residence to the cities. After migration majority of the migrants comparatively improved their livelihoods in the city. Although poor migrants have contributed significantly to the economic growth and gained from higher wages in higher productivity areas, they remain socially and economically excluded from the wider benefits of economic growth such as access to food and education, housing, sanitation and freedom. The study results highlight the need to target migrant groups and urban poor within urban areas in the provision of availability of work and social care services.*

### Introduction

Nearly one billion residents in cities of developing world are estimated to be poor, and the trend of urbanization and poverty increasingly alarming (Mehta, 2000). The number of people living in urban slums is expected to be double within 2025. Like other developing countries, the number of migrant dwellers is increasing very rapidly in urban societies of Bangladesh. Urban population is increasing mainly due to rural urban migration. Most of the migrants are rural poor who take shelter in slums, squatters, footpaths, rail stations and other scattered places. Bangladesh at present is 7<sup>th</sup> most populous country in the world. Based on the current rate of growth of population, the country's population (currently at 158 million) is expected to reach 206 million in 2025 (ESCAP, 2007). Like many countries, the rate of urban poor in Bangladesh is increasing. Migration has long been an important livelihood strategy for the people of Bangladesh. Every year, thousands of destitute victims of natural disasters pour into the cities from rural areas. Others come in the hope of a better life whenever the population rise to such an extent that people can no longer secure a livelihood, they migrated elsewhere. Even today, both poor and better off people pursue migration as a livelihood strategy in Bangladesh. In recent years, most of the cities in Bangladesh are experiencing rapid but unplanned urbanization. While the annual population growth rate is 1.7 per cent at national level, the percentage of urban growth is increasing faster and it is expected that more than 50 per cent of the population in Bangladesh will live in urban areas by the year 2025 ( ESCAP, 2007).

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The rapid growth of population and consequent landlessness along with other factors of population displacement in the rural areas lead to rural unemployment, which generates a growing flow of migrants. It seems to be an inevitable process where the urban sector absorbs the surplus rural populace. In fact, population growth in the urban sector in Bangladesh, particularly in Rajshahi is predominantly due to migration of people from its peripheral rural areas. Most of the migrants who come from rural areas are poor, and hence the urban areas remain numerically dominated by the poor. The migrants originate largely from the economically depressed areas of the country (Sarwar and Rahman, 2004). Thus, it can be said that people of Rajshahi are well acquainted with the process of migration. The poor settlers in Rajshahi city have sought shelter in many urban areas. They live in different urban areas like rail line slums, municipal roadside areas, in riversides, and also often live on vacant lands.

In Bangladesh migration from rural to urban areas has become a livelihood strategy adopted by an increasing number of families who migrate to the city in search of better employment opportunities. Several studies (Deshingkar and Grimm, 2005; Narayan et al., 2002) also suggest that an increasing number of poor migrant every year migrate either permanently or seasonally to Rajshahi city. They move on their own, in groups or with siblings in search for job opportunities available in the city or to escape from unemployment and poverty situations at rural areas. The poverty argument in Bangladesh is strong, where many poor and land less migrants are forced to migrate to support themselves or their families (Ahmad, 2004).

This paper seeks to describe and discuss the factors of migration in Northern Bangladesh where the poor migrate from rural areas to Rajshahi city. Here we try to find out the root causes of their migration that pushed them to migrate to urban society leaving behind their origin.

### **Materials and Methods**

The objectives of this study are to explore the causes of migration of the poor migrants, and try to identify the impact of urban migration on poverty reduction. Two selected areas namely Ramchandrowpur and Bhadra, which are situated in Rajshahi city in northern Bangladesh, were selected as study areas. This is a socio-anthropological study, so survey, observation and case study methods were used to conduct the research. In-depth interviews through structured questionnaire of 250 families were used to collect data. Other data were gathered by way of interviews of key informants, statistical yearbooks, local administrative and various related sources. For many elements of the study, qualitative and semi-quantitative analyses, guided by the research objectives, were carried out.

