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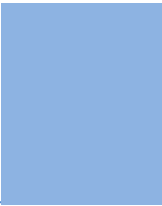
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Doctor of Philosophy (Management),
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Master in Business Administration, IESE,
University of Navarra
Degree in Industrial Engineering,
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Mathematics - Luther College
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Nephrology and Internal Medicine
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**Dr. R.K. Dixit** (HON.)
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Chief Author, India
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BE (HONS. in Computer Science), FICCT
SAP Certified Consultant
Technical Dean, India
Website: www.suyogdixit.com
Email:suyog@suyogdixit.com,
dean@computerresearch.org

# Contents of the Volume

*From the Chief Author's Desk*

We see a drastic momentum everywhere in all fields now a day. Which in turns, say a lot to everyone to excel with all possible way. The need of the hour is to pick the right key at the right time with all extras. Citing the computer versions, any automobile models, infrastructures, etc. It is not the result of any preplanning but the implementations of planning.

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Intentions are very clear to do best in all possible way with all care.

Dr. R. K. Dixit
Chief Author
chiefauthor@globaljournals.org

# Appraisal of Some Nigerian Coals

N. E. Ekeocha[1] Jumbo Davies[2]

*Abstract*-**Coal has served man well from earliest time till date. It is basically of sedimentary origin and is widely found in Nigeria within the Cretaceous Mamu and Nsukka Formations within the Anambra depositional basin. Coal has found application as fossil fuel in the generation of electricity, for heating of the home and in steel production. Proximate analysis for fixed carbon content, sulfur content, moisture content, and ash content shows Nigerian coal to be best in use for energy generation, having high carbon content and low sulfur and ash content. Atterberg limit and shrinkage limit tests carried out on the samples showed low plastic and liquid limits values (24.6% - 31.7% and 29.5% - 37.2%) and linear shrinkage (2.9% - 6.4%) respectively, which satisfy engineering standard of stability with insignificant reduction in size or distortion of shape. Being inert, the stabilization of the coal was achieved using clay, thereby enhancing its potential for production of durable bricks. Coal ash (waste) generated from power generation and steel production plants could be used for brick making without direct or indirect impact on the environment and human health. Standard laboratory tests were carried out to determine the engineering properties of the coal in its natural state and after treatment with increasing percentages of Portland cement and the results indicated a significant improvement in the engineering properties of the coal with a reduction in plasticity and shrinkage, as well as increase in the strength and bearing capacity with the addition of 2% Portland cement. The resulting brick met most Nigerian construction specifications for fills, embankment and sub-base. On account of its being non-cohesive naturally, other additives with high plasticity serve as bonding/cementing material for coal.**

## I. INTRODUCTION

Coal deposits composed primarily of carbon and other elements including sulfur are readily combustible black-brownish rock of plant remains, form in an environment where plant remains are saved by mud and water from oxidation and biodegradation. Composed of carbon and other elements including sulfur, it is source of carbon dioxide emissions due to its use in electricity generation which results in global warming. Waste products from coal usage include fly ash, bottom ash, boiler slag, and flue gas desulfurization, which contain heavy metals, raising health concern in areas with poor air pollution controls (Wikipedia, 2003). Total world reserves of coal is estimated to be about 998 billion tones and most loss is to fire due to spontaneous combustion or mine fires (Brian, 1983). The sequence of coal formation, Peat-lignite-bituminous coal-anthracite (Harvey, 1982) shows several progressive Changes taking place, resulting in the formation of many power plants. High volatile bituminous coal is found within

Author-[1]*Geology Department*
*Port Harcourt (e-mail-eknainb@yahoo.co.uk)*

the Turonian-Santonian Awgu Formation in the Anambra Different kinds of coal from peat lignite – sub bituminous - Bituminous and anthracite, following the process of coal formation from cellulose as it progresses from one rank to another.

Deposits of clay, silt or sand on coal, eventually become part of the coal, constituting the ash content of the coal. Peat becomes coal when subjected to the pressure of overlying layers of sedimentary rocks of sandstone, shale and limestone. Some heat is generated by the overburden helping the coal-making process. The physical and chemical changes in the peat gradually result in the slow transition first to lignite and then to higher ranks of bituminous and anthracite coal (Jesen and Bateman, 1979). Gradual expulsion of water results in bedding plane cleavage. Changes in density, color and luster occur as the coal progresses through the various ranks. The time required for chemical and physical changes depend upon the intensity and nature of the pressure and heat which cause the changes. Older coals have been deeply buried over longer time, and are usually of higher rank.

The most economical method of coal extraction from coal seams depends on depth and quality of the seam. Coal mining processes are generally differentiated by whether they operate on the surface or underground, however both require that coal be washed.

Primarily coal is used as solid fuel to produce electricity and heat through combustion, coking of coal which is a solid carbonaceous residue derived from low-ash, low sulfur bituminous coal from which the volatile constituents are driven off by baking in an oven without oxygen. This ensures that fixed carbon and residual ash are fused together and are used in smelting iron ore in a blast furnace as a reducing agent. Coal could also be useful in the conversion through the process of gasification, using high temperature and pressure. Steam and oxygen produce syngas, mainly consisting of carbon monoxide and hydrogen as alternative fuel. Processes such as liquefaction and methanation also make use of modern processes converting coal to liquid fuel like gasoline or diesel.

Estimates of the national coal reserve are put at 2.75 billion tonnes with occurrence spreading over 13 states of the country (Obaje, et. al. 1998). Coal deposits occur within Enugu, Orukpa - Benue and okaba – Kogi (Behre, 2005 and Ofor, 1997), within the Cretaceous Anambra depositional basin (Fig 1). Nigerian coal is noted to be suitable for boiler fuel, calorific gas production, domestic heating, briquettes, coking coal for steel production. Having characteristic properties of low sulfur, low ash content and low thermoplastic properties, the coal attains the sub-bituminous rank of coal and is thereby made fit for use by electric

basinwhile    upper Benue contains lignite and sub-bituminous coal in the Maastrichtian Gombe sandstone Formation (Obaje, et al, 1998). This suggests that the sub-bituminous coal in the lower and upper Benue are optimum for combustion and sub optimum for liquefaction, while the high volatile bituminous coal in the middle Benue (Anambra Basin) are suitable for liquefaction and prove to be good raw material for coke making (carbonization) in steel production. The stabilization of Nigerian coal with Portland cement (gypsum + limestone) gave effective results, indicating that the stabilized coal has potential for use for various construction purposes (Okagbue and Ochulor, 2004).

In order to assess the quality and composition of the coal deposits, samples of coal were collected from the three locations (Enugu, Orukpa and Okaba), and subsequently taken to the laboratory for analysis. The coal samples were subjected to proximate analysis to determine the moisture, ash, sulfur and fixed carbon content (Ward, 1984). Additional tests carried out include caloric value (CV) and specific gravity (SG). Since the use of coal is determined by the quality, it is attempted in this study to evaluate the potential of coal in brick making in a sustained environmentally friendly manner

**Fig. 1: Map of proved coal reserve showing sample locations (1, 2 & 3)**        *Source: Ofor '97*
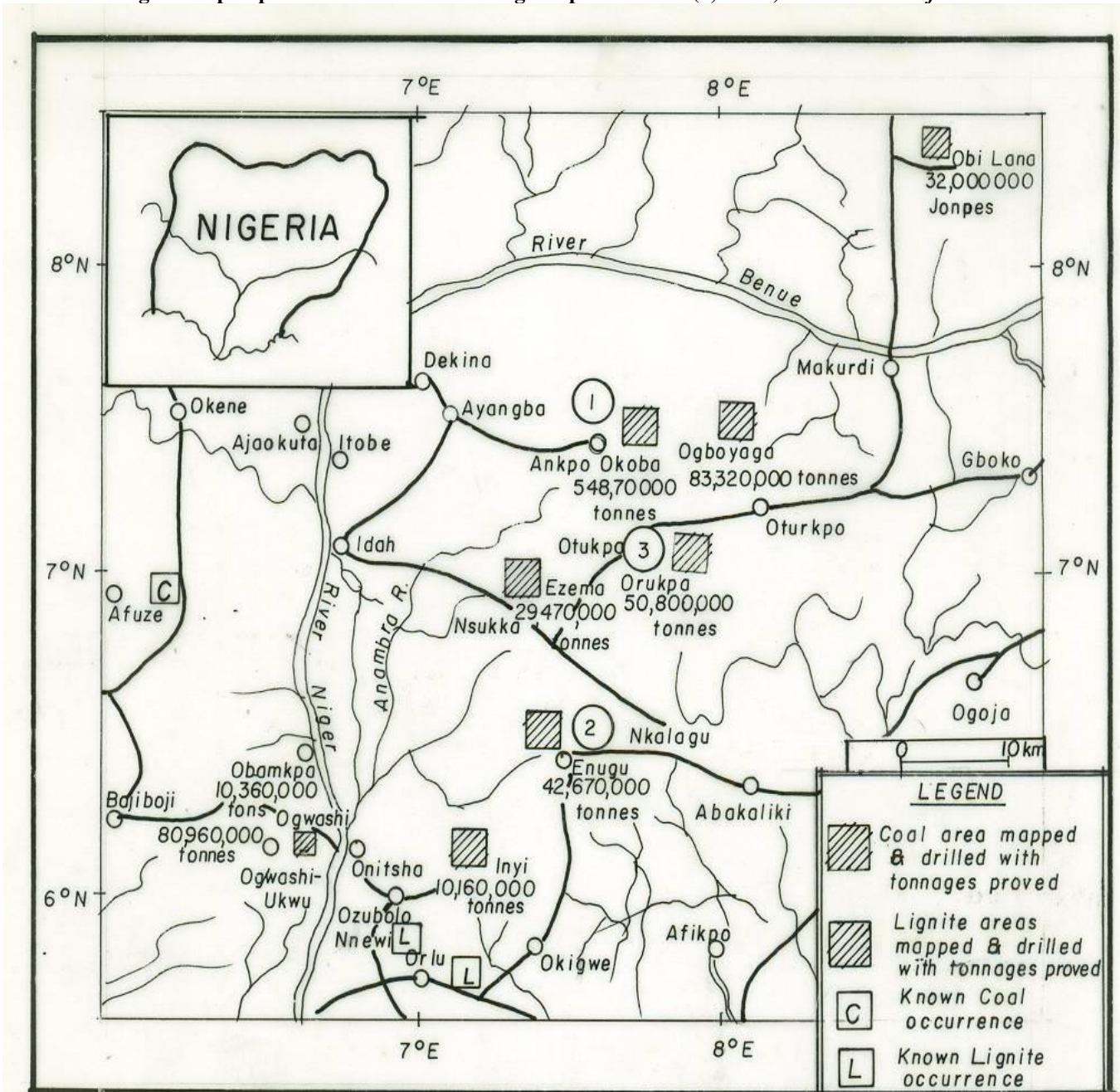
## II. METHOD OF STUDY

Fresh samples of coal were collected from the various locations and well packaged in polythene bags to preserve the moisture content, labelled and transported to the laboratory for analysis. The samples were pulverized and subjected to assessment of the Atterberg limits and shrinkage limits, adopting British Standard B.S 1377(1990) for testing of soil.

Proximate test on the samples was also done to determine coal quality using British Standard B.S.1016 part 3 (1973) as standard procedure for analysis to determine the moisture content, ash content, sulfur and fixed carbon content.

### A. Linear Shrinkage

Linear shrinkage measured the reduction in size on loss of moisture after heating for 24 hours at $110^{o}c$ in an oven. To successfully achieve this, clay was added as a bonding material since coal is not cohesive in its natural state.

### B. Fixed Carbon

The determination of fixed Carbon (FC) content was done using British Standard B.S 1016 part 3 (1973), and calculation was done using the formula

$$FC = \frac{Weight\ difference}{Weight\ of\ sample} \times 100 = \%\ Organic\ matter \times 1.72$$

Using the Rapid Titremetric Method, 1g of pulverized coal sample was oxidized with potassium dichromate in the presence of concentrated sulphuric acid for 15 minutes on the hot plate. The oxidized residue was made up to 10m with distilled water and 20m of the solution was titrated with ferrous ammonium sulphate in the presence of barium diphenylamine sulphonate indicator. It was further repeated for other samples, while a blank was also prepared with dichromate and sulphate acid. The calculation of titre value was done using the following formula:

$$\frac{18.2\ titre\ value-10.0g\ of\ sample \times .2x\ .3}{Weight\ of\ sample\ (.1)} = FC \times 4$$

### C. Moisture Content

Moisture is an important property of coal as total moisture is analyzed by loss of mass between an untreated sample and the sample once analyzed. Placing small quantity of pulverized sample in a container with the weight recorded and then oven dried for 12 hours in an oven temperature of $105^{o}c$, then weighed again when removed from oven and cooled. The moisture content is determined using the formula

$$\frac{Mass\ of\ water}{Mass\ of\ solid\ soil} \times 100$$

### D. Ash Content

Ash content of coal is the non-combustible residue left after coal is burnt. This represents the bulk mineral matter after carbon, oxygen, sulfur and water have been driven off during combustion. Analysis is fairly straight forward, with the coal thoroughly burnt and the ash material expressed as a percentage of the original weight.

$$\frac{Initial\ weight-\ residual\ weight}{Initial\ weight} \times 100$$

## III. RESULTS AND DISCUSSION

The results for the liquid limit, plastic limit, plasticity index and linear shrinkage for samples from Enugu, Okaba in Kogi and Orukpa in Benue, are shown in table 1 below.

**Table 1: Atterberg's Limits of the various coals**

| Test type | Enugu | Orukpa | Okaba |
|---|---|---|---|
| Liquid limit (%) | 37.2 | 31.1 | 29.5 |
| Plastic Limit (%) | 31.7 | 24.2 | 26.2 |
| Plasticity Index (%) | 5.5 | 6.9 | 3.3 |
| Linear Shrinkage (%) | 6.4 | 5.7 | 2.9 |

**Table 2: Proximate test result of the coals**

| Test type | Enugu | Orukpa | Okaba |
|---|---|---|---|
| Fixed Carbon (%) | 82 | 80.6 | 80.2 |
| Moisture Content (%) | 5.0 | 5.1 | 5.2 |
| Ash Content (%) | 12.0 | 13.2 | 13.5 |
| Sulphur (%) | 1.0 | 1.1 | 1.1 |

The Atterberg limits test carried out on the coals showed that the samples are not cohesive, difficult to work with, and particularly did not absorb water upon mixing after pulverizing.

To achieve best result and in line with British Standard B.S 1377 (1990) for geotechnical soils, Clay a cohesive soil was added as a bonding or cementing material for the coal in a ratio 2:5, for its potential to absorb water and also mix well with coal.

Though coal is not cohesive, the addition of clay increased its workability and its potential expansiveness; and it recorded low swelling potential upon comparison with a standard for swelling potential for soil (Ola, 1982), having low plasticity index (<15%).

Table 3: Plasticity of Coal in relation to Swelling (after Ola, 1982)

| Plasticity index % | Swelling Potential |
|---|---|
| 0-15 | Low |
| 15-25 | Medium |
| 25-35 | High |
| >35 | Very High |

Clay in the coals enhanced their plastic behaviour, making them best for brick production that is stable. Low water absorption character will enhance brick making, thereby eliminating tendency towards structural failure due to expansion on absorption of water or contraction and loss of moisture due to heated climate change.

The linear shrinkage values for the coals are generally low and suggest that they do not lose water and show negligible reduction and distortion in the shape and size of the final brick.

### A. Proximate Test Result.

The proximate test results for the coal samples collected from Enugu, Orukpa and Okaba were as follows high fixed carbon, low sulfur, low moisture content and low ash content as most of the coal is burnt implying that much energy can be got from its use for power generation as shown by absorption of 4 times more dichromate by the coal samples.

Sulfur content is low meaning that for its use in brick production its effect has to be completely eliminated. Obaje et. al. (1998) showed from their work that to eliminate the effect of sulfur, limestone could be added for safe usage without health implication.

Low ash content in the coal is indicative of best coal quality according to world coal institute and is a critical factor in selecting coals for steam power generation.

The low moisture content indicates that bricks produced will be stable as no loss of water occurs thereby giving a stable structure.

### IV. CONCLUSION

The various coal samples have liquid limits of 37.2%, 31.1%, 29.5% for Enugu, Orukpa and Okaba respectively, showing that they are between intermediate and low in plasticity and compressibility.

The plastic limit for the coals were 31.7%, 24.2% and 26.2% with plasticity index of between 3.3% and 5.5%, which gives the coals a good performance characteristics towards brick making. Assessment based on the Rigidity and stability of bricks produced, gave indication to the fact that the coals are:

- *Sufficiently strong and stable*
- *Resistant to rain penetration due to poor absorption of water*
- *Able to provide sufficient thermal insulation*
- *Dimensionally stable, ensuring freedom from cracking and distortion*
- *Durable*

The proximate test results show the coals to be high in carbon content implying they are best for energy generation, and good for brick making as thermal heat inherent in the bricks produce impact, fast baking to the bonding clay. And that coal by-product from power plant or steel production plant could be safely used for brick making thereby reducing waste production. The coals are found to be suitable for large scale usage in brick production for low income houses and they have the advantage of being available as well as cheap.

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# A Comprehensive Study on Impact and role of SHGs in Eastern U.P.

Ram Bahadur Chhetri
{ *GJHSS Classification – C (FOR)*
*140201.140218.140303* }

*Abstract*- **Microfinance is gathering momentum to become a major force in India. The self-help group (SHG) model with bank lending to groups of (often) poor women without collateral has become an accepted part of rural finance. The present article tries to draw attention to the positive impact of SHG's in Eastern U.P. With traditionally loss-making rural banks shifting their portfolio away from the rural poor in the post-reform period, SHG-based microfinance, nurtured and aided by NGOs, have become an important alternative to traditional lending in terms of reaching the poor without incurring a fortune in operating and monitoring costs. The government and NABARD have recognized this and have emphasized the SHG approach and working along with NGOs in its initiatives. In spite of the impressive figures, microfinance in India is still presently too small to create a massive impact in poverty alleviation, but if pursued with skill and opportunity development of the poor, it holds the promise to alter the socioeconomic face of the India's poor.**

## I. INTRODUCTION

The SHG movement in India is basically aimed at utilizing the SHG's as an 'intermediately' between the banks and the rural poor to help drastically reduce transaction costs for both the banks and the rural clients (Nanda, 1995). NABARD with its head quarters at Mumbai is an Apex Development Bank in India for financing and promoting agriculture, small scale industries, cottage and village industries, handicrafts and other rural crafts so as to promote integrated rural development. In wake of banking sector reforms invoked in early 1990's the role of commercial banks in providing credit to rural poor came under intensive debate vis-à-vis the sustainability of entire banking operation for providing banking services-both in terms of savings and credit-to the rural poor. Sheokand (1998) has indicated that as the rural poor's share in availing formal sector credit got further marginalized, NABARD, in 1992 launched the SHG - Bank linkage programmed with the policy backup of the Reserve Bank of India (Sheokand, 1998). According to Shanmugam(1998) the SHG - Bank linkage programmed initiated by NABARD, in active collaboration with Non-Governmental Organizations (NGOs), aimed at enhancing the coverage of rural poor under institutional credit thereby focusing on poverty alleviation and empowerment (Shanmugam, 1998). Prior to this, NABARD's initiative in promoting active partnership between banks and SHGs was encouraged by the findings of a study conducted in 1988-89 by NABARD in collaboration with member institutions of Asia Pacific

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*Author-Research scholar, Deptt. Of Business Economics, FMS,V.B.S. Purvanchal University, Jaunpur (U.P.)*
*Email- chhetrica@gmail.com*

Rural and Agricultural Credit Association (APRACA), Manila. The study covered 43 NGOs involved in promoting savings and credit SHGs in 11 states of the country.

As per a NABARD report (1995) the scheme on SHGs was made applicable to RRBs and co-operative banks of the country in 1993 and in April'96, RBI advised the banks that lending to SHGs should be considered as an additional segment under priority sector advances and it be integrated with mainstream normal credit operation. Rao & Dasgupta (1999) have commented that the SHG-bank linkage programmer has gained considerable movement in southern region of the country, though the northern states too are also now catching up fast and an overwhelming (78%) of the listed SHGs are Women Self Help Groups (SHG's), that is the SHGs which constitute of only women members (Rao and Dasgupta, 1999). Since the inceptions of NABARD promoted SHG linkage programme there has been an appreciable increase both in formation of SHG and their linkage with the banks.

The concept and importance of SHGs has been accepted and adopted by policy makers and they will form the backbone of rural poverty alleviation strategies, implemented by Government of India.

In the context of Eastern U.P. There are many programmes run by Government to poverty alleviation .SHGs Based Micro credit Model is one of the renowned programme. Since last two decades there are million of SHGs formed under the programmed of Micro credit by government and non government sector. Through primary data this paper highlight what is ultimate impact on People of Eastern Uttar Pradesh, in each perspective of SHGs.

## II. OBJECTIVES OF STUDY

This article will examine the Impact and role of Self Help Groups in enabling women's access to credit in Eastern U.P. The study will identify key sociological and economical issue, which affects the formation of SHGs and their credit linkage–what leads to their successful /failure .It will focus on the linkage between SHGs, microfinance, poverty reduction and women's empowerment .It will also examine the impact of SHGs on Poverty Reduction and Women's empowerment.

## III. HYPOTHESIS

Following hypotheses have been empirically tested:
  a) SHG's are playing crucial role in channelization of institutional credit to rural poor women;
  b) SHG's have direct bearing on socio-economic empowerment of poor women'

c) A number of NGO's, voluntary organizations and government agencies are involved in promotion of SHG's to ensure institutional credit to poor rural women;

d) The functioning of SHG's is not up to the desired satisfaction level due to various socio-cultural factors;

e) Capacity building for strengthening SHG's is beyond satisfaction;

f) There is large scope for promotion of SHG's to ensure participatory development and people-centered and decentralized governance.

## IV. RESEARCH DESIGN

Present study is empirical in nature based on mainly primary data collected through field survey. The field survey has been carried out in Uttar Pradesh and  The coverage of area and sample is shown in Table 1.1. Total 3 districts viz. Gorakhpur (Eastern U.P.), Basti (Eastern U.P.) Siddharthnagar (Eastern U.P.) were selected. Four blocks in each selected district were further identified randomly

hile in each selected block four scheduled caste populated villages were randomly selected. In each selected village, two SHG's were selected, however, in the absence of SHG's in the village, number of SHG's in larger villages has been increased to meet the target. Total of 96 SHG's and 480 members of SHG's were randomly selected for field survey. Different sets of questionnaires were made for SHG's members, representatives of NGO's or SHG's promoters and bank officials. The  questionnaires pertained to the relevant questions, scales of view  point and issues related to literacy, level of participation in decision making, awareness regarding rights, entitlements and development programmes, owning of resources, health and sanitation, girl child education, nutrition, attention towards family income, family planning and accessibility to institutional credit etc. The filled in schedules and questionnaires were thoroughly checked and edited. The data has been tabulated to draw out inference, trends, patterns and conclusions. The policy measures are based on critical appreciation of pertinent literature and analysis of research findings.

**Table:-1.1**

| DISTRICT | No. of Villages | Sample | | Development Functionaries | | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| | | SHG Group | Beneficiary | Dev. Officers | NGO Promo-ter | Rural Elites | Bank Officers |
| Gorakhpur | 21 | 32 | 160 | 3 | 6 | 10 | 4 |
| Basti | 16 | 32 | 160 | 4 | 4 | 15 | 4 |
| Siddharthnagar | 20 | 32 | 160 | 8 | 2 | 14 | 4 |
| TOTAL | 57 | 96 | 480 | 15 | 12 | 39 | 12 |

Micro-finance interventions are well-recognized world over, as an effective tool for poverty alleviation and improving socio- economic conditions of the poor. In India too, micro-finance is making head way in its efforts for reducing poverty and empowering women in particular. The impact of micro-finance programme through SHG's has been effective in making positive social change to all members, irrespective of the direct borrowers of the micro-credit. Importantly, in the rural context, the SHG's have facilitated the poor, especially the women to overcome the existing constraints grappling the formal credit institutions. These groups provide considerable social protection and income opportunities to the members. The SHG's have acquired a prominent status in maximizing social   and financial returns. The promotion of  income  generation activities for the poor rural women  is  perceived as a powerful  medium to resolve   several socio-economic   problems   such as reduction in poverty,  provision of goods and services

appropriate  to local needs, redistribution of income and opportunities in the community etc. Socio-economic Conditions of Beneficiaries: Age, education, caste, religion, marital status, family income, housing conditions etc. are some of the important  variables that affect women  in their  empowerment and development. Most of  the surveyed beneficiaries  were belonging to age group of 26-35 years (41.66 percent) and 36-45  years (36.04 percent).  Thus, making a majority of to middle age group (Table 7.1). the surveyed beneficiaries were belonging to age group of 26-35 years (41.66 percent) and 36-45  years (36.04 percent).  Thus, making a majority of to middle age group (Table 1.2)

**Table No. 1.2**
**Age Group of Beneficiaries**

| Age | Gorakhpur | Basti | Siddharth-nagar | Total |
|---|---|---|---|---|
| < 25 year | 12 [7.50] | 9 [5.63] | 13 [8.13] | 34 [7.08] |
| 26-35 year | 55 [34.38] | 81 [50.63] | 64 [40.00] | 200 [41.66] |
| 36-45 year | 63 [39.38] | 54 [33.75] | 56 [35.00] | 173 [36.04] |
| 46 to above | 30 [18.75] | 16 [10.00] | 27 [16.88] | 73 [15.21] |
| N. | 160 | 160 | 160 | 480 |

*Source: Field Survey*
* Figures given in brackets indicates percentage
Knowledge and awareness regarding SHG's activities are shown in Table 1.3

**Table No. 1.3**
**Awareness Of SHG's Activity**

| | Gorakhpur | Basti | Siddharth-nagar | Total |
|---|---|---|---|---|
| Meeting Calendar | 141 [88.12] | 100 [62.50] | 133 [83.13] | 374 [77.91] |
| Rules & Regulation | 116 [72.50] | 85 [53.13] | 122 [76.25] | 323 [67.29] |
| Information in Group Records | 122 [76.25] | 85 [53.13] | 120 [75.00] | 327 [68.12] |
| Cash in Hand | 125 [78.13] | 141 [88.13] | 140 [87.50] | 406 [84.58] |
| Balance in Bank | 160 [100.00] | 143 [89.38] | 160 [100.00] | 463 [96.45] |
| Outstanding Loan | 132 [82.50] | 110 [68.75] | 155 [96.88] | 397 [82.70] |
| Total Capital of the Group | 151 [94.37] | 146 [91.25] | 141 [88.12] | 438 [91.25] |
| Savings of Group | 150 [93.75] | 110 [68.75] | 150 [93.75] | 410 [85.41] |
| Total Loaning of The Group | 141 [88.13] | 160 [100.00] | 139 [86.88] | 440 [91.66] |
| Number of Member Taken Loan | 145 [90.63] | 160 [100.00] | 141 [88.13] | 446 [92.92] |
| Number of Member Repaid Loan | 135 [84.37] | 150 [93.75] | 111 [69.38] | 396 [82.50] |

| | | | | |
|---|---|---|---|---|
| Name of Bank | 154 [96.25] | 160 [100.00] | 147 [91.88] | 461 [96.04] |
| Income of Group | 160 [100.00] | 160 [100.00] | 157 [98.13] | 477 [99.37] |
| Objective of Group | 136 [85.00] | 125 [78.13] | 127 [79.38] | 388 [80.83] |
| Achievements of Group | 111 [69.38] | 110 [68.75] | 145 [90.63] | 366 [76.25] |
| Constraints of Group | 149 [93.13] | 140 [87.50] | 130 [81.25] | 419 [87.29] |
| Others | | | | 130 [27.08] |
| N. | 160 | 160 | 160 | 480 |

*Source: Field Survey*

* Figures given in brackets indicates percentage

The issues like cash in hand, balance in bank, savings of group, number of member who have taken loans, name of bank, group income, total capital of group etc. are well known to the majority of the members of group. However, awareness regarding constraints of groups, Meetings calendar, rules and regulation, group records, objectives of groups etc. has been recorded low. There has been nominal linkage in the saving rate of members. The significant increase in savings has been recorded in , Gorakhpur . (Table 1.4).

Table No. 1.4
Saving Rate of Respondents

| | Rs. | Gorakhpur | Basti | Siddharth-nagar | Total |
|---|---|---|---|---|---|
| Present | Below 50 | 130 [81.25] | 90 [56.25] | 30 [18.75] | 250 [52.08] |
| | 50-100 | 30 [18.75] | 65 [40.62] | 130 [81.25] | 195 [40.62] |
| | 101-200 | | 5 [3.13] | | 5 [1.04] |
| | 201 to above | | | | |
| Initial | Below 50 | 135 [84.38] | 90 [56.25] | 20 [12.50] | 245 [51.04] |
| | 50-100 | 25 [15.63] | 65 [40.62] | 120 [75.00] | 210 [43.75] |
| | 100-200 | | 5 [3.13] | 20 [12.50] | 25 [5.20] |
| | 200 to above | | | | |
| | N. | 160 | 160 | 160 | 480 |

*Source: Field Survey*

* Figures given in brackets indicates percentage

Importantly, there has been increase of 0.34 percentage points and 3.1 percentage points in the savings amount of Rs. below 50 and Rs. 50 to 100 categories during the initial and present stage. The respondents were asked to reveal the important purposes of savings.   The prominent factors reported were self- respect, emergencies, medical, social security, agricultural operations, festivals, marriages, education of children etc. The most important purpose among the factors was cited for was found to be self-respect (100%) of the women (Table 1.5).

Table No. 1.5

Purpose of Savings

|  | Gorakhpur | Basti | Siddharth-nagar | Total |
|---|---|---|---|---|
| Social Security | 160 [100.00] | 126 [78.75] | 156 [97.50] | 442 [92.08] |
| Food Security | 102 [63.75] | 66 [41.25] | 120 [75.00] | 288 [60.00] |
| Education | 123 [76.88] | 123 [76.88] | 119 [74.38] | 365 [76.04] |
| Medical | 160 [100.00] | 160 [100.00] | 154 [96.25] | 474 [98.75] |
| Marriage | 112 [70.00] | 135 [84.38] | 108 [67.50] | 355 [73.95] |
| Festivals | 160 [100.00] | 100 [62.50] | 142 [88.75] | 402 [83.75] |
| Emergencies | 160 [100.00] | 160 [100.00] | 160 [100.00] | 480 [100.00] |
| Agriculture | 117 [73.13] | 120 [75.00] | 144 [90.00] | 381 [79.37] |
| Asset Building | 107 [66.88] | 75 [46.86] | 117 [73.13] | 299 [62.29] |
| Self Respect | 160 [100.00] | 160 [100.00] | 160 [100.00] | 480 [100.00] |
| N. | 160 | 160 | 160 | 480 |

*Source: Field Survey*
* Figures given in brackets indicates percentage

Age wise savings amount of the respondents has been shown in Table 1.6  In the low age group, savings have been reported higher while in middle age group, they are lower. Significantly, savings in the nuclear families are higher as compared to joint families. It is because of the fact that the joint families require more funds to maintain and sustain them (Table 1.6)

Table No. 1.6
Age Group wise Savings Amount

| Age | Less than 500 | 501 – 1000 | 1001 – 1500 | 1501 – 2000 | 2001 – 2500 | 2501 – 3000 | 3000 to above | Total |
|---|---|---|---|---|---|---|---|---|
| Less than 25 years | 4 [3.44] | 6 [4.25] | 4 [4.34] | 4 [8.50] | 5 [29.41] | 12 [46.54] | 11 [26.82] | 46 [9.58] |
| 26-35 years | 67 [57.75] | 79 [56.08] | 32 [34.78] | 14 [29.78] | 2 [11.76] | 2 [7.6] | 9 [21.95] | 205 [42.70] |
| 36-45 years | 42 [36.20] | 53 [37.58] | 43 [46.73] | 16 [34.04] | 3 [17.64] | 4 [15.38] | 13 [31..70] | 174 [36.25] |
| 46 to above | 3 [2.58] | 3 [2.12] | 13 [14.13] | 13 [27.66] | 7 [441.17] | 8 [30.76] | 8 [19.51] | 55 [11.45] |
| N. | 116 | 141 | 92 | 47 | 17 | 26 | 41 | 480 |

*Source: Field Survey*
*Figures given in brackets indicates percentage

Table No. 1.7
Type of Family and Savings Amount

| | Less than 500 | 501 – 1000 | 1001 – 1500 | 1501 – 2000 | 2001 – 2500 | 2501 – 3000 | 3000 to above | Total |
|---|---|---|---|---|---|---|---|---|
| Nuclear | 80 [68.96] | 122 [86.52] | 73 [79.34] | 32 [68.08] | 11 [64.70] | 12 [46.67] | 17 [41.15] | 347 [72.29] |
| Joint | 36 [31.04] | 19 [13.47] | 19 [20..65] | 15 [31.91] | 6 [35.29] | 14 [53.33] | 24 [58.53] | 133 [27.70] |
| N. | 116 | 141 | 92 | 47 | 17 | 26 | 41 | 480 |

*Source: Field Survey*
* Figures given in brackets indicates percentage
Significantly, the women members who are employed are saving more as compared to women who are labour or housewives (Table 1.8).

Table No. 1.8
Employment wise Savings Amount

| Employment | Less than 500 | 501 – 1000 | 1001 – 1500 | 1501 – 2000 | 2001 – 2500 | 2501 – 3000 | 3000 to above | Total |
|---|---|---|---|---|---|---|---|---|
| Housewife | 57 [49.13] | 32 [22.69] | 7 [7.60] | 19 [40.42] | 6 [35.28] | 5 [19.23] | 3 [25.00] | 129 [26.88] |
| Employment | 3 [2.58] | 9 [6.38] | 4 [4.34] | 5 [10.63] | 8 [47.05] | 9 [34.61] | 15 [36.58] | 53 [11.04] |
| Self Employment | 36 [31.03] | 57 [40..42] | 49 [53.26] | 16 [34.04] | 1 [5.88] | 9 [34.61] | 9 [21.95] | 177 [36.87] |
| Professional | | | | | | | 2 [4.87] | 2 [0.41] |
| Labour | 20 [17.24] | 43 [30..49] | 32 [34.78] | 7 [14.89] | 2 [11.76] | 3 [11.53] | 12 [29.26] | 119 [24.79] |
| N. | 116 | 141 | 92 | 47 | 17 | 26 | 41 | 480 |

*Source: Field Survey*
\* Figures given in brackets indicates percentage
Again, the savings have been reported high in case of high income group families and they are low in case of respondents belonging to low income group families (Table 1.9).

Table No. 1.9
Income wise Savings Amount of Beneficiaries

| Income (Rs.) | Less than 500 | 501 – 1000 | 1001 – 1500 | 1501 – 2000 | 2001 – 2500 | 2501 – 3000 | 3000 to above | Total |
|---|---|---|---|---|---|---|---|---|
| Below 10000 | 26 [22.41] | 16 [11.34] | 19 [20.65] | 8 [17.02] | 1 [5.88] | 7 [26.92] | 3 [7.31] | 80 [16.66] |
| 10000 – 15000 | 7 [6.03] | 26 [18.43] | 21 [22.82] | 11 [23.40] | 3 [17.64] | 5 [19.23] | 4 [9.75] | 77 [16.04] |
| 15000 – 20000 | 30 [25..86] | 32 [22.69] | 6 [6.52] | 9 [19.14] | 2 [11.76] | 2 [7.69] | 9 [21.95] | 90 [18.75] |
| 20000 – 30000 | 47 [40.51] | 50 [35.45] | 12 [13.04] | 11 [23.40] | 1 [5.88] | 1 [3.84] | 5 [12.19] | 127 [24.45] |
| 30000 above | 6 [5.17] | 17 [12.05] | 34 [36.95] | 8 [17.02] | 10 [58.82] | 11 [42.30] | 20 [48.78] | 106 [22..08] |
| N. | 116 | 141 | 92 | 47 | 17 | 26 | 41 | 480 |

*Source: Field Survey*
\* Figures given in brackets indicates percentage
Importantly, high savings were reported among the educated respondents as compared to low educated respondents (Table 1.10).

Table No. 1.10
Education wise Savings Amount

| Education | Less than 500 | 501 – 1000 | 1001 – 1500 | 1501 – 2000 | 2001 – 2500 | 2501 – 3000 | 3000 to above | Total |
|---|---|---|---|---|---|---|---|---|
| Illiterate | 76 [65.52] | 44 [31.20] | 13 [14.13] | 4 [8.5] | 2 [11.760] | | 1 [2.43] | 140 [29.16] |
| Literate | 7 [6.03] | 57 [40.42] | 39 [42.39] | 13 [27.65] | 1 [5.88] | 2 [7.69] | 4 [9.75] | 123 [25.62] |
| Primary | 7 [6.03] | 15 [10.63] | 16 [17.39] | 9 [19.14] | 1 [5.88] | 3 [11.53] | 4 [9.75] | 55 [11.45] |
| Middle Class | 16 [13.79] | 22 [15.60] | 13 [14.13] | 8 [17.02] | 2 [11.76] | 9 [34.61] | 4 [9.75] | 74 [15..41] |
| High School | 8 [6.90] | 2 [1.41] | 8 [8.69] | 10 [21.27] | 4 [23.52] | 7 [26.92] | 5 [12..19] | 44 [09.16] |
| Intermediate | 2 [1..72] | 1 [0..70] | 2 [2.17] | 2 [4.25] | 4 [23.52] | 3 [11.53] | 11 [26.82] | 25 [5.20] |
| Graduation | | | 1 [1.08] | 1 [1.82] | 2 [11.76] | 1 [3.84] | 9 [21.95] | 14 [2.91] |
| Post Graduation | | | | | 1 [5.88] | 1 [3.84] | 3 [7.31] | 5 [1.04] |
| N. | 116 | 141 | 92 | 47 | 17 | 26 | 41 | 480 |

Source: Field Survey
* Figures given in brackets indicates percentage

Women are forced to take up low income, low productive occupations because of structured constraints. They also face some other constraints in their work. They are also considered as poor credit risks by the financial institutions. As women do not have any land, property or assets in their name, they are not able to produce the required papers for access to formal credit. Also, they tend to engage in small scale activities, which often do not qualify for formal credit. These activities suffer from poor productivity, poor market performance and poor business management. Women's illiteracy, their lack of experience in public life and low mobility, make it difficult for them to access credit. One of the objectives of the credit for empowerment approach entails building capabilities of the group to increase the credit absorption and the sustainable livelihood. This approach assumes that women would be empowered by resending their economic problem in society. However, developing entrepreneurship, especially among rural women's pose challenges. Rural women face strong cultural barriers that often restrict them to their homes and limit their mobility. There are a number of other obstacles for women entrepreneurship, especially in the rural context. Women with their low levels of education, little bit of training and entrepreneurship almost non-existence of exposure to business and a strong fear of failure would like to take the plunge. Women's business is different from those of men. Women tend to pursue business strategies that weigh household maintenance and risk reduction heavier than men. They also tend to give less emphasis to enterprise growth, preferring to invest profits in their families than in expanding their enterprises. However, SHG's approach has enabled rural women to avail the credit and its effective utilization for promoting sustainable livelihood and earnings.

The majority of the respondents have received internal loan, bank loan, as well as cash credit facility. Only, more than one fourth respondents have repaid their dues while rest is supposed to repay their dues. The proportion of respondents, who have to pay their dues, has been reported high in Basti, (Table 1.11).

Table No. 1.11
Amount of Internal Loaning

| Average (Rs.) | Gorakhpur | Basti | Siddharth-nagar | Total |
|---|---|---|---|---|
| Internal Loaning | 160 [100.00] | 160 [100.00] | 160 [100.00] | 480 [100] |
| Bank Loaning | 160 [100.00] | 160 [100.00] | 160 [100.00] | 480 [100] |
| Revolving Fund | 160 [100.00] | 160 [100.00] | 160 [100.00] | 480 [100] |
| Repayment | 42 [26.25] | 40 [25.00] | 48 [30.00] | 130 [27.08] |
| Balanced | 118 [73.75] | 120 [75.00] | 112 [70.00] | 350 [72.92] |
| N. | 160 | 160 | 160 | 480 |

*Source: Field Survey*
* Figures given in brackets indicates percentage

Main purpose of loaning is given in Table 1.12 Consumption loan dominates over the micro-financing. Emergency expenses accounted second major purpose of loaning. The proportion of consumption loan has been recorded highest in Basti, while that of emergency needs high in almost all the districts. The constructive purpose of micro-financing has been reported higher in Basti (Table 1.12).

Table No. 1.12
Purpose Of Loaning

| | Gorakhpur | Basti | Siddharth-nagar | Total |
|---|---|---|---|---|
| Consumption | 120 [75.00] | 150 [93.75] | 135 [84.38] | 405 [84.37] |
| Agriculture | 100 [62.50] | 105 [65.62] | 70 [43.75] | 275 [57.29] |
| Animal Husbandry | 90 [56.25] | 90 [56.25] | 80 [50.00] | 260 [54.16] |
| Income Generating Activity | 80 [52.50] | 75 [46.88] | 50 [31.25] | 205 [42.70] |
| Asset Building | 25 [15.63] | 10 [6.25] | 15 [9.38] | 50 [10.41] |
| Emergencies | 160 [100.00] | 160 [100.00] | 160 [100.00] | 480 [100.00] |
| Others | 100 [62.50] | 90 [56.25] | 90 [56.25] | 280 [58.33] |
| N. | 160 | 160 | 160 | 480 |

*Source: Field Survey*
* Figures given in brackets indicates percentage
The status of balance amount to be paid is shown in Table 1.13

Table No. 1.13
Balance Amount to Be Paid

| Rs. | Gorakhpur | Basti | Siddharth-nagar | Total |
|---|---|---|---|---|
| Less than 500 | 45 [28.13] | 20 [12.50] | | 65 [13.54] |
| 501 – 1000 | 80 [50.00] | 40 [25.00] | 25 [15.63] | 145 [30.20] |
| 1001 – 1500 | 15 [9.38] | 50 [31.25] | 35 [21.88] | 100 [20.83] |
| 1501- 2000 | 10 [6.25] | 40 [25.00] | 15 [9.38] | 65 [13.54] |
| 2001 – 2500 | 5 [3.13] | | 5 [3.13] | 10 [2.08] |
| 2501 – 3000 | | | 25 [15.63] | 25 [5.20] |
| 3001 to above | 5 [3.13] | 10 [6.25] | 55 [34.38] | 70 [14.58] |
| N. | 160 | 160 | 160 | 480 |

*Source: Field Survey*
* Figures given in brackets indicates percentage
Most of the respondents reported that they have to pay dues up to Rs. 1000 (53.57 percent), while only a small proportion has to repay heavy dues. The respondents were asked regarding receiving of benefits from development programmes. Only 31 percent of them reported that they availed benefits. It was reported to be highest in Basti while in majority of the cases women members could not get any benefit from development programmes (Table 1.14).

Table No. 1.14
Whether Received Benefits From Govt. Schemes

| | Gorakhpur | Basti | Siddharth-nagar | Total |
|---|---|---|---|---|
| Yes | 45 [28.13] | 50 [31.25] | 25 [15.62] | 120 [25] |
| No | 115 [71.88] | 110 [68.75] | 135 [84.38] | 360 [75.00] |
| N. | 160 | 160 | 160 | 480 |

*Source: Field Survey*
* Figures given in brackets indicates percentage
The socio-economic conditions of members have improved since joining the groups. The positive changes have been reported in case of awareness regarding nutrition, health, hygiene, family planning, decision making related to money centered, interaction with outsiders, mobility, educational development, access to health services, family income etc. (Table 1.15).

Table No. 1.15
Changes on Socio-economic Status After Joining SHG

| | Same | Increased | Decreased | Deterio-rated | N |
|---|---|---|---|---|---|
| Mobility | 257 [53.54] | 219 [45.62] | 4 [0.83] | | 480 |
| Recognition in Family | 345 [71.88] | 129 [26..87] | 6 [1.25] | | 480 |
| Recognition in Community | 386 [80..41] | 86 [17.91] | 8 [1.66] | | 480 |
| Interaction With Outsiders | 137 [28.54] | 343 [71.45] | | | 480 |
| Literacy/ Education | 193 [40..20] | 275 [57.29] | | 12 [2.50] | 480 |
| Access To Health Services | 60 [12.50] | 420 [87.50] | | | 480 |
| Access To Immunization | 58 [12.05] | 422 [87.92] | | | 480 |
| Access To Sanitation Facility | 429 [89.37] | 43 [8.95] | | 8 [1.66] | 480 |
| Access To Credit Sources | 343 [71.45] | 129 [26.87] | | 8 [1.66] | 480 |
| Asset Building | 309 [64..37] | 171 [35.62] | | | 480 |
| Family Income | 43 [8.95] | 437 [91.04] | | | 480 |
| Skills | 424[88.33] | 56 [11.66] | | | 480 |
| Voicing Concern | 296 [61.66] | 180 [37.50] | | 4 [0.83] | 480 |
| Nutrition Awareness | 122 [25.41] | 344 [71.66 | | 14 [2.91] | 480 |
| Family Planning Awareness | 141[29.37] | 315 [65.62] | 11 [2.29] | 13[2..70] | 480 |
| Child Development Awareness | 480[100.00] | | | | 480 |
| Health Awareness | | 480 [100.00] | | | 480 |
| Decision Making Related To Child Development | 422 [87.91] | 58 [12.08] | | | 480 |
| Decision Making Related To Money | 65 [13.54] | 401 [83.54] | 3 [0.62] | 11 [2.29] | 480 |
| Participation In Development Programme | 287[59.79) | 193 [40.20] | | | 480 |
| Individual Income | | 480 [100.00] | | | 480 |
| Others | 193 [40..20] | 264 [55.00] | 13 [2..70] | 10 [2.08] | 480 |

Source: Field Survey
* Figures given in brackets indicates percentage

The SHG's have enabled women in attitudinal change of the community towards SHG's a well as its members. Members interact with other members for experience sharing and exposure (Table 1.16).