## Results

### *Factors of Migration*

According to the available empirical studies and evidences, the migration is always a selective process in which, the community, family or individuals fall into a certain category or characteristics and it varies extensively from culture to culture. Several studies reported that migration varies depending on socio-economic, demographic and cultural factors. That is lack of work availabilities, unemployment, poverty, natural disaster i.e., flood, draught, river erosion etc.; and others socio-cultural factors like, marriage, family conflict, better living, better education facilities, social discrimination, social prejudice, fanaticism, political chaos etc. also act as motivational factors of migration.

In order to examine the reasons, which facilitate or constrain migration by the poor, the present study used “factors of migration” as the main indicator and we found various factors of migration in urban areas. These are:

#### *Natural factors*

Natural disasters are a common feature in Bangladesh. *Manga* is one of them and affects millions of people especially in Northern part of Bangladesh. *Manga* is a *cyclical food insecurity* which occurs during the lean season and it directly affects those who are involved in agricultural activities. The agriculture in ‘the manga regions’ is mainly based on paddy cultivation. The employment opportunities for agricultural day-laborers, therefore, mainly depend on seasonal labor requirements for this crop. In between transplantation and harvest little labor is needed and as a result the income of day-laborers is low. Like the agricultural laborers, marginal farmers face manga, too. Their financial assets reduce towards the harvest. They have to give successive inputs to their fields, but they do not receive the return for their work until after harvest. The financial resources of many marginal farmers are not enough to ensure the inputs for their crops and sufficient food for their families at the same time.

Also, some groups or individuals are indirectly affected by the agricultural lean season. This is the case for all those who depend on the income of people affected by the agricultural lean season, like small traders and beggars. Due to the weak purchasing power they have no access to the market, i.e. they cannot buy enough food to fulfill their requirements. The access is sometimes further limited because the prices for basic foods often increase during manga. (Zug, 2006).

The poor people’s scarcity of work is in the region of Rangpur, Nelphamary, Kurigram, and Dinajpur especially in the months of *Ashshin* and *Kartik* (October-November). In their language, “we’ve no work, no food, how can we live?” So in order to survive they migrate to Rajshahi city in the quest of living. It is mentionable that migration takes places extensively from these regions.

Another important reason for their migration in Rajshahi city is that they know this city well or they have their neighbors or relatives in this city. Basically they prefer this known, and nearer city to others like Dhaka, Chittagong, Barishal, Sylhet, etc. For this reason we found higher rate of migration in this city. Although they all try heart and soul to remain in their respective native places, but sometimes they face a situation in which they have no alternative but to migrate.

In this regard the case of Ramjan Ali is mentionable here.

*Ramjan Ali (Charkhoir village, Rajarhat union, Kurigram), a 37 years old farmer, was economically solvent. He had a family consisting of nine members including his parents, wife, three daughters and two sons. He had no want. He could maintain his family properly with what he could earn. Manga took place thrice at a stretch. His cultivable land was parched and he got no crop. Besides this he had no opportunity to engage himself in other profession in order to earn his living. Gradually all his money and wealth began to decrease. Soon one day he was in such a situation that he and his family members had to be half fed. He lost everything in his house and had nothing to feed his children. At one point he and his family members had to starve for three days continuously. Not only Ramjan Ali but also other farmers face the same situation*

*In this condition a person advised him to go to the city so that he could at least feed his children with some kind of food. But at first he did not agree to this proposal and did not want to leave his ancestors' dwelling place. But when his little daughter died of starvation, he with other villagers, decided to migrate to the city. At the beginning he came with his two sons in quest for work. He thought that if he could improve his condition, he would return to his village.*

*Coming to the city he, at first, did the work of a porter. After that he was pilling rickshaw. The two boys worked in hotels. They used to go home once in a week. They found that they could not improve their lot. But every year Manga came to them in their life and made them lose every thing. At last he left his home and came to the town with his family.*

Like him there are many Ramjans who have migrated to the town because of Manga. In this study 24 percent of people migrated because of Manga (Table .1).

After Manga the second cause which is responsible for migration to the city is the flood and river bank erosion. In Bangladesh every year many families lose all their belonging owing to flood and riverbank erosion. So, the people living especially beside the river banks migrate to the city. From our study we have seen that 22 percent poor migrants have come to the city for these reasons (Table 1). Floods and riverbank erosion made them lose everything and they had to starve for days together and at one point they migrated to the city in search of living.

#### *Economic factors*

In explaining the economic condition of a poor family, the monthly income, owned cultivable land and profession are the important factors for migration. Economic activities and income in a rural society mainly depends on cultivable lands. In this study we found that poverty and unemployment are the factors to push them to the city. Poverty works as the main factor of every step of it. When there is no work and the stomach is empty, man tries his best to survive. Similarly when the poor people fail to feed their family in their native villages, they have to see the hungry faces of their beloved children and then try to get opportunities, even after trying heart and soul, to get rid of poverty, they are compelled to migrate to another place. Because of this poverty

they are now the inhabitants of towns. That is to say that 15 percent people migrate to the city because of poverty.

The agricultural sector does not have enough scope to absorb large numbers of laborer. Rural areas still lag behind in industrialization and thus unemployment is the general feature of this country. The adult, young, adolescent and children in rural areas do not find satisfactory employment. So people move to city area looking for employment. 9 percent respondents were found to migrate for this reason.

**Table 1: Factors of Migration in Rajshahi City**

<b><u>Reasons</u></b>	<b><u>Respondents</u></b>	<b><u>Percent</u></b>
<b>Natural Factors</b>		
a) <i>Manga</i>	60	24.0
b) Flood and River bank erosion	53	22.0
c) Storm	7	3.0
Total	120	49.0
<b>Economic Factors</b>		
a) Poverty	37	15.0
b) Unemployment	23	9.0
Total	60	24.0
<b>Social Factors</b>		
a) Population explosion	12	5.0
b) Marriage	11	4.0
c) Social inequality / discrimination , Religious violence	9	3.0
Total	32	12.0
<b>Political Factors</b>		
a) Crossing boarder	11	4.0
b) Involvement of politics	5	2.0
Total	16	6.0
<b>Others</b>	22	9.0
<b>Total</b>	250	100

#### *Social factors*

In the study area 4.8 percent of the poor migration has occurred only in big families and their family member ranges between 5 and 8 so that they could not manage sufficient food for their

family members. In case of poverty, 5 percent of poor migrant come to city. It is also interesting to note that the number of female children is higher than the male child in the poor families. Socially, it is an additional burden for them. So the poor families remain very anxious for the marriage of their daughters and want to reduce the number of family members through marriage. In this case we found 4 percent poor women who have migrated for reasons of marriage. In their word “there (native village) was not any opportunity for the poor people, all opportunity and benefit go to the elite of the village”. So they migrated to Rajshahi City. A few migrants were also found who left their villages for religious violence e.g. religious conflict, *fatwa* (religious edict) etc. The data also found that the women and husbands migrated alone in the city areas in search of employment opportunities. After migration they brought their wife/husband and children to join the informal jobs in the form of restaurant workers, maid servants, daily laborers, etc., to increase family income. Besides this, husbands brought their wives and children to join them.

#### *Political factors*

During the time of research we came to know that some migrant families came to Rajshahi in 1947, some in 1971 and some after 1971. Generally some communities of different religions of the west Bengal were living in India and they migrated (illegally crossing the river and by land route) to Bangladesh. Because they were the victims of different kinds of political torture, disparity etc. and now they are living in Rajshahi City. In our research we found that 4 percent poor migrants have come from India by crossing the border.