Table No. 1.16
Interaction of Group Members With Other Groups

|  | Gorakhpur | Basti | Siddharth-nagar | Total |
|---|---|---|---|---|
| Yes | 140 [87.50] | 125 [78.13] | 130 [81.25] | 395 [82.29] |
| No | 20 [12.50] | 35 [21.88] | 30 [18.75] | 85 [17.70] |
| N. | 160 | 160 | 160 | 480 |

*Source: Field Survey*
* Figures given in brackets indicates percentage

Again, SHG's have created positive attitude of community towards functioning of SHG's, micro-financing as well as being effective on social problems (Table 1.17).

**Table No. 1.17**
**Perception of Community Towards SHG's**

|  | Gorakhpur | Basti | Siddharth-nagar | Total |
|---|---|---|---|---|
| Well Organized Family | 160 [100.00] | 82 [51.25] | 150 [93.75] | 392 [81.67] |
| Good Relationship With Their Husband | 100 [62.50] | 44 [27.50] | 109 [68.13] | 253 [52.70] |
| Check On Alcoholism | 68 [42.50] | 4 [2.50] | 79 [49.38] | 151 [31.45] |
| Control Our Saving | 160 [100.00] | 160 [100.00] | 160 [100.00] | 480 [100.00] |
| Self Confidence | 160 [100.00] | 160 [100.00] | 160 [100.00] | 480 [100.00] |
| Awareness | 160 [100.00] | 160 [100.00] | 160 [100.00] | 480 [100.00] |
| Others |  | 30 [18.75] |  | 30 [6.25] |
| N. | 160 | 160 | 160 | 480 |

Source: Field Survey
* Figures given in brackets indicates percentage

Under the empowerment approach to micro-financing and particularly micro enterprises promotion, economic interventions are taken as part of a wider process. The need to facilitate the growth of non-farm economy in rural areas has been strongly felt. This would be possible only when agricultural growth becomes more dynamic and vibrant. It would provide the inputs for processing both food and cash crops, demand inputs and services from the local economy and generate economic surpluses, which would convert into demand for all kinds of consumer goods and services. There is also need to establish support mechanism for women managed micro enterprises. There are essentially two major aspects to this (i) mobilization of investment funds and (ii) provision of business management and technical support services to SHG's members. Significantly, marketing has been identified as one of the major weaknesses of micro enterprises. SHG's and NGO's have always given more priority and importance to production and less to marketing. Rural enterprises also suffer from low capitalization. Monitoring and evaluation are increasingly being recognized as indispensable tools of project management. Evaluations are progressively being replaced with impact assessment, which gives greater focus on the outcomes of the interventions, rather than inputs and

outputs. The analysis simply demonstrates that SHG's have created conducive environment for growth and development of micro enterprises, meeting out the credit and training needs to its members, convergence with government programmes and overall empowerment of its members in terms of improved socio-economic status, income and earnings, mobility and confidence building to sustain and manage business on their own.

## V. CONCLUSIONS

Micro-finance interventions are well-recognized world over as an effective tool for poverty alleviation and improving socio- economic status of rural poor. In India too, micro-finance is making headway in its effort for reducing poverty and empowering rural women. Micro-finance through the network of cooperatives, commercial banks, regional rural banks, NABARD and NGO's has been largely a supply driven recent approach. Micro-finance institutions are other than banks which are engaged in providing financial services to the poor. There are three types of lending technologies:

(i) The document based and asset based conventional technology, which is followed by almost all existing banks.

(ii) The group lending technology, which comes in various shapes and forms having its own advantages as well as drawbacks.

(iii) Individual based lending technology is one where the Micro-finance institutions have to be very careful in assessing the repayments capacity of the borrowers. In fact, a major innovations in this area is that the MFI's have to train loan officers to assess the repayment capacity of the potential borrowers. The above technologies are focused on micro-finance through SHG's, however, credit accessibility to poor through SHG's has been enhanced tremendously and the recovery has become comparatively higher.

Rural women play a significant role in the domestic and socio-economic life of the society and therefore, holistic national development is not possible without developing this segment of the society. The review of studies related to credit accessibility to women simply demonstrates that the direct access to institutional credit to rural women is very limited and suffers from the sex bias in extending it to them. However, women from the non-farm sector have better access to banks than the women working in the farm sector. Even, male members of women borrowers have greater influence on accessibility to credit utilization and its repayment.

The SHG's became a regular component of the Indian financial system since 1996. The SHG's are small, informal and homogenous groups. These groups have proved as cyclic agents of development in both the rural and urban areas. The SHG's after being formed started collecting a fixed amount of thrift from each member regularly. After accumulating a reasonable amount of resources, the group starts lending to its members for pretty consumption needs. If the bank is satisfied with the group in terms of (i) genuineness of demand for credit; (ii) credit handling capacity of the members; (iii) repayment behaviour

within the groups; and (iv) the accounting system and maintenance of the records, it extends a term loan of smaller amount to the group.

Thus, financing through SHG's effects quite a few benefits viz; (i) savings mobilized by the poor; (ii) access to the required amount of appropriate credit by the poor; (iii) meeting the demand and supply of credit structure and opening of new market for financing institutions; (iv) reduction in transaction cost for both lenders and borrowers; (v) tremendous improvement in recovery; (vi) heralding a new realization of subsidy-less and corruption-less credit; and (vii) remarkable empowerment of poor women. The strengths of SHG's may be categorized in the following manner:

Groups members usually create a common fund by contributing their small savings on a regular basis; groups manage pooled resources in a democratic way; considers loan requests; and loans are disbursed by purposes. The rates of interest vary from group to group higher than that of banks but lower than that of moneylenders.

The average deposit and loan size of SHG account is larger than individual accounts under the priority sector, bank transaction of cost of dealing with SHG's is obviously lower than that of individual borrowers; the rate of growth of credit absorption of SHG's is much higher than individual borrowers under the priority sector.

- Banks can reduce the operating costs of forming and financing of SHG's, involving NGO's or youths for their forming and nurturing.

- The innovative forms of financing is imperative to supplement credit strategies for meeting the needs of the poor by combining the flexibility, sensitivity and responsiveness of the informal credit system with the technical and administrative capabilities and financial resources of formal financial institutions and also to build material trust and confidence between bankers and the rural poor and to encourage banking in a segment of population that formal financial institutions usually find difficult to reach.

- The entire process of internal savings and credit is backed by financial and management counseling, promotion of new avenues of employment and motivation for enhancement of earnings from the ongoing activities.

- The groups develop their own management system and accountability for handling the resources generated. The interaction among the members in based on participatory mechanism is terms of decision-making.

- Small savings of rural women can generate the required resources, which can wean the people away from the exploitation of moneylenders. Thus, the voluntary savings constitute the key for economic progress. Promotion of SHG's can bring women into the mainstream of economic development. Credit through SHG's is being

regarded more suitable by banks and NGO's since creditability of SHG's regarding utilization and Recovery is praiseworthy.

- Credit accessibility through SHG's is cost effective and group approach can ensure wider coverage of poor families through bank credit, even the members of the group learn to interdisciplinary approach the banks adopt to deal.
- SHG's can create a unique, alternative need based credit delivery mechanism by pooling their meager resources for catering to their consumption and production requirements.

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# Evaluation of The Impact Of Urban Expansion On Surface Temperature Variations Using Remote Sensing-Gis Approach

A. A. Zemba[1] A. A. Adebayo[2] A. A. Musa[3]

*Abstract*-Jimeta has experienced a rapid urban expansion over the past three decades due to population explosion and accelerated economic growth. This paper reports an investigation into the application of the integration of remote sensing and geographic information systems (GIS) for detection urban growth and assessing its impact on surface temperature. Remote sensing techniques were utilized to carry out land use/cover change detection by using multi-temporal Landsat Thematic Mapper data. Urban growth patterns were analyzed by using a GIS-based modeling approach. The integration of remote sensing and GIS was further applied to examine the impact of urban growth on surface temperatures. The results revealed a notable and uneven urban growth in the study area. This urban development had raised surface radiant temperature by 90C from 1986 to 2008 in the urbanized area. The integration of remote sensing and GIS was found to be effective in monitoring and analyzing urban growth patterns, and in evaluating urbanization impact on surface temperature.

*Keywords*- Surface temperature, remote sensing, GIS, urban expansion, Jimeta.

## I. INTRODUCTION

Land covers constitute the biophysical state of the earth's surface and immediate subsurface and they serve as sources and sinks for most of the materials and energy movements and interactions between the earth spheres. Changes in land-cover include changes in biotic diversity, actual and potential primary productivity, soil quality, runoff, and sedimentation rates (Steffen et al, 1992 in Weng, 2001), and cannot be well understood without the knowledge of land-use change, which plays a greater role in deriving them. Therefore, land-use and land-cover changes have environmental implications at local and regional levels, and of course, are linked to the global environmental processes. Because of the interrelated nature of the elements of the natural environment, the direct effects on one element may cause indirect effects on others.

Urbanization, the conversion of other types of land to uses associated with growth of populations and economy, is a main type of land-use and land-cover change in human history. The rate of urbanization (growth in population and physical structures) of most cities has been in the increase

Since the beginning of industrial revolution. For instance, at The beginning of the 20th Century, only 16 cities in the world had populations over one million; by the early 2000s there were over 400 (Stefanov et al, 2001a) and may be much higher today. This has a great impact on climate. In Nigeria, land-use and land-cover patterns have undergone a fundamental change due to accelerated population explosion and economic development under different economic policies of past governments. Urban growth has been speeded up, and extreme stress to the environment has occurred. This is particularly true in regions such as Jimeta-Yola area where massive agricultural land is disappearing each year, converting to urban or related uses. This is evident in areas like Saminaka and Jambutu where over 50% of the developed lands there used to be bushes and farmlands in about 2 decades ago. This involves the removal of natural land cover and the introduction of urban materials in form of clearance of natural vegetation; reclamation of swampy areas; construction of buildings, roads, and other concrete surfaces like parks and pools (Xu and Cheng, 2004). Hence, there is a continual replacement of the highly beneficial and pleasing rural green spaces and trees with bricks, concrete, and ejection of poisonous pollutants unto the atmosphere as city grows. This coupled with the social and technological sophistication of the contemporary world, lead to radical changes in the nature of the surface and atmospheric properties of cities. There are therefore, changes from precious, homogeneous countryside climate characterized by clear air and water to highly polluted, unpleasant, noisy, heterogeneous and unpredictable atmospheric conditions of urban areas as they grow. It is such deliberate and/or inadvertent modifications of the natural environment that result to the transformations of the radioactive, thermal, and aerodynamic characteristics of the city environment thereby altering the natural solar and hydrologic cascades of urban areas.

As stated earlier, Jimeta has reportedly been growing rapidly owing to favorable socio-economic, political, and physical factors. This growth became so pronounced when the city was accorded the status of a state and Local Government headquarters. Evaluating the magnitude and pattern of Jimeta's urban growth is an urgent need. This is to generate information that could help in tackling some of the problems that accompanied rapid urban growth. The goal of this study is therefore, to employ the integrated use of remote sensing and GIS in addressing environmental issues in Nigeria at a local level with a view to evaluating urban growth patterns

*Author[1&2]-Department of Geography, Federal University of Technology, Yola*
*(e-mail[1]-aazemba@yahoo.com, e-mail[2]-aaadebayo2002@yahoo.com)*
*Author[3]-Department of Surveying and Geoinformatics, Federal University of Technology, Yola*
*(e-mail[3]-aamusa_futy@yahoo.com)*

in Jimeta city and to analyze the impact of such growth on surface temperature. Specifically, the study investigate changes in land use and land cover, as a result of urban expansion over time (1986-2008) and how this relates to urban micro-climate.

## II.    STUDY AREA

The study area, Jimeta, is located between latitudes $9^0$ 10' to $9^0$ 15'N and longitudes $12^0$ 11' to $12^0$ 17'E. Jimeta, a twin city to Yola town, is the seat of Yola North Local Government Headquarters and Adamawa State capital of Nigeria. The area has a Sudan type of vegetation and a tropical climate marked by wet and dry seasons. The

minimum temperature recorded is about $15^0$C and a maximum of about 40 $^0$C. The city has been experiencing an increasing population explosion since it assumed a status of Adamawa State capital in 1976. Like any other Nigerian cities, Jimeta comprises of so many land use types ranging from institutional, commercial, and residential. The city is clearly stratified in terms of population densities (Ilesanmi, 1999). These are low, medium and high density areas. The low density areas are well planned units where government officials reside while medium and high density areas are made up of common people with little or unplanned buildings.



Fig 1: Map of the Study Area

In recent times, Jimeta has risen as the premier commercial, industrial and transportation urban area of the northeastern Nigeria. The rapid growth of Jimeta, particularly within the past 30 years, has made it one of the fastest growing metropolitan areas in Nigeria. The population of Jimeta

increased significantly by 69% between 1973 and 1991 and 58% between 1991 and 2006 (NPC 2006). Concomitant with this high rate of population growth has been an explosive growth in retail, educational, commercial and administrative services within the area. This has resulted in

tremendous land cover change dynamics within the metropolitan region, wherein urbanization has consumed vast acreages of land adjacent to the city proper and has pushed the urban fringe farther away from the original Jimeta urban core. An enormous transition of land from forest and agriculture to urban land uses has occurred in the area, the extent of which needs to be investigated for the sake of planning for the ever growing population.

### III.    MATERIALS AND METHODS

#### A.    *Land Use Land Cover Change (LULCC) Detection*

Landsat TM and ETM+ of 1986 and 2008 respectively constitute the data used in this research. With the aid of Erdas Imagine's histogram computation tools, each Landsat image was enhanced using histogram equalization (in order to gain a higher contrast in the peaks of the original histograms) to increase the volume of visible information. This procedure is important for helping identify ground control points in rectification. All the images are rectified to a common UTM coordinate system based on the 1:50,000 topographic maps of the study area. Each image was then radiometrically corrected using relative radiometric correction method. A supervised classification with maximum likelihood algorithm was conducted to classify the landsat images using bands 4, 3, and 2. The accuracy of the classification was verified by field-check. The change detection algorithm employed for detecting land use and cover change was image differencing. This is because image differencing is probably the most widely applied change detection algorithm (Singh, 1989 in Bottomley, 1999). Percentage Change In The Pixel Values Of Land Cover/Use Was Then Computed Using RASTER ATTRIBUTES/EDIT/COMPUTE STATISTICS Subroutine And Values Were Compared For The Periods Involved. A change matrix was produced with the help of Erdas Imagine software. Quantitative areal data of the overall land use/cover changes as well as gains and losses in each category between 1986 and 2008 were then compiled.

#### B.    *Urban Expansion Detection and Analysis*

The urban expansion images, which were obtained from image classification, was further overlaid with several geographic reference images to help analyze the patterns of urban expansion, including an image of city boundary, major roads, and urban centers. These layers were constructed in a vector GIS environment and converted into a raster format (grid size = 30m). The city boundary image was utilized to find urban land change information within the city. Because proximity to a certain object, such as roads, has important implication in urban land development, urban expansion processes often show an intimate relationship with distance from these geographic objects. Using the buffer functions in ArcGIS, a buffer image was generated, showing the proximity to the major roads of the study area. Ten buffer zones were created around a major road with a width of 500m. Local conditions have been taken into account in selecting these buffer widths. The buffer image was overlaid with the urban expansion image to calculate the amount of urban expansion in each zone. The density of urban expansion was then calculated by dividing the amount of urban expansion by the total amount of land in each buffer zone. Those values of density can be used to construct a distance decay function of urban expansion. In order to analyze the nature, rate and location of urban land change, an image of urban built-up land was extracted from each original land cover image. The extracted images were then overlaid and recoded to obtain an urban change (expansion) image.

#### C.    *Derivation and Detection of Changes in Land Surface Temperature.*

Urban development usually gives rise to a dramatic change of the Earth's surface, as natural vegetation is removed and replaced by non-evaporating and non-transpiring surfaces such as metal, asphalt and concrete. This alteration inevitably results in the redistribution of incoming solar radiation, and induces the urban-rural contrast in surface radiance and air temperature. To measure the surface temperature change from 1986 to 2008, surface radiant temperature were derived from radiometrically corrected TM, and ETM+ thermal infrared data (band 6). As known, the Landsat TM, and ETM+ sensors acquire the surface temperature data and store them as 8-bits Digital Numbers (DNs). In order to convert these DNs to temperature data, expressed in degrees Celsius, they were firstly converted to radiance values using the "gain" and "offset" values specific to the individual scenes and then radiance data were converted to the degrees Celsius using Landsat Project Science Office (2002) procedure.

*(i)Conversion of Digital Numbers (DNs) to Radiance values*

For the calculation of the radiance values of the TM data the following formula has been used:

$$Radiance = DN * Gain + Offset, \quad Where: \tag{1}$$

$$Gain = 0.05518$$

$$Offset = 1.2377996$$

Whereas for the calculation of the radiance of the ETM+ data the following formula was used:

$$Radiance = ((L_{MAX} - L_{MIN}) / (DN_{MAX} - DN_{MIN})) * (DN - DN_{MIN}) + L_{MIN}, where: \tag{2}$$

$$For\ band\ 6L \qquad and$$
$$For\ band\ 6H$$
$$L_{MAX} = 17.04$$
$$L_{MAX} = 12.65$$
$$L_{MIN} = 0.0$$
$$L_{MIN} = 3.2$$

$DN_{MAX} = 255$

$$DN_{MAX} = 255$$

$DN_{MIN} = 1$

$$DN_{MIN} = 1$$

The values for all these parameters were obtained from the data header files.

*(ii)Conversion of Radiance to Temperature (0C)*

After the calculation of the radiance values, the temperature values were derived using the inverse of Planck function, thus:

$$T_{(^{0}C)} = \left[ \frac{K_2}{L_n\{K_1 / CV_R + 1\}} \right] - 273 \qquad (3)$$

Where:

$T_{(^{0}C)}$ = Temperature in Degrees Celsius
$CV_R$ = Cell (pixel) value as radiance
$K_1$ = 607.76 (for TM) or 666.09 (for ETM and ETM+) in $mW\ cm^{-2}\ sr^{-1}\ \mu m^{-1}$
$K_2$ = 1260.56 (for TM) or 1282.71 (for ETM and ETM+) in Kelvin

In examining the spatial relationship between land use/cover types and the surface energy response as measured by surface temperature, a classified image of 1986 and 2008 were overlaid to the surface temperature images of corresponding years.

## IV. RESULTS

### A. Urban expansion of Jimeta

Results of image analysis showed that Jimeta city has experienced a series of drastic changes in its administrative boundaries. These changes affect the computation of urban built-up areas at different periods of time. The current city jurisdiction came into effect in 1996 as a result of the creation of Yola North Local Government Area with eleven political wards. These wards are Yelwa, Limawa, Ajiya, Alkalawa, Gwadabawa, Luggere, Demsawo, Jambutu, Nasarawo, Doubeli, and Karewa. It was discovered that Jimeta started growing faster as an urban centre from the middle of 1970s when Yola was made the headquarters of the defunct Gongola state in 1976. Even though Yola has been the nominal headquarters of Gongola and later Adamawa state, but virtually all the government offices and other official buildings are found in Jimeta. That is to say the actual seat of Adamawa state is in Jimeta. The city expanded from 33,133 hectares in 1986 to 51, 578 hectares in 2008. Most of the new developments took place in the suburbs as organized clusters for accommodating especially residential expansions, academic institutions, emerging settlements, warehouses, or external transportation facilities, in addition to rapid developments on the outskirts of the old city core. Karewa and parts of Gwadabawa were designated as Government Residential Areas (GRA) in the 1980s. This led to massive construction of offices and government quarters in these areas. New residential buildings quickly swelled up to reach these areas. By this time, new developments were mostly directed to the suburbs in order to contain the growth of the inner city.

The 1980s also witnessed a dramatic urban development in another area, in addition to the above. The reconstruction, expansion and upgrading of Yola airport to international status; buildings of Africola soft drinks factory in Kofare industrial area; establishment of Army Barracks to the west of Karewa; establishment of Federal College of Education, Yola in Karewa played greater role in shaping a modern Jimeta city. Office buildings, hotels, and recreational facilities, soon emerged and added to the attributes of modern Jimeta. New bridge (over River Benue) was constructed to provide a carriage-way across River Benue to the north, laying the foundation for future northern expansion. The urban and built-up areas grew even faster in the late 1980s, owing primarily to the development of commercial activities, especially the movement of the market from the present day shopping complex to its present site, after Maitasine raids in 1984. The Jimeta main market, which was relocated to the same area with the motor park, together had witnessed massive construction of shops, stalks and pavements. The relocation of this market led to the springing up of nearby settlements of Demsawo, Upper Luggere, and Nasarawo. Meanwhile, recent development had been tending towards western and southern axis of Jimeta.

By the late 1990s and early 2000s, Jimeta witnessed yet another significant expansion in terms of both land area and population. This is evident in areas like Jambutu, Saminaka, Jabbore, Wuro-Jabbe and Mayanka areas where various stages of land development have been taking place. Moreover, the land-use and land-cover maps derived from the Landsat images show that the urban and built-up area increased by 18, 445 hectares, or by 55.7% in the 22-year period (1986-2008). This indicates that other land cover types were massively converted to urban land use at an annual rate of 838.4 hectares. Overlying the urban land-use maps with a city boundary and major roads reveals that there has been a significant expansion in the size of Jimeta. If this trend continues, Jimeta will soon join Yola town to become a megacity.