In this regard we came to know that political clash, and political dispute also compel people to migrate to the city. We found 2 percent migrants in this category. Among them some have migrated to the town because they were minority groups, some have migrated because their supported political party has been defeated in the election and they feared torture from the rival party, some feared that legal cases might be filed against them and some faced the treat of life. Here we can mention the case of Amzad Hossain:

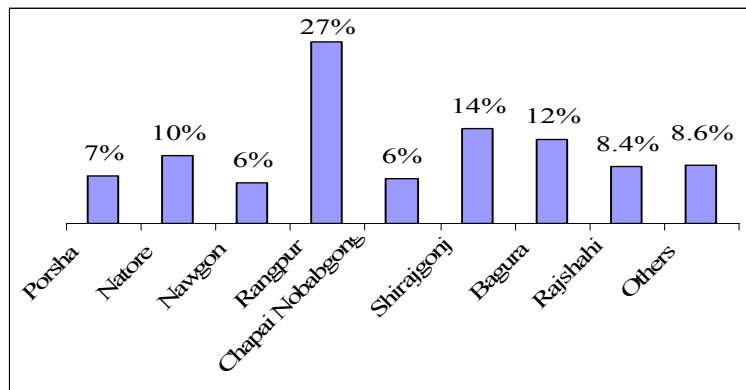
*Amzad Hossain (Vill. Sangbhag, PO. Zhalmalia, UP. Puthia, Zila.Rajshahi) 28 years old man, was an active supporter of Awamileague. He used to take part in different meeting, processions and all other party activities. For this reason he had a lot of influence in the village. One day a class took place between BNP and Awamileague in his village. In that clash many villagers were injured. He himself was also injured. Became BNP had much more influence, Amzad fled to Rajshahi city for the fear of the police. Then he was 19 years old. Since then Amzad has been living here. In his ward, “If the police didn’t come to my home, if I didn’t do politics, it would not to the town. I would do something to maintain my family in the village. After my arrival in the town the police and the leader of the opposite party would often come to my house and look for me. As a result one day I went home and took all my family members in the town.”*

**Other factors**

Some migrant families left their villages because they mortgaged their land and took money from moneylenders or from the influential people of the rural areas but could not pay it back and thus lost the mortgaged land or property. Some other people have migrated due to the torture unleashed on them by the influential quarters of the villages. Some migrant families said that they got credit from NGOs and they could not use this money for appropriate purpose. They spent all credit loans for their own family consumption or repairing houses. This default of credit pushed them to migrate to Rajshahi city. In Rajshahi city they are engaged in informal working professions and earn money. For returning installment they go to villages and after payment they came back to city. For this system a lot of poor migrants stay in city areas for permanently (Table 1).

**Places of Origin and Living Period in Rajshahi City**

There are two major stands in migration theory. One is concerned with the transfer of labour from rural to urban areas and another is concerned with the effects of distance and choice of destination of the migration. It was found that migrants try to minimize distance, though they travel long distances and generally go to one of the great centers of commerce and industry. When social organization is concerned, migrants prefer to go to a place, which is as similar as possible to their place of origin (Connel *et. al.*, 1976). The choice of place by the migrants generally depend on the ability of bearing migration cost, extent of risk, availability of job, and various amenities, improved transport and communication facilities etc.



**Figure 1: Place of Origin of the Poor Migrants**

We already noted the causes of migration of the poor people from the district of Rangpur, Gaibandha and Dinajpur. Here we also see that from those regions the poor people have settled

in Rajshahi. The main problems of the people of those regions are lack of work and poverty. For this reason the poor people from these regions migrate to town in large number (Figure 1). As place of origin in migration Sirajgonj and its adjoining regions occupy the 2<sup>nd</sup> highest position. As the reason of this we can mention flood that affects these regions every year. Because of floods the poor people migrate to the town in groups. The other places of origin are not so much significant.

However, we have also found some families who have migrated from other districts i.e., Rajbari, Faridpur and Comilla. It is mentionable here that there is also a family where the husband whose place of origin is Comilla came to Rajshahi in search of work but he got married and settled here. So in respect of place of origin we see that people migrate in large numbers from the regions which are affected by natural calamities and economic crisis.