### B. Land use and land cover change of Jimeta from 1986 to 2008

The result of urban expansion as presented in section 4.1 above is the changes in land use and land cover. In an effort to investigate the nature of these changes, Landsat satellite data were subjected to pixel-by-pixel classification. The overall accuracy of the classification of 1986 and 2008 images were found to be 84% and 88% respectively (Table 1 and 2). The accuracy values are corroborated by Kappa statistics of 82%, and 85% respectively for 1986 and 2008 data. The only source of error was that some built-up lands

were classified as bare surface while some croplands were classified as forest areas or forest areas as croplands; and some marshy lands were represented as water bodies and vice-versa. This is owing to similarities in their spectral characteristics. Clearly, these data have reasonably high accuracy, and thus are sufficient for urban growth detection. From Table 3, it is clear that there was a considerable change in the land use and land cover of the study area during the 22-year period (1986-2008). Four of the land cover types i.e. built-up land, cultivated land, bare surfaces, and marshy lands increased in area by 55.7%, 28%, 6.7%, and 0.7% respectively, while forest areas and water bodies decreased in area by 88.6% and 5.8% respectively. The subtraction of the 1986 from 2008 land use/cover map further reveals that of 55.7% increase in urban built-up land, over 80% resulted from cultivated land and bare surfaces.

**Table 1: Error Matrix of Land Use and Land Cover Map, 1986**

Reference data

| Class data | UC | BS | CL | FT | UB | ML | WB | RT | CT | PA(%) | UA(%) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| UC | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | -- | --- |
| BS | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 2 | 50.0 | 100.0 |
| CL | 0 | 0 | 17 | 1 | 1 | 0 | 0 | 18 | 19 | 89.5 | 94.4 |
| FT | 0 | 0 | 1 | 10 | 0 | 0 | 0 | 12 | 11 | 90.9 | 83.3 |
| UB | 0 | 0 | 0 | 1 | 9 | 0 | 0 | 11 | 10 | 90.0 | 81.8 |
| ML | 0 | 0 | 0 | 0 | 1 | 3 | 1 | 5 | 5 | 60.0 | 60.0 |
| WB | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 3 | 3 | 66.7 | 66.7 |
| Column Total | 0 | 1 | 18 | 12 | 11 | 5 | 3 | 50 | 50 | | |

Overall Accuracy = 84.0%
Kappa Statistics = 82.0%

Table 2: Error Matrix of Land Use and Land Cover Map, 2008

| | | | Reference data | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Class data | UC | BS | CL | FT | UB | ML | WB | RT | CT | PA(%) | UA(%) |
| UC | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | --- | --- |
| BS | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 3 | 33.3 | 100.0 |
| CL | 0 | 0 | 10 | 1 | 0 | 0 | 0 | 12 | 11 | 90.9 | 83.3 |
| FT | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 4 | 3 | 100.0 | 75.0 |
| UB | 1 | 0 | 1 | 0 | 21 | 0 | 0 | 22 | 23 | 91.3 | 95.5 |
| ML | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 5 | 4 | 100.0 | 80.0 |
| WB | 0 | 0 | 0 | 0 | 0 | 1 | 5 | 5 | 6 | 83.3 | 100.0 |
| Column Total | 1 | 1 | 12 | 4 | 22 | 5 | 5 | 50 | 50 | | |
| Overall Accuracy | | | = | 88.0% | | | | | | | |
| Kappa Statistics | | | = | 85.0% | | | | | | | |

UC = Unclassified; BS = Bare surface; CL = Croplands; FT = Forest trees; UB = Urban built-up; ML = Marshy lands; WB = Water bodies; RT = Reference total; CT = Classified total; PA = Producer's Accuracy; UA = User's Accuracy

**Table 3: Statistics of changes in LULC between 1986 and 2008**

| LULC type | Area in 1986 | Area in 2008 | Difference | % difference |
|---|---|---|---|---|
| Bare surface | 1,088 | 1,161 | 73 | 6.7 |
| Cropland | 66,124 | 84,616 | 18,492 | 28.0 |
| Forest | 41,226 | 4,703 | -36,523 | -88.6 |
| Marshy land | 7,978 | 8,030 | 52 | 0.7 |
| Urban land | 33,133 | 51,578 | 18,445 | 55.7 |
| Water bodies | 9,204 | 8,666 | -538 | -5.8 |



A: Classified Landsat 1986 of study Area

B: Classified Landsat 2008 of study Area

Class_Names
Bare surface
Built-up area
Croplands
Forest/Sparse trees
Marshy lands
Water bodies

0  1  2    4
Kilometers

Fig 2: Land use and Land cover of the study Area, 1986 and 2008
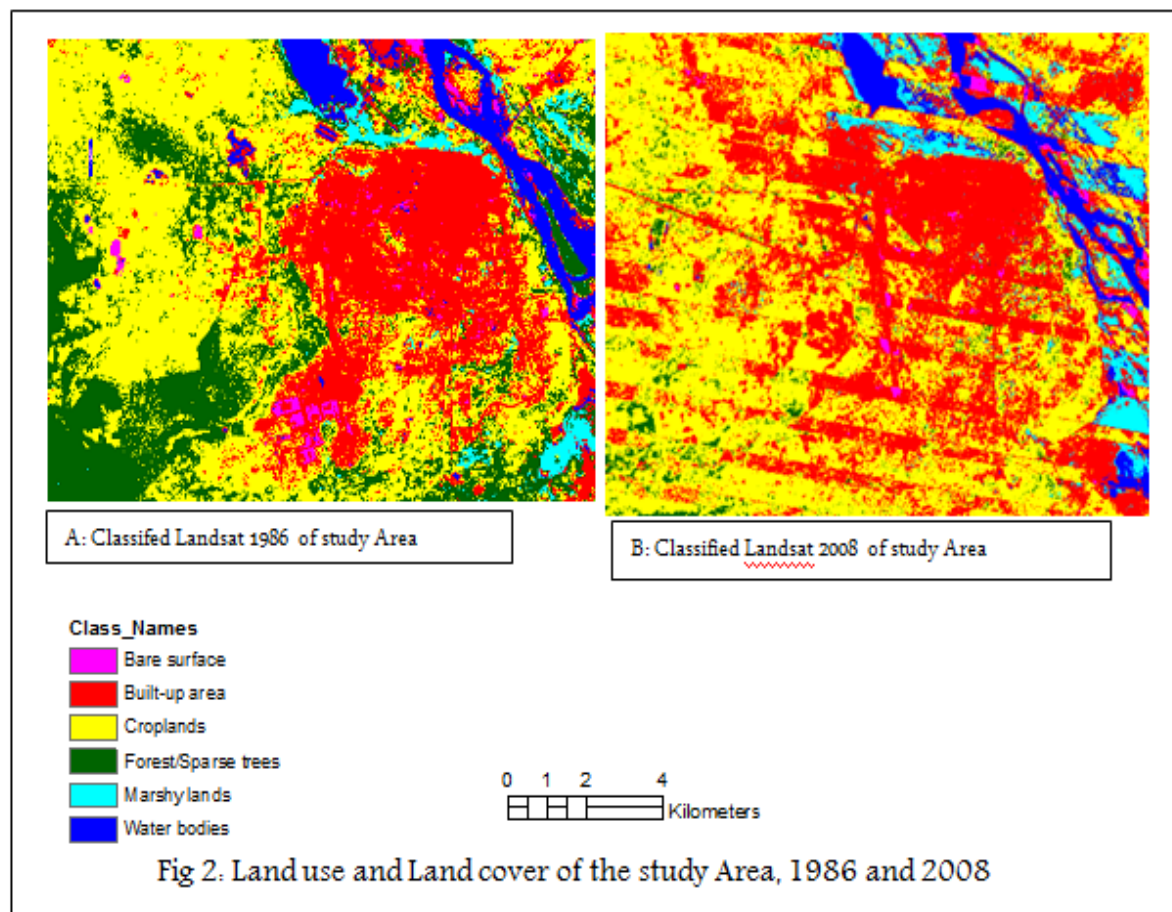
In percentage terms, the largest increase in urban built-up land in 1986 occurred in Karewa area. Increase in built-up land in Karewa area corresponds with the period when most of the former government's built quarters were constructed. Massive urban sprawl in these areas can be ascribable to location of government projects and institutions like FCE, Army barracks, Airport, which tend to draw population to themselves. This is not surprising because increasing human population in an area tend to increase urbanization. For instance, the population of both Jimeta and Yola town was 17, 000 in 1963 and that of Jimeta alone sharply rose to about 100, 000 in 1980. Also, other human activities like farming, grazing, land excavation especially roads constructions etc seems to have led to increase in the extent of bare surface and cultivated lands. All these have contributed to increasing the rate of expansion of urban Jimeta. Hence, urban built-up areas increased from 33, 133 hectares in 1986 to 51, 578.1 hectares (55.7%) in 2008

.A post-classification algorithm was adopted to obtain precise quantitative information of land use conversion in Jimeta for the 22 years period (1986-2008). The results are shown in Table 4. The trends of conversions of different land cover types as shown in this table indicate that from 1986 to 2008:

- 13,952 hectares of forest/sparse trees, 22, 346 hectares of cropland, 368 hectares of bare surface, 1, 326 hectares of water area, and 2, 697 of marshy lands changed to built-up land. Therefore, built-up land use increased by about 18, 445 hectares or (55.75%).
- 22, 016 hectares of natural vegetation or forest, 4, 779 hectares of water surface, 577 hectares of bare surface, and 4, 260 hectares of marshy lands changed to cropland. During the same period, 22, 346 hectares of cropland changed to urban built-up, 485 hectares of cropland changed to bare surface, 2, 668 hectares and 3, 351 hectares of cropland changed to water and marshy lands respectively.

Therefore, cropland area increased by 18, 492 (28%) hectares during this period.
- 13, 952 hectares of natural vegetation changed to urban land, 302 hectares changed to bare surface, 22, 016 hectares changed to cropland, 1, 664 to water surface and 2, 089 hectares changed to marshy lands. Therefore, natural vegetation decreased by 36, 523 (88.6%) during the period.
- 577 hectares of cropland, 32 hectares of natural vegetation, 48 hectares of water surfaces, and 55 hectares of marshy lands changed to bare surface. During the same period, 368 hectares, and 557 hectares of bare surfaces changed to built-up lands and croplands. Therefore, bare surface increased by about 73 (6.7%) hectares.
- Water surface decreased while marshy lands increased with insignificant values. Water surfaces decreased by 539 (5.9%) hectares for the period between 1986 and 2008 and marshy lands increased by 52 (0.72%) hectares during the period.

### Table 4: Land use change matrix in Jimeta city from 1972 to 2008 (Hectares)

| 1972 | 2008 | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | Unclassified | Urban land | Bare Surface | Crop land | Forest trees | water body | Marshy lands | 1972 Total |
| Unclassified | 32854 | 0 | 0 | 0 | 0 | 0 | 0 | 32854 |
| Urban | 0 | 11,197.2 | 242.7 | 17,693.7 | 983.5 | 1,337.1 | 1,678.8 | 33,133 |
| Bare surface | 0 | 368.3 | 8.1 | 576.5 | 32.4 | 47.6 | 55.2 | 1088 |
| Cropland | 0 | 22,346.2 | 484.6 | 35,311.7 | 1,962.4 | 2,668.2 | 3,350.9 | 66,124 |
| Forest trees | 0 | 13,932.1 | 302.0 | 22,015.7 | 1,223.5 | 1,663.7 | 2,089.1 | 41,226 |
| Water bodies | 0 | 1,326.3 | 65.7 | 4,779.4 | 265.6 | 2,313.4 | 453.5 | 9,205 |
| Marshy lands | 0 | 2,696.5 | 58.3 | 4,260.2 | 236.9 | 321.9 | 404.3 | 7,978 |
| 2008 Total | 32854 | 51,578 | 1,161 | 84,616 | 4,703 | 8,666 | 8,030 | 191,608 |
| Change (hec.) | 0 | 18,445 | 73 | 18,492 | -36,523 | -539 | 52 | 74,124 |
| Change (%) | 0 | 55.7 | 6.7 | 28.0 | -88.6 | -5.9 | 0.7 | 38.7 |

Analyses of the conversion matrix of land uses in Table 4 has revealed that:

i.  Urban expansion encroached a lot of cropland, forest and marshy lands.
ii.  The areas of natural vegetation that was transformed to other land were very excessive
iii.  Table 4 also proved that the transformed area between cropland and natural vegetation were tremendous. The cumulative change extent between cropland and natural vegetation was also very extensive.

iv.  Because urban built-up had a non-reversible natural attribute, it was impossible to be converted into other lands.

### C. Characteristics of Land Surface Temperature (LST) in Jimeta

Fig 3 (A and B) were produced to show the spatial distribution of emissivity-corrected land surface temperature in 1986 and 2008 in Jimeta. The statistics of land surface temperature in 1986 indicates that the lowest temperature was a NoData ($0^0$C), the highest temperature $28^0$C and the

mean $18.6^0$C, with a standard deviation of $4.4^0$C. The minimum temperature was $0^0$C (NoData) because of the heavy cloud cover at the rural location of the northwestern axis of the image. This insulated the area and could not allow the contact between sensor and the outgoing radiation thereby leading to zero temperature value. From the figure, it becomes apparent that all the urban or built-up areas have a relatively high temperature. Some 'hot spots' (the high temperature class) can be clearly identified. The most extensive hot spot was found in the center of the town (around Luggere and Nasarawo areas). Another noticeable hot spot were detected in Alkalawa, Ajiya, Limawa and NEPA areas, which are related to the densely populated points. However, there did not exist an extensive hot spot in some old locations such as Gwadabawa and Doubeli wards, in spite of their high construction and population density. This is probably due to their border location and proximity to river Benue. The lowest temperature in the urban areas ($19^0$C to $22^0$C) appeared in: (i) extreme western axis around Damilu and Kofare. (ii) Eastern part of the Gwadabawa ward and Government quarters area (iii) Southeastern parts around 80 unit area, which were substantially rural at that time. Both the northwest (Jambutu area) and most locations in the extreme south have moderate temperature ranging from $16^0$C to $19^0$C, where cropland and ponds are common.

The differences reflect not only the differences in solar illumination, the state of vegetation and atmospheric influences of remotely sensed TM/ETM+ dataset, but also changes in land use and land cover.

The average temperature for 2008 was $29.1^0$C, with standard deviations of $2.5^0$C. The standard deviations were also smaller than that in 1986 (Table 5), indicating that the surfaces experienced a relatively little variation in land surface temperature during these periods. The central parts of the city can easily be distinguished from the outskirt. The central parts showed a high temperature of over $36^0$C, while in the outskirts, a lower temperature of $17^0$C exist. A major hot spot expanded northwards, eastwards and southwards from the urban core areas (Nasarawo and Luggere area). In other words, a major hot spot seemed to stretch out from Luggere area to Nepa, Ajiya, Limawa and Nasarawo, forming a high temperature corridor.

In addition, three large hot spots emerged in 2008 image, one centered at Fallujah (new market area) and Jambutu and Kofare (industrial area). Both areas had undergone rapid urban sprawl since 1990s. Numerous strip-shaped hot spots were also detectable in
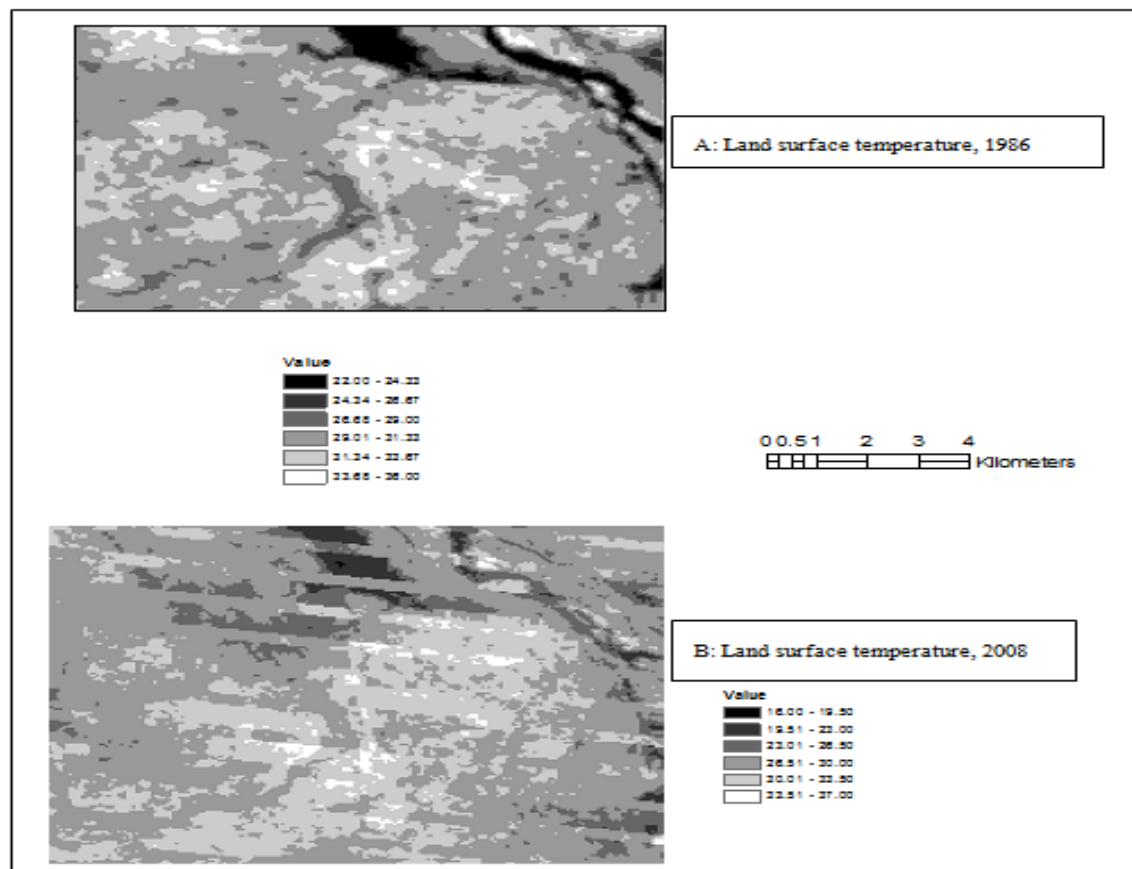


Fig 3: Land Surface Temperature Variation in Jimeta, 1986 and 2008

Table 5: Descriptive Statistics of Land Surface Temperatures, 1986 – 2008

| Statistics | 1986 ($^{0}$C) | 2008 ($^{0}$C) |
|---|---|---|
| Maximum | 28 | 37 |
| Minimum | 0* | 16 |
| Mean | 18.6 | 29.1 |
| Standard deviation | 4.4 | 2.5 |

*Source: Result of experiment conducted on the images*
**\*** No data record because of the inability of sensor to detect temperature due to heavy cloud cover

the south, around State House of Assembly complex area and Army barrack, where there has been a rapid growth in settlements. There were also many small urban heat islands along the busy highways of Mohammed Mustapha and Atiku Abubakar (former Mubi) road. The non-existence of extensive urban heat islands in the extreme east and northern parts of the city could be attributed to the cooling effect of River Benue.

The distinctive land surface temperature patterns are associated with the thermal characteristics of land cover classes. To better understand the impact of urban development on land surface temperatures, the thermal signature of each land cover type was obtained by overlaying a land surface temperature image with a land use and land cover map of the same year. The average value of land surface temperature by land cover types is summarized in Table 6. It is clear that urban or built-up land exhibited the highest surface temperature ($28^{0}$C in 1986, and $37^{0}$C in 2008), followed by bare surface ($25^{0}$C in 1986 and $32^{0}$C in 2008). These results corroborate the results of station-comparison experiment conducted by the researcher (Zemba, 2002) in 2002.

This result also implies that urban development did bring up surface temperature by replacing natural vegetation with non-evaporating, non-transpiring surfaces such as metal, concrete, and stone. The standard deviation of the surface temperature values was relatively small for urban cover ($1.31^{0}$C and $1.65^{0}$C for 1986 and 2008 respectively), indicating that urban surfaces did not experience a wide temperature variation because of the nature of non-evapotranspirative materials. The lowest surface temperature in 1986 was observed in areas with thick vegetation covers (forests, bushes and thick grass covers) by the side of River Benue in Bwaranji, Jambutu and former forest reserve area around Agric Quarters in Damilu ($17^{0}$C), followed by water bodies ($19^{0}$C). This pattern is in contrast with that of 2008, where the lowest radiant temperatures are

found at water surface ($23^{0}$C) followed by natural vegetation ($26^{0}$C), and then marshy lands ($27^{0}$C). This is because most areas of thick vegetation cover had disappeared by 2008. This different pattern is also primarily attributed to the differences in solar illumination, the state of vegetation, and atmospheric influences on the remotely sensed TM/ETM+ dataset. The difference in data acquisition date, though the same season, is clearly reflected in the surface radiant temperatures of water bodies. The radiant temperature of water bodies is higher than the natural vegetation by about $2^{0}$C in 1986, while in 2008 it is lower than that of vegetated surface by about $3^{0}$C.

Because of the distinctive characteristics of River Benue and Lakes Geriyo and Njuwa, their radiant temperature values also vary. Lakes with average value of $22.45^{0}$C registered a much higher temperature than River Benue (with mean value of $18.25^{0}$C) in 2008. Lakes often have higher concentration of dissolved materials hence, higher temperature than rivers.

Thick vegetation zones show a considerably low radiant temperature in both 2008, because dense vegetation can reduce the amount of heat stored in the soil and surface structures through transpiration. However, bush areas show a relatively larger standard deviation in radiant temperature values ($2.52^{0}$C in 1986, and $2.51^{0}$C in 2008) compared with other land cover types, indicating the heterogeneous nature of tree covers. Croplands tend to have sparse vegetation and exposed bared soil. The influence of surface soil water content and vegetation probably contribute to a broad variation in their surface radiant temperature value.

Given the relationship between surface radiant temperature and the texture of land cover that is influenced by land use, changes in land use and land cover was found to have a profound effect on the surface radiant temperature. GIS coupled with image processing helped the researcher to visualize the impact of land use and land cover change on surface radiant temperature.