In our above discussion we found that the poor migrants choose the places before migration. We know our villages have little scope for working or earning. So that, a lot of poor people migrate from their native land to find jobs. In respect of choosing Rajshahi city, people who came here for work is 29.2 percent, while 26 percent choose this city for migration because it is nearer to their native lands, also the traveling cost is reasonable for poor migrants. About 25.2 percent migrants choose Rajshahi city as they have strong kin network in Rajshahi city. We also found that 10.4 percent came for other reasons e.g., safety, better education opportunity for child, health and treatment opportunities, more and better recreational opportunities and easy transportation, better roads etc.

**Table 2: Reasons for Choosing Rajshahi City**

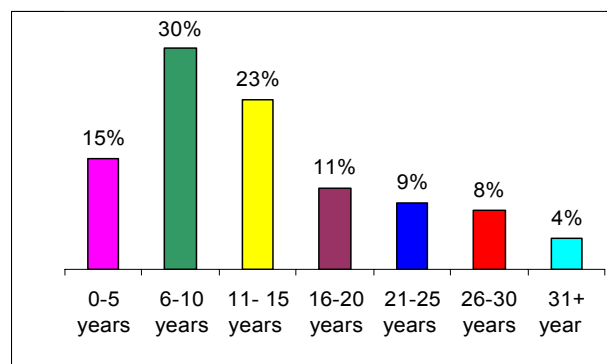
<b><u>Reasons</u></b>	<b><u>Frequency</u></b>	<b><u>Percent</u></b>
Work availability	73	29.2
Short distance from places of origin	65	26.0
Kin Network	63	25.2
Better life	26	10.4
Others	23	9.2
Total	250	100.0

The kinship network is a very important issue for choosing migration places or cities. During our field exploration we observed that kin networks played a crucial role of choosing places for the poor migrants. In any crisis period the kin interaction process like reciprocal obligations plays a strong role in making it easier to protect people against calamities. From the fieldwork it has been



found that in any crisis period the poorer migrants go to the rich for some sort of assistance through references of their kins. For this reason majority of poor people choose those places where their relatives live.

From this study we have seen that in Rajshahi, some migrant families have been living from before the liberation period (1971), some have been living after the liberation war and some have been living for 0-5 years. Of the living period in Rajshahi city (Figure 2) we find the highest percentage (30 percent) of migrant families have been living in urban areas for 06-10 years. That is to say, they have become urban bound in a certain period of time for a particular reason. Generally we know that the main cause of it is the devastating flood that took place in 1998 and some part of northern region of the country faced serious losses. That is when people migrated to different places among them the largest number migrated to Rajshahi city.



**Figure 2: Living Period in Rajshahi City**

### **Impact of Migration on Poverty Reduction**

Migration has greater potential to poverty reduction, meeting the Millennium Development Goals (MDGs) and contributing to economic growth in developing countries. This is because of four things: first, internal migrations stem from a broader base where smaller sums of money are evenly distributed to specific areas and poor families through internal remittances (rather than international remittances, which reach fewer people). Second, it is likely that internal migration will continue to increase at a faster rate than international migration. Third, internal migration involves poorer people from poorer regions and has a strong role to play in achieving the MDGs. Fourth, it is an important driver of growth in many sectors including agriculture, manufacturing, construction, coastal economies and services.

Migration can both cause and be caused by poverty. Similarly, poverty can be alleviated as well as exacerbated by population movement. Easy generalizations are impossible to make but it is likely that the relative impact of migration on poverty, varies by level of development of the area under consideration. The effects of migration on individuals, households and regions add up to significant impact on the national economy and society. In this respect we could consider some case studies below:

#### **Case 1:**

*Monnaf, aged 34, lived in a village of Niamatpur under Nawgoan District. He started his work at the age of four due to the suffering from poverty in the Chowdury's (a rich landowner) house for meals only. At the age of 12, he migrated to Nawgoan city and stayed six months as a hotel boy. Once, his friend Sirajul told him to go to Rajshahi City, because he heard that Rajshahi has many more opportunities to earn money. So, Monnaf decided to go to Rajshahi City with his friend Sirajul. It was mid July 1987 when they migrated to Rajshahi city without any capital in their hands. At first they slept on the footpath at night, and doing several jobs in the city area. Few days later they found a job in motor garage and were able to rent a room in the slum of Bhadra area. In the mean time Monnaf visited his village several times and was able to send money to his family. After passing three years in Rajshahi, his younger brothers, influenced by him, migrated to Rajshahi. Now his parents are living in Niamatpur village but he and his brother still living in Rajshahi City. His main profession is rickshaw pulling and small shop keeping as a secondary occupation. His monthly income is around Tk. 6000 and he is satisfied with his life after migration.*