**Table 6: Average surface temperature by land cover types**

| Land Use & land cover | Mean LST 1986 ($^0$C) | Mean LST 1998 ($^0$C) | Mean LST 2008 ($^0$C) |
|---|---|---|---|
| Built-up land | 28 (1.31) | 36 (1.54) | 37 (1.65) |
| Bare surface | 25 (1.47) | 32 (1.56) | 32 (1.86) |
| Croplands | 22 (2.12) | 29 (2.39) | 28 (2.61) |
| Marshy lands | 21 (1.34) | 28 (1.43) | 27 (1.83) |
| Forest/sparse trees | 17 (2.52) | 25 (2.53) | 26 (2.51) |
| Water | 19 (2.08) | 24 (2. 40) | 23 (2.47) |

*Source: Derived from Landsat Images. Values in brackets refer to standard deviations*

## V.    CONCLUSION

An integration of remote sensing and GIS was employed for evaluation of rapid urban expansion and its impact on surface temperature in Jimeta-Yola, Nigeria. Two Landsat TM and ETM+ images of 1986 and 2008 respectively were utilized. Results revealed a notable increase in urban land use/cover between 1986 and 2008. Urban land development was uneven in different parts of the city and the density of urban expansion showed a tendency of decline as the distance increased away from the city centre. The combined use of remote sensing and GIS allowed for an examination of the impact of urban expansion on surface temperature. The results showed that urban land development raised surface radiant temperature by about $9^0$C between 1986 and 2008. This study has also demonstrated that the direct effect of urban land use/cover change on one environmental element can cause indirect effects on the other. The increase of surface radiant temperature was related to the decrease of biomass. The spatial pattern of radiant temperature increase was correlated with the pattern of urban expansion. This is particularly true when all these patterns were referenced to major roads.

The integration of remote sensing and GIS has provided an efficient way to detect urban expansion and to evaluate its impact on surface temperature. The digital image classification coupled with GIS has also demonstrated its ability to provide comprehensive information on nature, rate and location of urban land expansion. Biophysical measurements including surface radiant temperature and biomass were conveniently extracted from Landsat images. Using a technique of image differencing, the environmental changes over time were evaluated. Hence, to examine the environmental impact of urban expansion, the mapped patterns of environmental changes can be linked to urban expansion pattern by correlation analysis.

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# Hermeneutical and Philosophical Considerations about Ethics and Sustainable Development

Daniel Arruda Coronel[1] José Maria Alves da Silva[2]

Alex Leonardi[3]

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*Abstract*- **The objective of this article is to bring hermeneutic considerations and philosophies concerning ethics, economy and environment, with a specific focus on the relationship between Kant's categorical imperative and the issue of sustainable development. The economic perspective of Georgescu-Roegen has been considered, for this purpose. Although economy, ethics and biology constitute distinct fields of specialization, this work seeks to show reasons for which this perspective could be seen as an intersection between the three disciplines. The article concludes with the message of Georgescu-Roegan, held in his saying "minimal bioeconomic program" in accordance with the fundamental precepts of the Kantian ethics, in respect to the issue of sustainability.**
*Keywords*: Ethics; Sustainable Development; Kant; Georgescu-Roegen; Bioeconomy

## I.   INTRODUCTION

R ecently the issue of sustainable development has deserved great acknowledgement in the press with the recent publications of international reports and their alarming conclusions on climatic problems of the planet. Frequently the warnings of these studies are spread by the media in an alarmist manner, without taking into consideration certain questions that are at the heart of the problem.

In the 1970's, concerns about of sustainable development lately began through the publication, mostly by the Club of Rome , of the work Growth Limit, which defined five inhibiting points of economic growth: population, agricultural production, natural resources, industrial production and contamination. Starting from there, discussions and debates grew over sustainable development, generalizing the concept from the Brundtland report (1987) and reaching its peak in the United Nations Conference on the Environment and Development in Rio De Janeiro, 1992, in which Agenda 21 was defined, or in other words, a set of assumptions that nations should adopt with sustainability in

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*About [1]-Doctorate student in Applied Economics at the Federal University of Viçosa (UFV), Economist from the University of Santa Maria (UFSM) and Doctorate Scholarship holder of the Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq). (e-mail-daniel.coronel@ufv.br)*
*About [2]-Associate Professor of UFV, Doctor of Economy at the University of Sao Paulo (USP).(e-mail- jmasilva@ufv.br)*
*About [3]- Doctorate student in Agribusiness at the Federal University of Rio Grande do Sul ((UFRGS), Economist from the Federal University of Santa Maria  (UFSM) and Doctorate Scholarship holder of the CAPES-Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES). (e-mail-alex.leonardi@ibest.com.br)*

*The Club of Rome appeared in 1968 formed by scientists of several nationalities, having since objective discusses the problems that were afflicting the humanity, as well as, from concrete policies, to aim solving these problems*

mind. the Brundtland report, sustainable development is defined as development "which attends to the necessities of the present without compromising the possibility of future generations to attend to their own necessities" (World Commission on Environment and Development, 1987). From this concept the discussion has evolved, almost always revolving around the search of a supposed balance between the economical, social and environmental dimensions.

Be it at the national (Gladwin et al., 1995; Banerjee, 2003; Greaker, 2003; Anton et al., 2004; Spangenberger, 2004) or at the business management level (Buysse; Verbeke, 2003; Russo, 2003; Bansal, 2005; Sharma; Henriques, 2005 and Barin-Cruz et al., 2006), sustainable development entered into the concern list of public and private managers.

Moreover, it began to be understood and discussed in a increasingly diffused manner in society.

Considering individual ethics, beginning with the kantian categorical imperative, the behavior of each individual should be based on the following maximum: act in such a way that the maximum of your actions can become a universal law, or even more, act in a way so that the reason which took you for acting in such a way can be converted into universal law. Would it then be credible to consider sustainable development from the kantian categorical imperative? If yes, what would it imply? This article is developed on such premises. From a transdisciplinary perspective, it aims to show the relationship and implications between sustainable development, the Georgescu-Roegen bioeconomy and the Kant categorical imperative. For all this, the text is divided into four sections, aside from this introduction. The second section defines and classifies the concept of ethics and its objective, as a philosophical discipline, aside from its relation with the other areas of learning and its evolution from ancient Greece up to present. The third section, from the conventional definitions, reviews the concept of sustainable development under Georgescu-Roegen views. The fourth section establishes a relation between the categorical imperative and bioeconomy. At last, some considerations and general conclusions are presented on the questions raised.

## II. THE CONCEPT OF ETHICS

It is possible to define ethics as the discipline that looks at human actions and its rules or principles or ideals in the According to Vázquez (2006, p.23), "ethics is the theory or science of moral behavior of men in society. Or in other words, it is the science of the specific manner of human behavior." The objective of study and the research involving ethics focuses on human actions, or in other words, voluntary and conscious acts of humans that affect other individuals, other social groups and other people.

In traditional philosophy, according to Napoli (2000) and Vázquez (2006), ethics is classified into three types: Descriptive Ethics, Normative Ethics and Metaethics. The first is related with empirical questions, or in other words, with principles and values of a determined time or place, without worrying about establishing judgments on what is right or wrong, or in other words, without getting into the essence or *physis* of the problem. Normative Ethics is connected to abstract questions of human actions, which according to Vázquez (2006), the normative conception has as its assumptions making recommendations and formulating standards. Nevertheless these recommendations do not reach the theory of ethics, which tries to explain the mainstay of morality related to the actions of man. In Metaethics, according to Napoli (2000), the logical level of conceptualized affirmations and propositions, or in other words, the type of reflection that analyzes the moral discourse constituting a metalanguage of intentionally neutral or non-prescriptive characters is understood.

Ethics questions, despite being studied more by philosophers, cannot be usurped by philosophy, according to Mendonça (2003), since they involve transdiciplinary concepts like freedom, justice, sociability, sustainability, values and necessities, shared with different areas of knowledge.

Rights are intimately connected with ethics, since it also works towards justice and the common good and justice is the center of reflection and ethical problems. Ethics is gnosiologically interlaced with psychology, sociology and anthropology, keeping in mind that psychology makes the actions and attitudes of man possible to understand, in this way contributing to the explanation of human actions in the moral dimension. Anthropology and sociology are already connected with ethics, since they study the behavior of man as a social being, how he is placed in a society and what his relationship with other individuals is (Vazquez, 2006).

The relationship between ethics and applied social sciences was considered by Max Weber. In the work "Protestant Ethics and the Spirit of Capitalism" (Weber, 2006), capitalism is introduced as a social order backed by an ontologically disconnected doctrine of dogmas of medieval Catholicism and validated by favorable ethics to capitalist interests.

In Medicine, the concept of ethics is related to Bioethics, which according to Loreto (2003), should be understood as the necessary conditions for a responsible administration of human life, considering the moral responsibility of the scientists and investigators with human life.

sense of determining what the best individual or social actions are in relations between men, or in other words, ethics implies relations with other beings

The concept of ethics goes back to ancient Greece. However, throughout history, with the evolution of science and the systematization of knowledge, it suffered several transformations without losing, nevertheless, its essence.

In ancient Greece, it is observed, on the basis of philosophical assumptions of the sophists , Socrates (2002), Plato (2004) and Aristotle (2004), three aspects of ethics: that of the sophists movement, with emphasis on the use of ethics and rhetoric to persuade and obtain results in the political life; that of Socrates (2002), with the emphasis on virtues and kindness, or in other words, while knowing good and virtues, man tries to act in such a way as to practice them, and the ethics of Plato (2004) and Aristotle (2004), connected with politics and the moral virtues of duties and civic rights.In the Middle Ages, according to Spinelli (2002), the concept of ethics was connected with Christian philosophy, it means, assumptions and truths related to God, which man should follow while striving for salvation and divine contemplation. Christian ethics has a tendency to regulate the actions, attitudes and thoughts of people keeping in mind another world, placing God as an end, as Lord of all things and all people.

Modern ethics, in agreement with Vázquez (2006), has a new redimensioning; the christian vision of ethics with the focus on God disappears and a vision with an emphasis on man, the anthropocentric vision which makes man the center and basis of the universe, though he is

*In agreement with Spinelli (1998) they can define the sophists like an intellectual movement of Ancient Greece, but that lost his extract while trying to make use of the knowledge and of the rhetoric for persuasion and getting privileges and wealth*

Conceived in abstract and gifted in a universal and inalterable nature. In modern ethics the philosophical-ethical assumptions of Kant (2003) and Weber (2006) are noted.

For Kant (2003), ethics consists not in taking people as a half or end. Kantian ethics is autonomous and formal in that it formulates for men a duty independent of his social and economical conditions since he is a free, active, productive and creative being.

The ideas of Kant are a logical result of his belief in the basic freedom of the individual, as affirmed in his Critique of Practical Reason (2003). This freedom cannot be confused as anarchism, but should be understood more like the freedom of auto-governmental, the freedom to consciously obey universal laws as a revealed by the reason.

The protestant ethics formulated by Weber was considered by the European capitalist bourgeoisie justifying the man actions of searching profit and wealth. The Weber's ideas were the theoretical point for the capitalist system reinforcement. Still on this perspective, according to Cherques (1997), p. while studying the protestant ethics, Weber explained the modern capitalism by analyzing the possibilities of its origin.

Contemporary ethics can be divided into two parts, the ethics of the XX century, which reproduces philosophical discussions of subjects like existentialism and social justice, and that of the XXI century that is concerned about the environment, sustainable development, social inequalities, political questions and the responsibility of man with the future of society.

Existentialism has a new connotation from the philosophical assumptions of Sartre (1996), which conceives man as a free being by nature, having his actions been unconditional as social, economical, physical, cultural and psychological forces.

The relationship between ethics and social justice finds its theoretical bases in Rawls (2002), which conceives that the sense of justice shows in two forms: when just institutions that are applied to all are accepted, in such a way that the acceptance and loyalty guarantees that rivalries between the people will be treated equally; and when people are prepared to work on behalf of just institutions and to make changes when necessary. When the principal morality is achieved, moral development is complete, and this can take two forms: the first corresponds to the feeling of the just and justice; and the second to the love of humanity.

According to Rawls (2002) the most fundamental assumptions of the justice sense is that each person must have freedom, as extensive as possible, in as much as is compatible with the freedom similar to that of the other individuals.

Morin (2005) discuss on ethic questions, bringing out the auto-ethics, focusing on questions not linked to the moral and politics epistemology, but to elements such as social, cultural, educational responsibility of man in the society where he lives, the capacity of man to reflect on the way he interacts with society through elements like honor, tolerance, responsibility, self criticism and self analysis.

A great example of the ethical and social preoccupation of man with society can be found in the letters of Albert Einstein and Sigmund Freud, from 1932, entitled Why War? In the correspondence between these two of the major characters in scientific history, the concern and anxiety of both for the future of international relations can be observed, more specifically with the capacity of the League of the Nations to promote peace and sustainable development in society.  These questions are out of the context of their respective areas of work and inquiry. The ethical worries and discussions of the new millennium are centered on issues like equal opportunities, political rights, and mainly, questions related to the environment and the concept of sustainable development.

### III.   SUSTAINABLE DEVELOPMENT

With Aristotel, the economy appeared like a branch of ethics: the ethics of the relationship in the activities of material life sustenance (Nicomachean Ethics, 2004). So, in Aristotelian view, the link between ethics and sustainable development can´t be broken, because the activities are not neutral with respect to natural environment. Nevertheless, Aristotel did not have in mind environmental questions. He

sought to secure an ethics of justice, as his principle of the just trade shows, according to which the exchange of goods between two men must serve to improve the conditions of life of both and not constituting anything where one could benefit on another. Assimilated by Christian doctrine, the aristotelic principle of just exchange was incorporated into the political economy for centuries, until, with the advent of enlightenment, the economy began to be identified by the concepts of pleasure and self interest, changing more and more into what Aristotle himself had defined as "crematism". (Politics, 2004).

Environmental concerning are quite recent in human history. It comes about in a more spread form in the second half of the XX century. The studies of Carson (1962), Georgescu-Roegen (1971), and Schumacher (1983) constitute seminal references on this subject. In  the book "Silent Spring", Rachel Carson reports the results of investigations on the effects of chemical synthetic agents in living organisms. This work constituted the first great alert of the sanitary dangers and environmental risks of pesticides. The proof of the endocrinous disruption provoked by DDT and ecological damages created a new government-political posture regarding the use of agrochemicals which culminated into the act of creation of the Enviromental Protecion Agency (EPA), by President John F. Kennedy.

The work of E. F. Schumacher constituted one of the first challenges to the "myth of economic progress" while attracting attention to the environmental impacts from large potential industries, highly intensive in energy consumption and pollution. His most aggressive message supported by energy statistics, was simply that the North American way of life could not be taken as a world reference, since it might not be supported for much longer. That saying strongly against the neoclassic theory of economic growth, which predicted the convergence of income between countries. As the Schumacher's work clearly pointed out, it is the problem with this theory is that it simply disregards the restrictions presented by the availability of non renewable natural resources like coal, oil and water.

But, the most general treatment, or even holistic, about the relationship between the economical development, ethics and environment is supplied by the romanian economist rooted in the USA, Nichollas Georgescu-Roegen (1906-1994), in series of fertile and innovatory works. This is a reason for which, instead of a multivaried and superficial review of several authors, it was opted to perform a more detailed examination here of the contributions of this important author on the subject in question .

His work in this field consists of substantial criticism to the transplanted mechanistic paradigm, by the founders of the neoclassic school, of the newtonian physics for the economy, in which the economic system is represented as if it were a reproducible type, i.e. able to reproduce all the energy that it consumes. However, that applies only to the work and capital resources, which usually appear explicitly in the neoclassic function of production. The resultant product of the application of these resources can be used to support them in a constant or growing level to

*On the question of sustainable development, the ideas of Georgescu-Roegen are extremely innovatory, beginning with the idea that, strictu sensu, there is no self sustainable economic development, when it is taken into account that the economic system is not like a perpetual motion mechanical system, but like an evolutive entropic process that marches inexorably towards extinction. In this sense, environmental preservation must not make absolute sustentainability as its objective, although it is impossible, but the maximization of the possibility of life on the planet.*

recompose the energy spent by the workers in the productive effort and put the capital stock back, in constant (stationary reproduction) or growing (enlarged reproduction) scale. But, in this process, the collection of natural resources, like land, water, forests and ores, necessarily suffers an entropic degradation. However, its habitual omission in the argument of the production function seems to presuppose that while capital is accumulated and the population grows, "everything remains constant".

This is the reason for which, like a dissident species of the neoclassic mainstream of which it was removed in the 1960's, Georgescu-Roegen proposed the analogy of entropic systems described by physical thermodynamics instead of the neoclassical model of mechanistic inspiration  for the economical system.

The idea that the economic process is not an analogous mechanism, but an entropic transformation, unidirectional, began to revolve in my mind, a long time ago, when I witnessed the oil wells of the fields dry up one by one and grew conscious of the struggle of the Romanian peasants against the deterioration of his soil worn away by continuous use and by the erosion of the rains. However, it was the new representation of a process that allowed to me to crystallize my reflections in describing, for the first time, the economic process as an entropic conversion of valuable natural resources (low entropy) into residues without value (high entropy). I hurried to add ... that this is only the material side of the process. The true product of the economic process is an immaterial flow, the use of life, whose relation with the entropic transformation of matter-energy is still mysterious (Georgescu-Roegen, 1976, p. 14).

The work of Georgescu Roegen is, in several aspects, innovatory regarding the rival neoclassic and Marxian schools. Though diametrically opposite, these have common aspects. Both emphasize the urbane, capitalist and individualist market system and, in the beginning, disregard the environmental impacts of the industrial-urbane expansion. The first one because it is reducionist and abstract, for nature, second because it has the history of the theory of class struggle as its main focus, it is more concerned with the exploitation of man by man than with environmental degradation .

Georgescu-Roegen and E.F. Schumacher are among the first to realize that the economic calculation is ethically mistakenly when it reduces several types of inputs from the productive

*Before his conversion, Georgescu-Roegen was an exponent of the theoretical inquiry of the neoclassic mainstream,*

*having presented insights that inspired several of the principal economic theorems subsequently developed by other eminent neoclassics like Paul Samuelson. For many people, only the set of his theoretical work in the neoclassic economy would have been sufficient to make it deserve the laurel of the Nobel Prize in economy.*

*In fact, Marx had no time to be present at the environmental implications of the capitalist industrialization, which in his time was certainly a problem much less visible than the conditions of life of the nascent working class. The habit of neglecting the environmental questions of the Marxists who came then seems to result also from the belief of which to the end of the history of the class struggle all the problems of the humanity will be resolved.*

process to a sum of costs without taking into account certain essential differences between the involved categories. According to Georgescu-Roegen, the productive activity can be seen as a process that requires the presence of three different types of factors that he designates as factors 'fund' 'flow' and 'stock'. The flow factors are the materials that enter in the process and, transformed by the action of the base factors, they go out incorporated into the product. Among the base factors there is a need to make a distinction between those which can be replaced, like work and capital, the first by vegetative growth of the population, and the second by replacement investments and those that necessarily appear in a finite quantity "not - reproducible", as is the case of land and the reserves of fuels fossils and other mineral raw materials. Meanwhile, in economic terms, no distinction is made between them; they all have a cost that is determined by their 'market prices'. So, the non-renewable stock factors, like coal and oil, are treated by the present generation like all other types and its prices determined by the respective 'costs of production', on one side, and by the demand of the present generation, on the other. The energy necessities of future generations are not taken into account . As these factors are determined by the current supply and demand, the prices end up being underestimated by the present generation. In this case, from the point of view of a correct economic theory, the market fails in determining the price because it does not to take into account shortages, in its proper dimension .

Other interesting insights of Georgescu-Roegen were inspired in the observation of social-economic scenarios naturally based on cooperative and supportive behaviors typical of certain local and superpopulous, agriculturally based, and underdeveloped economies. If the technique of usefulness and production functions were applied to these scenarios it must be prepared to take into account at least two great differences related to the usual neoclassic treatment. The first thing to consider is that the well-being of a typical individual doesn't only depend on his consumption possibility, but also others member of community consumption possibilities. Formally this can be

*In case of the price of the oil, for example, only the cost of extraction is considered, on one side, and the demanded quantity, on the other. When, in a determined state of*

*affairs, the demand falls, this causes an increase in the reservoirs of already extracted oil, setting up a tendency for price reduction, and vice-versa. If new, more accessible deposits are discovered then the cost of extraction will have a tendency to fall, being associated also to a tendency in reduction of price, and vice-versa. So, the price of oil, whose existent quantity in the planet is fixed, and as such will one day become exhausted, ends up being treated as an agricultural commodity, whose production can be maintained indefinitely in a continuous flow, although it depends on the existence of base factors and on undepletable flow factors.*

*If the price of oil incorporated this "true" shortage certain comforts of modern life, such as cars, would be economically impracticable. The american way of life can be seen as a distortion resulting from this mistake.*

*Such scenarios were relatively common in the time of his youth in Romania and other eastern European countries.*
represented by a utility function $U = f (y, x)$, in which $y$ represents consumption capacity of the individual (i) and $x$ the particular criteria concerning communitarian welfare. Under the conditions $f'(y) > 0$ and $f'(x) > 0$, this function implies that the utility of an individual do not dependent only of his own income but of the total income distribution among the members of the community. That is the case for small communities in which each member knows the situation of the others and is conscious of the interdependencies between them, in contrast to the utility function of the metropolitan man, for whom the variable $x$ is only relevant, according to the neoclassical assumption.

In such situation, the profit maximization criteria also does not make sense, once, due to the excess of population and relations to too many base factors, the objective of maximization of the community income ends up surpassing any individualistic objective of profit maximization.

Apparently, it was the consideration of special economic characteristics of these economic systems which inspired Georgescu-Roegen to propose the physical thermodynamic analogy as more appropriate for the economy than the mechanical analogy of Galileu and Newton. It is true that humanity, as a whole, is still far from facing the severe restrictions already observed in certain local overpopulated economies, for which the logical principals discussed above are applied. However, if it was properly considered that as a result of the inevitable positive entropia of the economic process this type scenario is what humanity will unavoidably reach, this would be the wisest perspective.

There is no doubt that, in harmony with the second law of thermodynamics; the economic activity of *homo sapiens* contributes to the increase of the positive entropia of the planet, a reason for which Georgescu-Roegen considered the Law of Entropia as "the most naturally economic of all natural laws." The resultant way of life of the "fordism" industrialization constitutes aggravating factors that, not only due to "cars are being more 'entropic' than the buggy", and the "donkey being less 'entropic' than the motorcycle", but principally because the process of mass production

increased the use of machines, increasing the conversion rate of non-renewable natural resources into non recyclable residues.

The fascination provoked by "technological wonders", made possible by the discovery of the laws of mechanics and eletromagnetism, on a hand, and the progressive loss of human contact with "the wonders of nature", as a consequence of the industrial-urbane expansion, contributed to the affirmation of the mechanistic model in the economical theory and as a way of thinking that
associates progress with economic growth measured by the expansion of GNP. From the biological point of view, such a change must be seen as more of a threat than human progress. This is another notable insight of Georgescu-Roegen which creates a new perspective for economic science, where a "biological essence" is revealed in economic activity, in general, and especially in technological development. This is the reason why, since the 1970's, this new perspective began to be designated as bioeconomy.

Georgescu-Roegen borrowed the terms exosomatic, to designate the instruments and artificial mechanisms that man invents, and endosomatic to designate the natural physical entities of living beings, from the biologist Alfred Lotka. A lion when it kills a prey uses only endosomatic organs like claws, jaws and teeth. Man, however, in order to kill, utilizes instruments like weapons created by himself. One distinctive characteristic of humans from other animal species is the fact that he is the only one who uses cerebral capacity to produce exosomatic organs. This is the basic reason for him having become the dominant species, among all other forms of life. But they are not exclusive to human beings. Some animal species also use them, like the birds that make nests and bees that build hives, for similar reasons that man builds beds or houses. What distinguishes humans is their capacity to produce and incessantly invent exosomatic instruments, not by genetic instinct, like birds and bees, but a rational activity. The human species like all living species is subject to an endosomatic evolutionary process, in accordance with the Darwin's law. The difference from the other species is that the human species also evolves in exosomatic ways.

In this sense, economic activity is an extension of biological activity. The produced entities are used and spread to support a new way of life. From this point of view, the economy is essentially a 'bioeconomy', since it involves the evolution of the existence of man, as a species, and not as an individual only interested in maximizing profits (Georgescu-Roegen, 2003, p. 187-88).

Providing an extension of human capacities, the development of exosomatic entities, as a process of "facilitating life", be it through the reduction of effort or the increase of comfort and pleasure provided to man, establishes a vicious dependency. Another consequence of this is the inequality in the distribution of benefits from this evolution among the class that plans, organizes, supervises and controls the production, which Galbraith (1977) called the technostructure, and the class "which simply participates

in this production". In order to use the terms of Georgescu-Roegen, it is the conflict between "those that govern" and "those who are governed." The human species reveals other differentiating characteristics from other species, as a biological being stipulated by biophysical processes and socially molded by institutional standards.

The problem with exosomatic dependence is that it puts humanity on a collision course with inevitable limits established by a finite endowment of natural resources. Once, as Galbraith already demonstrated, that it is by mechanisms through which this dependence is intensified that members of the technostructure reaffirm their governing power, this class will take on the role of the villain in the environmental tragedy announced by Georgescu-Roegen.

## IV. KANTIAN CATEGORICAL IMPERATIVE AND SUSTAINABLE

DevelopmentThe kantian imperative can be formulated in the following way: act in such a way that the maximum of your actions can become universal law, or act in a way that the motive that caused you to act can become universal law. I do not need far sided insight to know what I should do so that my desires are morally good. Inexperienced as to the course of worldly things, incapable of prevention in view of events that in themselves come to give, it is enough to ask myself: - Can you also desire that your maxim converts itself into universal law? (Kant, 2004, p.35).

According to this principle all individuals must fulfill their moral duty and provides the universal criteria, which actions should be conducted (Hamm, 2003).

Scanlon (1998, p.153), in an attempt to explain the categorical imperative and the kantian universal law affirms that:

An act is wrong if its action in the current circumstances is unauthorized by any set of principles for the general regulation of behavior that no one could reasonably reject as the base of a clarified and not compelled general agreement (Scanlon, 1998, p.153).

Trying to better explained the "categorical" imperative; Kant (2004) presents four examples: suicide, lying, concealing talents and worry of others. First he considers the case of individual thinking of commit suicide to get rid of extreme difficulties.  It is possible to transform the suicide in universal law? Obviously not, he affirms, since death can never be the solution to problems.

In a second example, he takes the case of a individual in financial difficulty trying borrow money that promises to settle the debt on a determined date. She knows that she is not going to be able to honor her promise, but, if she does not do that she will not get the money that she needs. From there can be argued: is it possible to establish the lie as the basis for a universal law? All men must lie to achieve his objectives?

Quickly I recognize that I can in truth want to lie, but that I cannot want a universal law of lying; according to such a law, it could not proportionally carry any promise, because it would be useless to affirm my will relative to my future actions to people that do not believe in my affirmation, or if they hastily do so, they would pay me with the same coin.

Consequently my maximum, once rooted in universal law, would necessarily destroy itself (Kant, 2004, p.34).

The third example concerns to concealing talents. If a person has determined skills and does not make an effort to perfect them this cannot become universal law. So, according to Kant (2004), this behavior does not stimulate the person to perfect his potential and face challenges.

Last but not least, a final example illustrates the case of a person who sees a needy person and can help to alleviate his pains but does absolutely nothing. In this case can be asked: the lack solidarity could become universal law? The answer is no, since without solidarity human kind could not exist.

Mendonça (2003) summarizes in the following way the nucleus of universality and Kantian imperative:

The reasonable nucleus of this "test of universality of maximums" is the following: in many cases we can show that an option is morally wrong with an argument that begins with the question "and if everyone acted this way?" So we can show that it is wrong to step on the grass, withhold taxes and not honor promises previously made. The kantian test supplies us with, at best, a necessary condition for moral choices (Mendonça, 2003, p.21).

From these considerations arises an inquiry about what criterion should be followed to guide individual action in accordance with a universal law. Here Kant (2004) stresses the criterion of goodwill. For him good will is free, autonomous, and the actions are not determined or random and so could serve as a basis for a universal law of human behavior. Nevertheless, as expressed by Pascal (2005), temptations can divert men of good will path.

Based on Kantian concepts, it is possible to make a mix among the epistemological elements about the sustainable development with the Kantian philosophical requiring. Men know

that sustainable development is a prerequisite to enlarge the chances of future generations enjoy the miracle of life on a planet wonderful. But why doesn't society worry about sustainable development and make it universal law, molding it to the kantian imperative, since it's hard to find better reasons of goodwill than environmental sustainability?

It starts to be noticed an involvement on engagement of certain social segments in defense of sustainability. Universities, NGOs, Private and Public Organizations, some Governments and, recently, even the media. This movement that has been advancing over the last few years has been arousing the conscience of more and more individuals.

In effect, as exposed here, there is a strong linkage joining kantian philosophical precepts and the bioeconomy of Georgescu-Roegen. The next passage, taken from one of his last texts, makes that quite clear: "A new ethics emerges from bioeconomy and its order is: "love your species as yourself". (Georgescu-Roegen, 2003, p. 190).

Without having, except by mistake, made reference to Kant in his writings, the proposal of a new economic order, by Georgescu-Roegen, which became known as the "minimum bioeconomy program" admirably fits the spirit of the Kantian imperative. The program is composed by a set of eight recommendations . There is nothing in them that has not already been said by pacifists, critics of the consumer

society, ecologists or existentialist philosophers. The difference is that it is not based on anything that could be confused as religion, ideology or romanticism, but rather an economic perspective that, without contradicting the most accepted scientific canons, establishes a common view point between different disciplines like ethics, biology and economy.

Nevertheless, Georgescu-Roegen was aware of the elevated degree of "utopianism" of his proposal. He was realistic and skeptical in terms of the acceptance of any program that appealed to a drastic reduction of material comfort:

[...] Perhaps, the destiny of the humanity is to have a short life but, burning, exciting and extravagant, instead of a long, however monotonous and contemplative existence. We let other species — the amoebae, for example, ― that has no spiritual ambitions inherit a land still abundantly sunny. (Georgescu-Roegen, 1976, p. 35).

He also anticipated the reaction of the great powers to the proposal of global environmental control, as demonstrated by the position of George Bush's administration,

*More precisely, the program contains eight items, among which are favorable recommendations to help underdeveloped countries and agrarianism, and oppose the production of armaments, conspicuous consumption, marketing and planned technological obsolescence.*

regarding the Kyoto protocol. The incursion of the USA into the Middle East also seems to indicate well the answer to the inquiry: "What can a great power decide, armed with nuclear warheads, if a time arrives when there is not sufficient energy to maintain his exosomatic system operating? " (Georgescu-Roegen, 2003, p. 190).

## V.   CONCLUSIONS

The general objective of this article was to bring some reflections on the question of sustainable development, involving economy, biology and philosophy, in general, and particularly to present the ideas of Nichollas Georgescu-Roegen that establish notable contacts between these three disciplines. Specifically it tried to show some ideas and proposals of a thinker whose work is being gradually rescued, after long and certainly not occasional ostracism, establishing a connection with analytical presuppositions of moral kantian philosophy.

The search for sustainable development, besides demanding cultural, political, and economic order changes, demands changes in the attitudes of mankind, who needs to develop a more complex and more multidisciplinary vision on this development aiming to provide the conditions so that society can reach it.

The basis of kantian ethics, in spite of having being formulated almost two centuries ago, is still current. When the good will of men exists the search for sustainable development may be considered a universal law. Nevertheless, as Kant (2003) warned, very often man, by his attitudes, inclinations and preferences does not do good will. In a way, at present, this is what still happens with

sustainable development. It is a concept that is still not a priority for society by reasons of human inclinations for other things like maximum profit and "exosomatic wonders" of a post-modern society.

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# Sociological Analysis of Marital Stress and Women Effectiveness in Grassroot Socio-Econonmic Transformation in Nigeria

Agba, A. M. Ogaboh (Phd)[1] Festus Nkpoyen (Phd)[2]

Ojua, T. A (Phd)[3]; Archibong Esther [4]

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*Abstract*-Women involved in grassroot socio-economic transformation programme experience a number of marital-related stressors which produce strain symptoms that function as predictors of their ineffectiveness in local development initiatives. This finding was made from this study which examined the existing influence among marital characteristics symptoms of stress such as child care, domestic chores and marital crisis or discord. The multi-stage sampling procedure (involving stratified, simple random and systematic) were adopted to select married women who participated in the study. Data were collected using both questionnaires and interviews, analysed using ANOVA. It was concluded that women see child care as their own responsibility and do not perceive the demand of child bearing as a burden; the sharing of domestic chores among older children and house help make it easier for women to be effective in grassroot socio-economic programmes. However, the study indicated that stress arising from marital discord hinder women effectiveness in being committed to development related initiatives.

*Keywords*-Marital stress, Grassroot socio-economic transformation.

## I.    INTRODUCTION

Grassroot socio-economic transformation is a process by which a set of technical, social, cultural and institutional measures are implemented with and for the inhabitants of rural areas with the aim of improving their conditions in order to achieve harmony and balance both on the regional and national levels (UNECA, 1974). Earlier in 1972, the Regional Planning and Economic Development in Africa held at Ibadan, Nigeria conceptualized grassroots socio-economic transformation as the outcome of a series of quantitative and qualitative changes occurring among a given rural population whose converging effects indicate, in terms of rise in the standard of living and favorable changes in the way of life of the people concerned. It does not mean isolated programmes of' community development', 'health and animation', 'mass education', 'agricultural extension', 'health and nutrition extension', or other programmers which are carried out in the rural areas or within the rural community. It is a comprehensive

*Author*[1,2,3&4]- *Department Of Sociology, University Of Calabar, Calabar, Nigeria (e-mail*[1]-*o*gabohagbagroup@yahoo.co)
*Phone:* +234 08072727272)

Development of the rural areas (UNECA, 1972).The attainment of political independence by many African countries, the ideals of rural or grassroot socio-economic transformati-on became imperative. The concept of integration was introduced and the objectives of the ideals of rural development included: integrating into society those people who had been by-passed by past and current development activities (that is spreading the benefits of development more equitably throughout the society); integrating the various development efforts into a comprehensive system; integrating the goals of development (example increased incomes, participation in governance and decision making, welfare and employment) such that they are discrete and mutually exclusive; the gradual restructuring of the socio-economic and political systems on the basis of a popularly shared development ideology; the maximum mobilization of domestic human and material resources for self reliance and the bridging of gender gap in economic development (Mbithi & Chitere ,1978).

Due to cultural orientation climaxing in sex stereotyping people, rural Africa have developed mental picture of the role of the rural women in development related activities. The 1991 population census indicated that there were 28.64 million rural females (or 50.51%) in the rural population. Of these, those who qualified to be called "women" (that is, adult of marriageable age, 15years and above) were 16.09 million. This also constituted about 18.1% of the total population of the country. Nearly 70% of them were actively married or had been separated/divorced or widowed. Most of these (50.8%) were in their economically active years (that is 15 to 64 years) with 29% engaged in agricultural activities (Ekong, 2005).

Nigeria's rural economy as well as its urban food security is largely sustained by rural women. Rural women are engaged in land preparation for farming, planting of crops and vegetables for household consumption, weeding, harvesting, processing of harvested crops and storage; transportation of harvests by head portage; fishing, fish processing and marketing of sea foods; processing and sales of dairy products, homestead livestock husbandry (that is keeping of goats, sheep, pigs, chicken for home consumption), retail trade with strong market women associations, production

and movement of food stuffs from market to market; carrying out such economic activity as casual labourers at building sites; bread winners in single parent houses, fetchers of firewood (fuel and water, ensuring household food security), pot making, weaving and dyeingof traditional clothing materials, sewing and beautification, religious activities and festivals, Parent Teachers Association (PTA) activities, contribution of cash and labour to community development projects etc. Rural women are also involved in teaching at the local levels, food preparation and house management, leadership of local women social and economic groups and support of political party activities etc (Otu, 2005).

Women involvement in grassroot socio-economic transformation goes beyond satisfying community basic needs to encouraging the spirit of communal self help and initiative in the improvement of holistic conditions of the communities through their associational activities. They educate community members on the need for cooperation and to foster active participation in community affairs. In development both males and females are involved but most people lose their sleep over the performance effectiveness of some married females development agents. Many people in development circles tend to express reservation over effectiveness of women in rural economic transformation. The observation is that there are many aspects of community development that the effectiveness of women leaves much to be desired. In order to be involved in development, a good number of them tend to depend on male community members for execution of rural economic projects. As a result of this situation, female development agents do no appear to be progressing as speedily as their male counterparts in rural transformation projects (Nwosu, 2003). Some rural women are of the view that there are many effective male development agents as there are women and that it is the male dominated society that is taking advantage of sex role stereotyping to stigmatize female involve in development as being relatively ineffective in their rural socio-economic transformation programme. Some community members understand it is context of women being the weaker sex who are not expected to be very effective in a demanding community environment. Concerned development experts tend to see in the breeding of children as the factor that constraints women's effort to be fully committed to the goal of rural transformation (Milson, 2007).

In spite of rhetoric's, government and non government gestures, the issue of non-effectiveness of some married women in rural socio-economic transformation is still of concern to many scholars. It is in this light that one may see the need to address the issue in a definite manner, if for nothing else, at least for the goal of determining variables that may introduce effectiveness in women involvement in rural economic transformation. Marital stress can hinder women effectiveness in full scale contributing to development projects (Lazarus, 1996). Marital stress here entails a condition where marriage related factors interact with the individual to change (disrupt or enhance) his or her psychological conditions such that the person (mind and or body) is forced to deviate from normal functioning (Denga 1991, Beehr & Newman 1998).

Rural area has increasingly become a psychological community, full of stressful development activities. Stressors such as land disputes, poverty, marital crisis, communal conflict, affect the initiation and implementation of development projects etc. Some modest level of stress may be associated with increase development project performance but where the stress level rises high, performance effectiveness of project begins to decline. A rural dweller experiencing immense stress may break down, may become too sick to involve and committed to development effort. Stress therefore inflicts low productivity and commitment to community activities. Stress generates inefficiency, ineffectiveness, incompetence and inertia among concerned rural community development stakeholders (Batten, 1993).

It is worthy to note that women can never be effective when they perceive high level of stress. Therefore, when they are depressed because of stress, it affects the outcome of their development efforts. It is in consonance with this that this study, sought to find out if marital stress is relevant in explaining effectiveness of women in rural socio-economic transformation in Southern Senatorial Districts, Cross River State. In Nigeria, the fact that community members participate in efforts to modernise and transform the rural areas has not improved the effectiveness of women. Some of the rural women have been unable to make much progress in rural socio-economic transformation activities. To help the rural women carry out development projects, women have formed and belonged to various community associations and have also been mobilized through self help project sensitization. Despite all these efforts by government and non-governmental organisations, women still exhibit low effectiveness in identification, conceptualization and implementation of rural socio-economic projects; this is not unconnected to stress.

## II. STUDY AREA

This study is carried out in Southern Senatorial District in Cross River State, Nigeria. For administrative convince, the District is divided into seven (7) local government areas including Akamkpa, Akpabuyo, Bakassi, Biase, Odukpani, Calabar Municipality and Calabar South. The Senatorial District is bordered in the north by Yakurr Local Government Area, in the east by Republic of Cameroon, in the south by Calabar Sea, in the west by Akwa Ibom and Eboyi States. Apart from the local government headquarters, in the Senatorial District, other towns and villages are rural areas and women constitute a significant population. Women organizations and their activities promote rural transformation in the District. The inhabitants are mostly farmers, traders and fishermen. Most food stuff consumed in urban areas in Cross River and other neighbouring state are produced by women in the Senatorial District. Their production capacity in this respect is affected

by a number of factors including traditional practices, lack of loan facilities, land tenure system etc.

Southern Senatorial District is the one of the largest Districts in Cross River State and the Niger Delta Region. The people of Cross River State are of the Bantu Stock who migrated from Central Africa. The District is blessed with tourist site such as Tinapa in Calabar, Kwa Waterfalls, Calabar Botanical Garden and Zoo, Old Residency Museum, Marina Resort etc. Despite the tourism potentials of the District, majority of the women in the region are farmers and some engaged in petty trading; most of them dwell in rural areas. These women constitute sample for the study.

## III. LITERATURE REVIEW

### A. Women Effectiveness and Grassroot Socio-Economic Transformation

Women effectiveness implies the ability of the women to adapt to different situations in the rural environment and produce desired result (Eke, 1992). It is the active involvement of women in the execution of community projects with the aim of producing development impact within a given community (Olurobe, 1990). It entails positive changes which take place in the knowledge, attitudes and behaviour of individuals and communities as a result of women involvement in development related programmes (Alves & Haddad, 1999). It involves the ability of a rural women to identify conceptualized and meet the needs of a given community through efficient display of essential skills and attitude (Epstein, 1993). Women effectiveness implies acquisition of appropriate knowledge of the rural environment and readiness to improve their knowledge and stimulating the community participation in initiating self help projects for the purpose of overall development of their community.

Studies on women effectiveness in rural Nigeria and elsewhere have identified some distinguishing features of an effective community woman which include better socio-economic status, personality traits which show commitment and experience; involvement in general activities leading to improved qualities in basic life needs such as shelter, food, job opportunity, health services, education, improved attitude like political behaviour etc as witnessed in the community (Joe, 1986). The extent of women effectiveness in rural community development is determined by the radical transformation of the rural areas, alleviation of rural poverty and enhancement of the quality of rural life, productivity and income (Almeida, Maggs & Galambos, 1993). Women in rural areas are expected to live up to the role expected of them by participating and contributing towards community development activities. Rural community women who are committed to development activities in various sectors of the rural environment and participate satisfactorily can be seen as effective community women.

### B. Child Care and Women Effectiveness in Grassroot Socio-Economic Transformation

Inglehart (2009) viewed children as source of fun and happiness; mysterious, novel and challenging, fulfilling affiliation needs and inspiring competence, creative ability and feeling of achievement for mothers. Children, as posited by Martinson (1999) can also be a source of aggravation and distress, constantly in need, requiring continual attention, reducing one's freedom of activity and flexibility. Waerness (1994) described child care as a form of care giving because of children's dependence on adults to provide services which they are too young to provide for themselves. The presence of dependent children reinforces the traditional gender division of domestic labour. Child care is a major problem for the women who are part of the efforts to improve the welfare of the community. Whether a woman employs a mother's helper, a baby sitter, a house keeper etc, there is often anxiety, worry and guilt as a result of the conflict between their responsibility as mothers and as women in development (Curtis, 1996). On the relationship between child care and women effectiveness in development projects, Wilk (1996), in her study on participation of women in community development interviewed some rural married women to ascertain their perception of involvement in community development. Most of the married women claimed that having children alters their lifestyle and affects their perception of community development. The women maintained that getting pregnant and having babies mean dropping out of community development activities for a substantial length of time. This period of non involvement is tantamount to non contribution to development initiatives or programmes.

Boulton (1993) reported that for women in development, combining participation in development activities and motherhood poses a great problem in the area of effectiveness for the married women. He argued that mothers who should be committed to development activities are always pressurized by the demands of child care and hardly ever find time for themselves. They find it hard to show a high level of effectiveness in participating in women association meetings, projects conception and implementation. The women in development find it hard to preserve their own identity in the face of ever expanding demands of child care.

### C. Child Care Stress and Women Effectiveness in Grassroot Socio-Economic Transformation

The prevailing family structure whether polygamous or monogamous has significantly affected committed effort by women to engage in development activities in their rural areas (Otu, 2008). Wives are generally regarded as appendages, Otu stressed that this has resulted in an under-estimation of the contribution of women to rural community development and has equally created some sort of imbalance in opportunities within the family. Davies and Cummings (1994) in their work on household task programme and participation in community projects discovered that married women continue to have primary responsibility for the

organisation and function of the family. There is an increase in the involvement of women in house work and reduced involvement in community projects. Coontz (1992) found that women invest more effort on domestic chores while men choose the family work that is less threatening to their masculine selves. Coontz added that since house wives are more obsessed with home keeping little consideration is accorded community self help projects. Demo (1992) asserted that since married women have been culturally assigned the responsibility of domestic chores the sameculture cannot expect them to function efficiently in community development projects. Demo found that domestic chores have constrained women from effectively contributing in initiating decision and providing resources with a view to achieving self reliance and self sustaining growth and development in rural areas.

The demands of domestic affairs and the submissiveness of the generality of women to their husbands on decision concerning investment in productive ventures and their acquiescence to the burden of family demand often constitute a hindrance to their active participation and effectiveness in development activities in their rural areas. The constant mobility to which women are subjected to in their attempt to adjust to the changing fortunes in their husbands' progression and location does not offer women much opportunity to utilize maximally their potentials in development ventures (Otu, 2008). The physical factor that a woman has to perform the biological function of procreation has created handicap for her in terms of being efficient in promoting activities that lead to enhanced standard of living in their communities. Pregnancy with its attendant child bearing and rearing deprives her of the conscious and deliberate effort aimed at helping her community recognised its needs and to assume increasing responsibility for solving problems of her community thereby increasing her capacity to participate fully in rural development (Curtis, 1996).

### D. Marital Discord and Women Effectiveness in Grassroot Socio-Economic Transformation

Fentenu (1997) asserted that marital discourse is the disagreement between marital partners over values, beliefs, goals, norms and behaviour which make up the structure of the nuclear unit. Marital strife and marital discord and unresolved emotional problems can negatively influence the development initiative motivation, productivity and effectiveness of the woman in community activities. Problems and frustration faced at home may disrupt enthusiasm in development projects.