#### **CASE 2:**

*Shri Nirmol Das is a strong, healthy 50 year old man. He is working as a day laborer in Rajshahi city. Before migration he was a farmer and knew only farming. He has six family members including his one divorced daughter. They did not have enough cropland in the village where they lived previously. Nirmol worked in a shared cropping field and his teenage son also worked with him. But, suddenly one day, they were affected by flood and lost their property. At that time some of the villagers left their village and migrated to city area. Nirmol and his family also decided to leave village and migrated to Rajshahi city. After their migration they stayed with other villagers who migrated before them. But after one week Nirmol managed to get work and also tried to manage work for his family members. Previously he changed his job many times, but now he is working as a road and house construction laborer. Now his monthly income is average Tk. 2500 and his three sons also earn Tk. 5000. Now his life is better than before and he is satisfied with his present life. He and his family members do not think of going back to his village, because they have improved their life after migration.*

#### **Case 3:**

*Ramjan Halder (35) was living at Halderpara in Krishnapur village of Pabna District. He was a fisherman, an occupation that ran in his family. He used to fish in his childhood with his father and other relatives. He went to the Padma river and Chalanbeel wetland in Rajshahi and Natore to catch fish.*

*The big river Padma is good to catch fish. So he migrated to Rajshahi city and stayed in Ramchandrapur slum of the Padma riverbank. Now he earns average tk., 150 per day which was sufficient to maintain his livelihood. But now- a- days, living costs are increasing so this small amount hardly covers anything. In such reality, Ramjan doesn't know what he will do, as he is facing trouble in his traditional occupation.*

### **Conclusion**

Migration is a natural process where normally surplus manpower released from the rural sector is needed for urban industrial growth. Rural-urban migration can be considered socially and economically beneficial because it enables human resources to shift from locations where their marginal products and hence earnings are either zero or very low to places where these are high and also growing. In general, the decision of migration comes to be the function of variables like

the income differential between the countryside and the town, the chance of getting a job, the risk attitude of the migrant, and information on availability of jobs in urban locations. Thus a migrant may often fail to find an appropriate job in the city. Before migration one might have had a rural sector job which may be of a very low productivity, but after migration it often happens that he ends up getting no job whatsoever, thus becoming unemployed.

The present study reveals that rural-urban migration and hence urbanization in Bangladesh is poverty driven, caused by extreme entitlement contraction among a sizeable segment of the rural population, who happen to be among the marginalized peasantry and the landless poor. The migration of the rural poor to the urban centers has caused a direct transmission of rural poverty and backwardness to the towns, engendering the process of 'ruralization' of the urban areas. The pull factors, which attract the rural people and induce them to migration to urban locations, are in a large measure the direct or indirect results of government's development policy and effort, that have always been biased towards the urban areas. Thus, allocation of public funds in the successive five year plans has been consistently biased towards the urban, and against the rural sectors.

It may be mentioned here that, apart from enhanced job prospects, better educational and health care facilities and other social amenities that are necessary for better living conditions are added attractions of the migrants towards the city life. In our study, a number of respondents indicated that they had migrated to the city with a view to giving their children a better education. They feel that there is a wide gap between the urban and rural areas in terms of both the quality of education and the type of educational institutions providing a wide range of facilities, which encouraged them to migrate. In order to stop poor people from migration, therefore, the essential pre-conditions seem to be the expansion of employment opportunities, as mentioned above, and also the creation of better living conditions through improved availability of essential health care and occupational services. Unless the like of the amenities enjoyed by migrants in the cities can be made available in the rural areas, at least partly, if not to the fullest extent, the idea of alleviation of poverty through inducing and sustaining the process of reverse migration will hardly be translated into reality.