In his study on marital discord and its impact on women development effectiveness, Levine (1971) observed that marital discord can influence women indirectly by decreasing the effectiveness on their parental skills and directly destroying desire and interest in the socio-economic transformation of their communities. A nagging wife according to Denga and Ekpo (1994) tends to stimulate discord between her and the husband and once a quarrel is ignited, tension and stress may precipate anxiety. When the

stress arising from discord reaches breaking point, apathy towards community development programmes results.

Ekong (2005) reported that marital conflict could negatively affect community work. It is possible that such community women may view the proposed changes or innovations apprehensively. Marital discord may assume the form of sabotage of programmes and can undermine the morale of women thereby leading to their ineffectiveness in contributing to development project design and implementation.

### IV. THEORETICAL FRAMEWORK

#### A. Liberal Feminism

The proponent of this theory is Bernard. It begins with an identification of the sexual division of the labour and the existence of separate public and private spheres of social activity for men and women. It posits that sexism creates the chance for females from childhood to be limited and maimed in their thinking and interaction, so that they can move into adult roles and in those roles dwindle from full humanness into the mindless, dependent, subconsciously depressed beings created by the constraints and requirements of their gender specific roles (Otu, 2006). The implication is that, Nigerian society and communities anchored on culturally given institutions and rights which permit very little female individual freedom and no equality. The theory presupposes that men are more important than women, more significant, valuable and worthwhile and so it is more important for a man to be the breadwinner, to have education, to have better pay, to inherit property and access to material resources. It sees women as being in the world for the pleasure and assistance of the men. This implies that women are to fulfil their feminine functions and by this depend on the men for everything especially their identities and a social definition of the roles; and are rewarded as wives, mothers or mistresses. These roles can never give women a chance to effectively contribute towards fostering better conditions of community life and helping to solve the many problems besetting rural populations at the community level. Thus, the issues of child care and domestic chores are likely to rob married women of opportunity to participate in decision on major changes taking place in their communities which is desirable and functional (Otu, 2006).

#### B. Biddle Theory of Effectiveness

Biddle (1904) propounded a seven model theory of effectiveness. The sixth theory is applicable here, that is, the theory of family and community context. It asserts that the community arena in which the married women operate include physical settings, established pattern of behaviour, men members of society and agreed upon definitions of social events. These factors in no small way affect married women effectiveness though they are not under the women's control. On the part of the married women are child care, domestic chores and likelihood of marital discord. All these constitute stressors and affect women effectiveness in tasks designed to improve community wellbeing. Equally constraining is the status of the woman in the community. It

has been observed that women are denied equal opportunity to participate in community project design and implementation. This no doubt is a constraint of the women in terms of effectiveness in socio-economic development of rural communities.

procedure (involving stratified simple random and systematic) was adopted. The research design adopted in this study was the survey design because it involved the collection of data to accurately and objectively describe marital stress and effectiveness of women in socio-economic transformation. The population of the study comprised of all married women living in  Southern Senatorial District of Cross River State. The sample of the study comprised two hundred and fifty respondents drawn from communities in Senatorial District. Data for the study were obtained from both primary and secondary sources. The main instrument used for data generation for the study was the marital stress inventory (MSI). The instrument is a 4 point Likert scale questionnaire with 36 items, designed to measure marital stressors and effectiveness of women in socio-economic transformation of rural communities. ANOVA was used to

### C.   Methodology

The research was conducted in southern senatorial district of Cross River State as the study area. The multi-stage

analyse obtained data at 0.05 level of significance and 247 decree of freedom.

### D. Results

Hypothesis One: The level of stress arising from child care has no significant influence on the effectiveness of women in rural socio-economic transformation. Analysis of variance (ANOVA) statistics was used with the associated F-test in determining the influence of stress arising from child care on the effectiveness of women in rural community development. The result of the analysis is presented in table 1.

**Table 1: Result of Analysis of variance of the influence of level of stress arising from child care on effectiveness of women in rural economic transformation**

| S/No | Effectiveness of women in rural transformation | Source of variance | SS | DF | MS | F |
|------|------------------------------------------------|--------------------|------|-----|-------|------|
| 1. | Project initiation | Between group | 34.08 | 2 | 17.03 | 0.96 |
|    |                    | Within group | 4379.13 | 247 | 17.17 | |
|    |                    | Total | 4413.18 | 249 | | |
| 2. | Project implementation | Between group | 18.44 | 2 | 9.22 | 1.03 |
|    |                        | Within group | 2202.78 | 247 | 8.92 | |
|    |                        | Total | 222.1 | 249 | | |
| 3. | Involvement in association activities | Between group | 13.40 | 2 | 5.70 | 0.5 |
|    |                                       | Within group | 3337.18 | 247 | 13.50 | |
|    |                                       | Total | 3350.58 | 249 | | |
| 4. | Self help projects | Between group | 19.16 | 2 | 9.59 | 1.09 |
|    |                    | Within group | 2165.24 | 247 | 8.76 | |
|    |                    | Total | 2184.40 | 249 | | |
| 5. | Total effectiveness | Between group | 260.09 | 2 | 13.05 | 3.03 |
|    |                     | Within group | 10584.31 | 247 | 42.85 | |
|    |                     | Total | 10844.40 | 249 | | |

*Critical f2, 247 = 3.04 at .05 level of significance.*

The result presented in table 1 has shown that the calculated F-values of 0.96, 1.03, 0.50, 1.09 and 3.03 are each less than the critical value of 3.04 at .05 level of significance. The interpretation is that there is no significant influence of level of stress arising from child care on each of the dimension of effectiveness of women, namely: Project initiation, project implementation, involvement in association activities, self

help projects and on the overall variable of effectiveness of women in rural socio-economic transformation.

Hypothesis Two: Stress arising from performance of domestic chores does not significantly influence effectiveness of women in rural socio-economic transformation. Analysis of variance (ANOVA) statistics

was used in determining the influence of stress arising from domestic chores on effectiveness of women in rural economic transformation. The result of the analysis is presented in table 2.

**Table 2: Result of analysis of variance of the influence of level of stress arising from domestic chores an effectiveness of women in rural economic transformation**

| S/No | Effectiveness of women in rural transformation | Source of Variance | SS | DF | MS | F |
|---|---|---|---|---|---|---|
| 1. | Project initiation | Between group<br>Within group<br>Total | 30.06<br>4383.12<br>4413.18 | 2<br>247<br>249 | 15.03<br>17.75 | 0.55 |
| 2. | Project implementation | Between group<br>Within group<br>Total | 6.39<br>2214.83<br>2221.22 | 2<br>247<br>249 | 3.20<br>8.97 | 0.36 |
| 3. | Involvement in associational activities | Between group<br>Within group<br>Total | 4.08<br>3348.50<br>3350.58 | 2<br>247<br>249 | 2.40<br>13.55 | 0.51 |
| 4. | Self help projects | Between group<br>Within group<br>Total | 9.77<br>2174.83<br>2184.40 | 2<br>247<br>249 | 4.89<br>8.80 | 0.56 |
| 5. | Total women effectiveness | Between group<br>Within group<br>Total | 21.50<br>10822.50<br>10844.40 | 2<br>247<br>249 | 10.75<br>43.81 | 0.25 |

*Critical f2, 247 = 3.04 at .05 level of significance.*

The result of the data analysis presented in table 2 revealed that the calculated F-values of 0.55, 0.36, 0.51 and 0.25 are each less than the critical F-value of 3.04 at .05 level of significance. The interpretation is that there is no significant influence of stress arising from performing domestic chores on each of the dimension of the overall variable of effectiveness of women.

Hypothesis Three: Stress arising from marital crisis does not significantly influence effectiveness of women in rural economic transformation. Analysis of variance (ANOVA) statistics was used in determining the influence of stress arising from marital crisis on effectiveness of women in rural economic transformation. The result of the analysis is presented in table 3.

**Table 3: Result of analysis of variance of the influence of stress arising from marital crisis on effectiveness of women in rural socio-economic transformation**

| S/No | Effectiveness of women in rural transformation | Source of Variance | SS | DF | MS | F |
|---|---|---|---|---|---|---|
| 1. | Project initiation | Between group<br>Within group<br>Total | 8.50<br>4404.67<br>4413.18 | 2<br>247<br>249 | 4.26<br>17.83 | 0.24 |
| 2. | Project implementation | Between group<br>Within group<br>Total | 55.23<br>2165.99<br>2221.22 | 2<br>247<br>249 | 27.62<br>8.77 | 3.15 |
| 3. | Involvement in associational activities | Between group<br>Within group<br>Total | 27.17<br>3323.41<br>3350.58 | 2<br>247<br>249 | 13.58<br>13.46 | 1.01 |

| 4. | Self help projects | | Between group | 27.69 | 2 | 13.85 | 1.56 |
|---|---|---|---|---|---|---|---|
| | | | Within group | 2156.71 | 247 | 5.73 | |
| | | | Total | 2184.40 | 249 | | |
| 5. | Total | women | Between group | 48.83 | 2 | 24.48 | 0.18 |
| | effectiveness | | Within group | 10795.59 | 247 | 43.71 | |
| | | | Total | 10844.40 | 249 | | |

- *P < .05; Critical f2, 247 = 3.04*

The result in table 3 indicate that four of the five F-ratio (0.24, 1.01, 1.59, 0.56) for project initiation, project implementation, self help project and total women effectiveness are each less than the critical F-ratio of 3.04 at .05 level of significance with 2 and 247 degrees of freedom. This means there is no significant influence of level of stress arising from marital crisis on those four dimensions of effectiveness of women in grassroot socio-economic transformation efforts.

However, for the effectiveness of women in the grassroot socio-economic transformation efforts of involvement in association activities, the calculated F-ratio of 3.15 was higher than the critical F-ratio of 3.04. This means, there is a significant influence of stress arising from marital crisis on women involvement in association activities that are geared towards socio-economic transformation of rural communities in Southern Senatorial District of Cross River State, Nigeria.

## V. DISCUSSION OF FINDINGS

The study revealed a non-significant influence of stress arising from child care on the effectiveness of women in enhancing socio-economic transformation of communities. The result debunked position held by Boulton (1993). The study of Boulton was conducted and made in relation to childless couples. Thus their findings may not apply to couples with children that are practically taking care of their children. The women have been naturally endowed to take care of their children and as such see child caring as their own responsibility and do not perceive the demands of child caring as a burden. The women either take their younger children to day-care centres or they hire helps or bring their relation to help them take care of the younger children while they participate in efforts to foster socio-economic transformation in their local communities.

The result of data analysis also revealed that effectiveness of women in grassroot socio-economic transformation programme is not significantly influenced by performing household chores. A lot of factors could help explain the findings. Firstly, women have been psychologically prepared right from childhood to believe that most of the domestic chores are done by a woman. Secondly, many women especially the professional women have reduced the number of times they go shopping. In doing so they have reduced the time spent in shopping and cooking so that they can be useful to themselves. Thirdly, those of them that can afford to hire helps do so while some bring their relations or share the chores among the older

women in the house. All these efforts offer them opportunities to engage in community services.

The result showed that stress arising from marital crisis significantly influenced effectiveness of women involvement in socio-economic transformation efforts but does not significantly influence project initiation, project implementation, self help project and total women effectiveness. The finding of marital crisis significantly influencing women involvement in association activities is consistent with Fentenu's (1997) finding that marital strife and marital discord can affect the motivation, development and effectiveness of development committed agents. The findings also support Denga and Ekpo (1994) that when stress arising from marital crisis reaches breaking point women effectiveness is highly affected. The findings in the other dimensions of women effectiveness aside association activities women today appear to be enjoying a stable family life. Majority of them are also spiritually developed and take their religious life quite seriously. This has a positive impact on their personal life's relationship at home. It instils a sense of discipline, devotion, commitment and hard work in them. Many of them do develop the tendency of leaving their marital problems at home and separating such problems form community service. All these tend to reduce the extent of the significance of marital discord on the effectiveness of women in grassroot socio-economic transformation.

## VI. CONCLUSION

Women have been naturally endowed to take care of their children and as such see child caring as their own responsibility and do not perceive the demands of child caring as a burden. Availability of house helps, reduction in the time use in shopping and cooking and the sharing of domestic chores among the older children made it easier to women to be more effective in grassroot socio-economic transformation efforts. The stress arising from marital crisis affects women involvement in association activities that are geared towards rural socio-economic transformation. We therefore recommended that enlightenment programmes should be put in place by government agencies and non-governmental organizations to promote healthy and harmonious family life in Cross River State and Nigeria in general.

VII.    REFERENCES

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# Influence of Family Relationship, Parenting Style And Self-Esteem On Delinquent Behaviour Among Juveniles in Remand Homes

S.K. Balogun[1] M Chukwumezie[2]

## I.  INTRODUCTION

Local and international news is replete with reports of crime. At least once in ever (liranl@post.tau.ac.)ily week a Nigerian tabloid would have on its pages some reports of one form of crime or the other, committed either against individuals or against corporate bodies (Ribadu, 2007). A developing and even more disturbing phenomenon is the number of children, young persons and youths getting involved in crimes. According to the FBI report, although fewer crimes are being committed in the USA, the juvenile arrest rate has grown by 20% since 1991 and about 2.7 million juveniles were arrested in 1995, making it about 18% of all arrests. Additionally, in 1994 more than 1.5 million delinquency cases were processed in juvenile courts in the United States representing a 41% increase in cases since 1985 (Butts, 1996).

Juvenile delinquent behaviour is one of the important issues faced by most nations of the world today. Juvenile delinquency appears to be on the rise despite the social awareness of the ills of crime. Psychologists, sociologists and criminologists the world over have long debated the various causes of delinquency. The causes of such behavior, like those of crime in general, are found in a complex of psychological, social, and economic factors. Clinical studies point to emotional maladjustments in many delinquents, usually arising from disorganized family situations, as a factor in delinquency. Scott (1982) saw delinquency as typical responses to family stress, and motivated by one of the following: escape from home situations, avoidance of stress through excitement, hostility, loyalty testing and compensation. Recent research and theory has focused on the processes by which family poverty leads to violence and delinquency in individuals who live in public housing and lower-income neighborhoods (Aber, Seidman, Allen, Mitchell, & Garfinkel, 1992; Gonzales, Cauce, Friedman, and Mason, 1996). Gender (Moffitt et al, 2001); peer influences (Garnefski & Okma, 2002), race/ethnicity (Walker-Barnes & Mason, 2001), self-esteem (Rosenberg et al, 1989) and the presence of trauma, abuse and/or violence (Fox, 1996), in a child or youth's life are all factors implicated in the studies on the causes of juvenile delinquency. Some other theorists argue that just like in other criminal behaviours, there is no one single explanation

of delinquency. Adopting an ecclectic approach to understanding the causes of delinquency may appear to be better because studies have shown that many of these factors overlap. A young person who laked appropriate parental control may also have low self-esteem and face many barriers in life at a very young age. Whatever the cause may be, however, researchers seem to agree that delinquent behavior is very complex and there is no one reason why some children or young people commit delinquent acts while others are able to marshal their resources and live a positive life.

There is no formal definition of juvenile delinquency or delinquent behaviour. However, it would be imperative to first understand who a juvenile is before attempting to define juvenile delinquent behaviour. In most States a juvenile is defined as a person under the age of 18 (O'Connor, 2004). In Nigeria, the definition of a juvenile is implied from the provisions of the 1946 Children and Young persons Act, as a person above the age of 14 but under 17 (Okonkwo & Naish, 1990). Also according to Section 68 of the Criminal justice Act, 1991, children (i.e. those under 14 year, and young persons, (i.e. those 14 and under 17 years (18 years for some purposes) ), are referred to as juveniles. Developmentally, a juvenile is a person at the adolescent stage of development, which according to Erikson (1950,1968) in his theory of development is between the ages of ten and twenty.

The term juvenile delinquency has a broad definition; while some emphasize the legal aspect such as the violation of the law, others emphasize the characteritic problems of delinquency. During the 18th Century, the definition of juvenile delinquency shifted from "a form of misbehavior common to all children" to a euphemism for the conditions and behaviors of poor children (Roberts 2004). Juvenile delinquency, which is used interchangeably as juvenile delinquent behaviour is defined as any illegal actions committed by a juvenile in which there is an apprehension and court proceeding. Defining who is a delinquent and who is not, is determined by the norms and culture of the society in which the juvenile lives. What may be deemed a delinquent behaviour in Nigeria may be an acceptable behavior in another part of the world. However, when a juvenile commits an offence, contrary to the laws or norms of the society, such as acts of rape, vandalism, theft, drug related activity, arson or other anti-social behavior, he/she is then considered a juvenile delinquent. A delinquent is

*Author[1&2]-Department of Psychology, University of Ibadan, Ibadan, Nigeria.(e-mail[1]-shyngle612yahoo.com)*

therefore a legal term which describes a juvenile or an adolescent who has broken a criminal law, and/or is being officially processed by the juvenile court and is judged by the court to be a delinquent. Juveniles are subject to juvenile court jurisdiction once they break the laws applied to the status of their offences.

Family, school, peer group, neighbourhhood, and media each has its own values, born of its own experiences, and all these have their own influences on the behaviour of the juvenile. The family influence on roles and norms which juveniles follow comes through the socialization process that the individual experiences as part of the family culture. In other words, all juvenile delinquent behaviors are influenced by what goes on in the environment in which the juveniles live, which includes what they learn by observing adults, what they listen to, learn from peer groups, parents, relatives, and society as a whole.

Despite the statistical data on juvenile behaviours, there seems to be serious shortcomings in the understanding of causes of juvenile crime. Psychologists argue that to ease the crime problem, we must first understand its causes (Wrightsman et al., 2002). That is to say, to be able to control or eradicate delinquent behaviours among juveniles, we must first of all understand the causal factors and address them.Family relationship, as it affects juvenile delinquency, is one of the variables of interest in this study. Family is a fundamental environment where all care and relationships that determine the child's personal development and growth take place and this has been implicated by various studies as one of the major factors that determine delinquency. This is because the family determines a child's class, structure, and development. Family exerts the most influence on a human being. Some family intervention researchers (Bry, Greene, Schutte, & Fishman, 1991; Szapocznik, et al., 1988; Szapocznik, 1997), believe that improving parenting practices and the family environment is the most effective and enduring strategy for reducing juvenile delinquency and associated behavioral and emotional problems. The quality and process of interaction between parent and child is considered an important aspect of the socialization process and an insulator to delinquency. Family relationships, duties, responsibilities and privileges, broken homes, family size, crises in the family, and the amount of control exercised over children all play considerable roles in forming character and influencing behavior, and have been subjects of study in the field of delinquency and crime. Dysfunctional family settings - characterized by conflict, inadequate parental control, weak internal linkages and integration, and premature autonomy - are closely associated with juvenile delinquency. The relationship between the parents and the children and among the siblings, how they interact, communicate and feel towards one another is another dimension of the family environment which influences attitudes and behaviours. Children who perceive that their parents are unaware of their whereabouts are likely to do what they want, all of which suggests that the focus of communication can affect the likelihood that the child can recall his parents when and if a

situation of potential delinquent behavior arises, or he/she may ignore it if he/she chooses to.

The family as a social institution, all over the world has seen substantial changes from the typical traditional family of man and wife (or wives as the case may be) and children, to the increase in one-parent families and non-marital unions. The absence of fathers in many low-income families can lead boys to seek patterns of masculinity in delinquent groups of peers. These groups in many respects substitute for the family, define male roles, and contribute to the acquisition of such attributes as cruelty, strength, excitability and anxiety (Cernkovich & Giordano, 1987). The home is the most fertile breeding ground for violent behavior. Children, who see a parent or other family members abused, or abuse another, are more likely to view violence as a way of solving problems are more likely to abuse others, as they grow older (American Psychological Association, 1996). In other words, the attitudes and actions of parents within the family environment could have important influence in the lives of the children, especially on whether a child is found to be incorrigible and disobedient or compliant and receptive or violent and abusive.

Psychologists have been interested in how parents influence the development of children's social and instrumental competence. Studies show that parenting affects the behavioural outcome of children, for instance, Snyder & Sickmund (1995), found that children and adolescents who lack adequate parental supervision are more likely to engage in criminal activities. Parenting is not a specific act, but a complex activity that includes many specific behaviors that work individually and together to influence child outcomes. One of the most common approaches to the study of parenting is what has been termed "parenting style", as conceptualized by Diana Baumrind, which she used to capture normal variations in parents' attempts to control and socialize their children (Baumrind, 1991). Also, Darling & Steinberg (1993), define parenting style as "a constellation of attitudes toward the child that are communicated to the child and that, taken together, create an emotional climate in which the parents' behaviours are expressed".

Parenting style captures three important elements of parenting: parental responsiveness and parental demandingness (Maccoby & Martin, 1983), and psychological control (Barber, 1996). Parental responsiveness which is also referred to as parental warmth or supportiveness, describes "the extent to which parents intentionally foster individuality, self-regulation, and self-assertion by being attuned, supportive, and acquiescent to children's special needs and demands" (Baumrind, 1991). Parental demandingness, also referred to as behavioral control, refers to "the claims parents make on children to become integrated into the family whole, by their maturity demands, supervision, disciplinary efforts and willingness to confront the child who disobeys" (Baumrind, 1991). The third dimension, Psychological Control, according to Barber, "refers to control attempts that intrude into the psychological and emotional development of the child" through use of parenting practices such as guilt induction, withdrawal of love, or shaming. Parenting styles differ in the

extent to which they are characterized by responsiveness, demandingness, and psychological control. A typology of four parenting styles have been created by categorizing parents according to how they differ on parental demandingness, responsiveness and psychological control. They are authoritative,  authoritarian, indulgent, and uninvolved parenting styles (Maccoby & Martin, 1983).

*Authoritative parents* are both demanding and responsive. "They monitor and impart clear standards for their children's conduct. They are assertive, but not intrusive and restrictive. Their disciplinary methods are supportive, rather than punitive. They want their children to be assertive as well as socially responsible, and self-regulated as well as cooperative" (Baumrind, 1991).

*Authoritarian parents* are highly demanding and directive, but not responsive. "They are obedience- and status-oriented, and expect their orders to be obeyed without explanation" ((Baumrind, 1991).). These parents provide well-ordered and structured environments with clearly stated rules. Authoritarian parents can be divided into two types: nonauthoritarian-directive, who are directive, but not intrusive or autocratic in their use of power, and authoritarian-directive, who are highly intrusive.