It is admitted on all hands, however, that alleviation of poverty in Bangladesh has been at the heart of the Government's development strategy, particularly since independence of the country. Implicitly, one objective of such strategy has also been to slow down the pace of rural-urban migration, and for that matter to reduce the problems associated with excessive urbanization.

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## Book Review

### ***Instruments of Social Research by Jaspal Sing***

Jaipur: Rawat, pp 312+xxiii 2011

There is little doubt that teaching sociological methods is the most challenging task for a sociologist. This is also the course that students hate most everywhere (Judkins and Hand, 1994). This is particularly so in the South where we rely on Western books and Western examples. This new book on the craft of sociological research is different in this respect; it is both witty and indigenous. Divided into ten chapters, it covers major areas of social research that undergraduate students of sociology should know. The first chapter interestingly begins with creativity and its process. The analysis is often laced with witty parables and examples drawn from a variety of sources including the *Mahabharata*. I greatly enjoyed the story of an African student who went to Germany, produced his dissertation and got his degree although the only educational qualification he had was a license to kill wild elephants written in Swahili language which the university authorities had innocently accepted as a valid educational qualification for his admission.

The second chapter focuses on Max Weber and his interpretative sociology as an example of non-empirical methods of research. The chapter has very little to do with Weber's methodology. It is strange that the author thought it proper to discuss induction and deduction in this chapter. The third chapter aims at elucidating the meaning, characteristics, and steps of social research and distinctions between pure and applied research. The fourth chapter deals with the meaning and characteristics of scientific methods and provides definitions of various terms related to the scientific method. The fifth chapter focuses on observation as a method of investigation and focuses extensively on participant-observation. It provides a guideline of how to conduct field work and how to do it easily. The sixth chapter deals with how to do interviews and construct questionnaires. The chapter provides practical tips about interviewing. The seventh chapter deals with measurement and scaling in great detail. This chapter will be particularly helpful to students although some of the concepts and themes are presented ambiguously and arbitrarily.

It is very difficult to understand why figure 5 describing Seeman's types of alienation is inserted after an analysis of Max Weber's Protestant ethic. Important entries like subjective class consciousness are discussed in a sketchy way. The types and techniques of sampling are discussed in chapter eight. It is a short chapter but provides a lot of necessary information about types of sampling and its techniques. The techniques of data processing are described in chapter nine. The chapter covers some aspects of elementary statistics such as mean, median and mode. It describes coding, tabulation and preparation of tables. It also briefly discusses correlations and tests of association. This chapter again will be helpful to students. The final chapter briefly elucidates the techniques of report writing.

As I have said earlier the book has been written in an engaging tone with anecdotes and parables which are highly useful for a manual on doing sociology which is most often highly technical and humourless. The examples are often drawn from Indian situation which is valuable and makes the book user-friendly for students of South Asia.

Most sociological text books of the South suffer from three shortcomings. Firstly, the authors are often inadequately familiar with the epistemological basis of their engagement. Secondly, they are dated by decades. Thirdly, they are often unimaginative and dull or weak replicas of Western textbooks. The particular merit of this book is that it is engaging and Indian. It draws upon examples or situations (although hardly scholarly) which suit the South Asian students. But the book reflects methodological preoccupations that are dated by several decades. The concepts discussed in the book are occasionally far from clear. There is hardly any indication that we have

reached the age of mixed methods, feminist epistemology, SPSS, postmodernism or at least, Robert Chambers.

Yet, I recommend the book for class room use along with other more reputed Western texts in the area. Good locally produced text books are essential for improving the quality of teaching and research in sociology in the South. It is a gradual process. Involvement of publishers, professional associations and critical peer reviewing has significant roles to play here. I hope the author would be able to use the impressive series the Sage publishes on research methodology and a few of the high quality recent texts on methodology such as Neuman, 2010 and Price, Status, and Breese (eds), 2009 in the next edition of the book.

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