*Indulgent parents* (also referred to as "permissive" or "nondirective") "are more responsive than they are demanding. They are nontraditional and lenient, do not require mature behavior, allow considerable self-regulation, and avoid confrontation" ((Baumrind, 1991). Indulgent parents may be further divided into two types: democratic parents, who, though lenient, are more conscientious, engaged, and committed to the child, and nondirective parents.

*Uninvolved parents* are low in both responsiveness and demandingness. In extreme cases, this parenting style might encompass both rejecting– neglecting and neglectful parents, although most parents of this type fall within the normal range.

Each of these parenting styles reflects different naturally occurring patterns of parental values, practices, and behaviors (Baumrind, 1991) and a distinct balance of responsiveness, demandingness and psychological control. According to Darling (1997), positive parenting is one which is high in these three dimensions of parenting, while negative parenting is one which stress one dimension above the others. From studies it could be concluded that the authoritative parenting represents a positive parenting, because it kind of balances the three elements of parenting, in creating the right emotional climate to influence child's behavioral outcome.

*Consequencies of Parenting Styles For Children*

Parenting style has been found to predict child well-being in the domains of social competence, academic performance, psychosocial development, and problem behavior. Generally, parental responsiveness predicts social competence and psychosocial functioning, while parental demandingness is associated with instrumental competence and behavioral control.  Research based on parent interviews, child reports, and parent observations consistently finds:

Children and adolescents whose parents are *authoritative* (high in responsiveness, demandingness and psychological control) are rated by objective measures as more socially and instrumentally competent than those whose parents are nonauthoritative, while children and adolescents whose parents are *uninvolved* perform most poorly in all domains (Baumrind, 1991; Weiss & Schwarz, 1996; Miller et al., 1993).

Children and adolescents from *authoritarian* families (high in demandingness, but low in responsiveness) tend to perform moderately well in school and be uninvolved in problem behavior, but they have poorer social skills, lower self-esteem, and higher levels of depression.

Children and adolescents from *indulgent* homes (high in responsiveness, low in demandingness) are more likely to be involved in problem behavior and perform less well in school, but they have higher self-esteem, better social skills, and lower levels of depression.

Studies have implicated self-esteem as one of the basic factors that predict juvenile delinquency. Self-esteem is the evaluative component of the self-concept.  It  reflects a person's overall  assessment, evaluation or appraisal of his or her own worth as a person.

There are basically two levels of self-esteem – high or low. An individual  can exhibit high self-esteem, which means having positive feelings about oneself,  or the opposite of it, which is a low self-esteem.  While some researchers have suggested that high self-esteem individuals are actually more prone to antisocial behavior than low self-esteem individuals (Baumeister, Bushman, and Campbell, 2000), some other studies (Donnellan, Trzesniewski, Robins, Caspi, & Moffitt, 2005), showed a relation between  low self-esteem and high antisocial behavior. It is generally thought that individuals  with low self-esteem held strong negative views about themselves.  In reality, it seems that the self-views of these individuals are not more negative but more confused (Campbell, 1990; Campbell & Lavallee, 1993). According to Roy Baumiester (1998),  this self-concept confusion means that individuals with low self-esteem simply don't know themselves well enough  and lack clarity about their abilities, which makes them less confident of success and more likely to set lower goals for themselves, compared to those with high self-esteem (McFarlin, Baumeister, & Blascovich, 1984). In contrast, individuals with high self-esteem persist longer in the face of failure, although sometimes they fail to recognize when it is pointless to persevere (Weitin & Lloyd, 2003). Low self-esteem is also associated with less effective social skills, in that they feel socially awkward, self-conscious, and especially vulnerable to rejection (Rosenberg, 1985). Unlike those with high self-esteem, they are reluctant to take bold steps, perhaps out of fear of humiliation that may result if they should fail. They instead fall back on indirect strategies, such as putting others down, to maintain or boost their self-esteem. (Tice, 1993). Brockner (1983), also found that individuals with low-self-esteem  are more easily

persuaded to change their views  and are more likely to conform to peer pressure.  On the other hand, one may have a high self-esteem that is  fragile, inflated and unrealistic (narcissism).  Narcissism is the tendency  to regard oneself as grandiosely self-important. Narcissists experience ego threats and are likely to engage in aggressive behaviours such as partner abuse, rape,  gang voilence, individual and group hate crimes and political terrorism (Baumeister, 1999; Baumeister, Smart, & Boden, 1996).

The foundation for self-esteem appears to be laid early in life. Studies have shown that parental involvement, acceptance, support and exposure to clearly defined limits have great influence on children's self-esteem (Felson, 1989; Harter, 1993).  Baumrinds and others  have found correlations between parenting styles and children's traits and behaviours, including self-esteem (Feiring & Taska, 1996; Maccoby & Martin, 1983).  Authoritative parenting which is high on the two dimensions of acceptance and control, is associated with the highest self-esteem scores. Neglectful parenting (low on acceptance and low on control) is associated with lowest self-esteem scores; while Authoritarian parenting, which is low on acceptance and high on control, and Permisive parenting (high on acceptance and low on control) are second and third respectively.

Therefore, apart from these variables of interest in this study being implicated by studies as singly influencing delinquency, there appears to be an interrelationship among them. They therefore  may not be studied as singular causes of juvenile delinquency behaviour but as influential factors .

Nigeria still believes in the family but we know that just like there are different personalities, there are different families and so different relationships exist in the families. This study therefore asks, could the family relationships in the adolescent's family influence the development of delinquency in the adolescent?

If these factors  have any influential ability on juvenile delinquency, is there any inter-relationship among these factors?  If there is, how do these factors interplay to predispose the young person to delinquent behaviour.

The broad objective of this study is to investigate the influence of  family environment , parenting style and self-esteem on juvenile delinquency  among the adolescents in the Remand Homes.  The specific objective of the study would include:

1.  to investigate how the adolescent's  perceptions about his/her family and the relationships  in the home, (that includes the relationship between the parents, the parents and their children, among the children themselves), influence the development of delinquency in the adolescent.
2.  to determine which which parenting styles would most significantly influence delinquency in the adolescent.
3.  to  determine which level of self-esteem would most likely influence delinquency in the adolescents.

4.  the study also intends to investigate  how these factors interact to bring about the development of juvenile delinquency.

## II. METHODOLOGY

### A. Setting

The settings for this study are the Juvenile Remand and Abandoned Children's Home, Ibadan, Oyo State; Boys' Remand Home, Oregun; Special Boys' School, Isheri; Girls' Remand Home Idi-Araba; and Girls' Special School, Idi-Araba, all in Lagos State.

### B. Research Design

The design adopted in this  study is  survey research design. The Dependent Variable   of the study is Delinquent Behaviour while the Independent Variables are: Family Relationship, Parenting Style, and Self-esteem.

### C. Participants

Two hundred and ten (210) participants were selected from four (4)   Remand Homes in Lagos. The participants comprised of one hundred and eleven males, 111, (55.5%) and eighty-nine females 89, (44.5%). The age range is 10 - 19.  A mean $(\bar{x})$ age of 13.73 and standard deviation (SD) of 2.23  were  reported  of  the  participants.  Educational qualifications of the participants were as follows: one hundred and twenty-three, 123, ( 61.5%)  have secondary education, while seventy-seven,77, (38.5%) have primary education. One hundred and seventy-five, 175, (87.5%) were Christians, twenty, 20, (10%) were Moslems, while five, 5, (2.5%) practised traditional religion.   Among the participants, one hundred and twenty, 120, (60%) were from monogamous family, twenty-five, 25, (12.5%) were from polygynous family, while fifty-five, 55, (27.5%) were from single-parent family. Twenty - seven, 27, (13.5%) were Ibo, ten, 10, (5.0%) were Hausa, one hundred and forty, 140, (70%) were yoruba, and twenty - three, 23, (11.5%) were from others tribes.

### III. INSTRUMENTS

Questionnaire format was used for data collection in the study. The questionnaire had five sections, namely section A, B, C, D and E.

**Section A: Demographic Variable**

This section was made up of personal data and/or socio-demographic variables of the respondents such as   age, gender, religion, level of education and family structure.

**Section B: Index Of Family Relationship**

This section comprises the Index of Family Relationship Scale developed by Walter W. Hudson (1993). It was originally a 25-item self-report questionnaire on the respondent's perception of the conflicts or problems in the relationships in  his/her family. The scale was rated on 5-point response format ranging from None of the time(1) to All the time (5). The author reported a reliability coefficient of   0.90 and content validity of 0.60. However, the researcher revalidated the scale for the present study by pilot-testing  and out of the 25 items, 10 were retained after

the total-item analysis. The Cronbach alpha after the pilot test was .63, the Spearman-Brown coefficient was .71 and the Guttman Split-half coefficient was .76 and this made the questionnaire suiable for this study. A score above the mean of the scores means a perception of high conflict in the family relationship while a score below the mean of the scores means a perception of low conflict in the family relationship.

This present study reported a Cronbach alpha of .82, the Spearman-Brown coefficient of .85 and the Guttman Split-half coefficient of .84

*Section C: Parenting Style Inventory II*

This section was made up of the Parenting Style Inventory II (PSI - II) developed by Darling & Toyokawa (1997). The original scale had 15 items with a five - response format ranging from Strongly Disagree (1) to Strongly Agree (5) and was designed to measure the children's perception of their parents' approach or style of caring for them, using only the mother to represent both parents. The scale therefore has such items as 'My mother doesn't really like me to tell her my troubles'; 'My mother respects my privacy'. (see Appendix)

The Parenting Style Inventory II (PSI) has three dimensions of 5-items each: Responsiveness, Demandingness and Autonomy-Granting. The highest possible scores on each dimension is 25, and the summation of all of them is 75. A high score on this scale shows Positive Parenting, (that means the parenting style that is high on all the three dimensions). This is referred to as authoritative parenting in some studies. On the other hand, a low score is indicative of Negative Parenting (that means a parenting style that emphasizes one dimension above the others). Darling (1997) identified these three dimensions to be linked to delinquent behaviour. The three dimensions could be used to group parents into these three categories, but they could also be used as composite scales independent of one another. For these reasons, the dimensions were used to independently predict delinquency in this study.

This scale was pilot-tested to make it suitable for Nigerian setting. It was also modified by using the same items to measure the parenting style of both mother and father and the responses to both were correlated, showing a coefficient of .84. The reliability was established with a Cronbach alpha of 0.64, the Spearman-Brown coefficient of 0.74, and the Guttman Split-half of 0.74, making the scale suitable for this study. In this present study, the scale reported a Cronbach alpha of .72, the Spearman-Brown coefficient of .77 and the Guttman Split-half of .64.

*Section D: Self-esteem Scale*

This section measured the participant's self-esteem using the Self-Esteem Scale by Adanijo & Oyefeso (1986). The scale consists of 15 items to which the participants expressed their degree of agreement on a 5-point likert scale ranging from strongly agree (1) to strongly disagree (5). The authors reported an internal consistency coefficient of r =.79 among bank officials. Because the participants used in the construction of the scale were bank officials and not children, the researcher also pilot-tested the scale among the

juveniles. Self-esteem was categorized into high and low self-esteem. A score above the mean score is indicative of high self-esteem, while a score below the mean score is indicative of low self-esteem. The result of the study showed a Cronbach's Alpha of .69, Spearman-Brown coefficient of .80 and Guttman split-half coefficient of .80.

*Section E: Self-report Delinquency Scale*

This section comprises the Self-report Delinquency Scale developed by the authors for the purposes of this study. The 35- item scale measures delinquency among juveniles of ages 10 - 21. The items were rated on a Likert format of 5-point response format ranging from strongly agree (5) to strongly disagree (1). The scale was pilot-tested and two items were dropped after the total-item correlation was done and it showed a Cronbach Alpha of .90, Spearman-Brown Coefficient of .91 and Guttmann Split-Half Coefficient of .91, which makes it conducive for use in this study. A score above the mean of the standardization group indicates high delinquent behaviour while a score below the mean of the standardization group indicates low delinquent behaviour in the participant. This study reported a Cronbach Alpha of .57, Spearman-Brown Coefficient of .74 and Guttmann Split-Half Coefficient of .74.

## IV. PROCEDURE

The juveniles used in this study were selected using purposive sampling technique. The reason for using this sampling technique was because of the nature of the participants. The researcher was interested only in the government-owned Remand Homes, and not the Reformatory Centres run by Non-Governmental Organisations, and the Remand Homes are few. For instance, in Ibadan, there is one Remand Home while in Lagos there are four Remand Homes. The reseacher was also interested only in those delinquent juveniles who have had to deal with the law and have been taken custody of by the law enforcement agents, viz the police, the court and subsequently, are being remanded in the Homes. Due to financial constraints and other challenges with logistics, the researchers limited the study to these five Remand Homes.

The researcher obtained permission to carry out the study from the Ministry of Youths, Sports and Social Development, Ikolaba, Ibadan and Alausa-Ikeja, Lagos, after presenting a letter of introduction from the Department. After obtaining permission, the researcher conducted a pilot study, the purpose of which was to revalidate the scales within our Nigerian setting.

While the juveniles in the Juvenile Remand and Abandoned Children's Home, Ibadan were used for the pilot study, the juveniles in the four Remand Homes (Boys' Remand Home, Oregun; Special Boys' School, Isheri; Girls' Remand Home, Idi-Araba; and Girls' Special School, Idi-Araba), all in Lagos State, were used for the main study.

The questionnaires were administered to 210 delinquent juveniles in the four Juvenile Homes in Lagos. The researcher explained the purpose and procedure of the study to the House-Officers in charge of the Homes, who helped to distribute the questionnaires to the participants. The

researcher also explained the need for the participants to willingly participate in the study and not by cohersion and the participants were duely informed. The researcher assured them of utmost confidentiality with respect to their responses. The questionnaires were administered to the participants as they sat in their dinning-rooms and class-rooms as in an examination, so as to control for undue influence of others on each participant's responses to the questions. The filled questionnaires were submitted to the House-officers by each person immediately they finished

and they were all given ample time to finish depending on the age, academic level and level of intelligence of each participant as advised by the House-officers. A total of two hundred and ten (210) questionnaires were collected over a period of four days, out of which only two hundred and three (203) were correctly filled and two hundred (200) were submitted for statistical analysis.

## V. RESULTS

**Table 1 showing the result of the joint and independent prediction of juvenile delinquency by family relationship, parenting style and self esteem using multiple regression analysis**

| Predictors | $R^2$ | Adj $R^2$ | F.ratio | Df | P | β | P |
|---|---|---|---|---|---|---|---|
| Family relationship | | | | | | .342 | <.001 |
| Parenting style | .128 | .115 | 9.578 | 196 | <.001 | -.225 | <.001 |
| Self-esteem | | | | | | .052 | >.05 |

The t-test showed significant difference between male and female adolescents in delinquency. Male adolescent reported higher delinquent behavior (mean = 83.90, SD = 30.021) than did female adolescents (mean = 66.85, SD = 24.37), t (198) = 4.33, p=<.001. This implies that male juveniles reported higher delinquency than their female counterpart. The hypothesis is therefore confirmed.

SELF ESTEEM: adolescents low in self-esteem will score significantly higher on delinquent behaviour compared to adolescents high in self-esteem. This was tested using an independent sample t-test. The result is presented in table.3 below.

**Table 3 Summary table of an independent sample t-test effect of self esteem on delinquency among juveniles**

| Dependent variable | Self-esteem | N | Mean | SD | Mean diff | Df | t | P |
|---|---|---|---|---|---|---|---|---|
| Delinquency among juveniles | Low | 100 | 80.68 | 31.118 | 8.730 | 198 | 2.158 | <.05 |
| | High | 100 | 71.95 | 25.835 | | | | |

From this table, the t-test showed significant difference in delinquency based on level of self-esteem of the juveniles. Juveniles high in self-esteem scored less in delinquency (Mean = 71.95, SD = 25.835), than the juveniles with low self-esteem (Mean = 80.68, SD = 25.835), t (198) = 2.158, p= <.05, two-tailed. This implies

that juveniles with low self esteem reported higher delinquency than those with high self esteem. The hypothesis is therefore confirmed.

GENDER AND FAMILY: There will be significant interaction effects of gender and family relationship on delinquency among juveniles. This was tested using a 2 x 2 ANOVA. The result is presented in table 4 below.

**Table 4 Two-Way ANOVA showing interactive effects of Gender and family relationship on delinquency among juveniles**

| Source of variation | Df | Sum of Squares | Mean Square | F.ratio | P |
|---|---|---|---|---|---|
| Gender (A) | 1 | 14072.954 | 14072.954 | 20.173 | <.001 |
| Family relationship (B) | 1 | 13831.468 | 13831.468 | 19.827 | <.001 |
| A x B | 1 | 248.191 | 248.191 | .356 | > .05 |
| Error | 196 | 136734.188 | 697.623 | | |
| Total | 199 | 165753.155 | | | |

From this table, there is no significant interaction between gender and family relationship on delinquency, though there were significant main effects between the two. The hypothesis was therefore not confirmed, and the null hypothesis accepted.

DIMENSION PARENTING: In order to buttress what literature has suggested about the three dimensions of parenting style (Responsiveness, Demandingness, and Psychological Autonomy granting,) being related to delinquent behavior, these dimensions as composite scales were used to predict delinquency in juveniles.

The hypothesis states that the dimensions of Responsiveness, Demandingness, and Psychological Autonomy granting, will independently predict delinquent behaviour in juveniles. The hypothesis was tested using multiple regression and the result is shown in the table below.

**Table 5 showing the result of the independent prediction of juvenile delinquency by Responsiveness, Demandingness, and Psychological Autonomy Granting**

| Predictors | $R^2$ | Adj $R^2$ | F.ratio | Df | P | β | P |
|---|---|---|---|---|---|---|---|
| Responsiveness | | | | | | -.338 | <.001 |
| Autonomy-granting | .158 | .140 | 11.837 | 196 | <.001 | -.016 | >.05 |
| Demandingness | | | | | | .180 | <.05 |

From the table, it shows that the three dimensions of parenting style had a significant joint prediction of delinquency ($R^2$ = .153, adjusted $R^2$ = .140, F(3,196) =11.837, p<.001]. Importantly, the dimension of Responsiveness showed a significant independent prediction of delinquency (β =-.338, P <.001). This is a negative relationship which suggests that the more responsive the parents are, the less delinquent the juveniles would be. In addition to that, the demandingness dimension had a significant independent prediction of delinquency (β =-.180, P <.05), which is a positive relationship suggesting that the more demanding parents are, the more delinquent the juveniles will be. The result also shows that Autonomy-granting dimension has no significant prediction of delinquency.

In summary, the result shows that family relationship, parenting style and self-esteem combined to influence delinquent behavior. Family relationship had a positive relationship with delinquency while parenting style had a negative relationship with delinquency.

In addition to that, adolescents with high self-esteem had less delinquent behavior compared with their counter-parts with low self-esteem. Finally, it was observed that the dimension of responsiveness in parenting style had a negative relationship with delinquent behaviour, while the dimension of demandingness had a positive relationship with delinquent behaviour.

## VI. DISCUSSION

From the results, it was found that family relationship independently predicted juvenile delinquent behavior. That is to say that the more conflicts the juvenile experiences in the family relationship, the more delinquent he/she becomes. Consistent with this view, Hoge, Andrews, and Leschied (1994) acknowledging that not one but a combination of factors are the strongest predictor of delinquent behaviour noted in their study that familial relationships combined with an association with delinquent peers offers the highest predictor for delinquency. Hammen, Brennan, & Shih (2004), also found that children raised in environments high in conflict may be more prone to adjustment problems, whereas, children in a positive family environment (e.g., high expressiveness and cohesion, and low conflict) are more likely to adjust well (Drotar, 1997).

Parenting style, independently predicted juvenile delinquency and consistent with literature showed negative relationship with delinquency among juveniles. This means that positive parenting, (that is parenting high in responsiveness, demandingness and autonomy-granting) is associated with less juvenile delinquency. Parents who are highly responsive to their children and at the same time make reasonable demands on them as regards the expected behavior, while giving room for the children to be their independent selves would most likely produce children who are less predisposed to delinquent behavior.

McCord (1991) found that positive family expectations combined with competent mothers who were non-punitive in discipline, self-confident, and affectionate, apparently lessened the likelihood of juvenile delinquency. Also, Summers (2006), found that parental relationships with their adolescents were found to have an impact on their adolescent's behaviour at school. The study equally found that adolescents living with parents using authoritative parenting style (positive parenting) were less likely to receive disciplinary incidents compared to adolescents living with parents using the other parenting styles. Snyder & Sickmund (1995), also found that children and adolescents who lack adequate parental supervision are more likely to engage in criminal activities. As revealed by the present study, the second hypothesis which stated that male adolescents will score significantly higher on delinquency than the female adolescents was found to be significant and thus confirmed. This indicated that male juveniles will engage in more delinquent behavior than their female counterparts which result is consistent with literature. Generally, research on the development of antisocial behaviour and delinquency has been conducted

primarily among boys. This is in part due to lower prevalence rates of crime among girls. Recently however, studies have begun to address sex and gender differences in the etiology of antisocial behaviors due to the increase in the number of females who commit crimes lately. This development it is believed, can lead to a better understanding of the root causes of aggression and delinquency (Moffitt, Caspi, Rutter, &Silva, 2001). Though there is a growing sense that female delinquency is on the rise or, at least, that the difference between boys and girls in terms of delinquency is narrowing as have been observed by Odgers & Moretti, (2002), other researchers like Coie & Dodge, (1998); Eagly & Steffen, (1986); Hyde, (1984) have all found in their studies that males demonstrate greater overt aggression and delinquency than the females.  A number of reasons could be proffered for this. Parents tend to adopt different ways of raising their children based on gender. Studies have shown that female children enjoy closer supervision by their parents than the male children. There are also cultural stereotypes which shapes the female child somehow differently from his male sibling, especially here in Nigeria. In the typical traditional Nigerian family, girls are brought up in a way that conditions them for home-making and not giving room for some of the social activities that expose the males to undue peer influences. Because there has been lower prevalence rate of delinquency among girls, even when they are exposed to peer influence, there will still be low rate of delinquency as a resulting from peer influence. Besides that even when women are involved in criminality, they are often victimless crimes, for instance, prostitution, unlike the male counterparts who engage in more violent crimes. Furthermore, the third hypothesis tested in this study which stated that adolescents low in self-esteem will score significantly higher on delinquent behaviour compared to adolescents high in self-esteem. was found to be significant and so, confirmed.  This goes to show that self-esteem of juveniles predicts their likelihood to engage in delinquent behaviour or otherwise. Juveniles with low self-esteem were found to engage in more delinquent behaviour than the juveniles with high self esteem. Some researchers, (Bushman & Baumeister, 1998; Campbell 1990) have suggested that high self-esteem individuals are actually more prone to antisocial behavior than low self-esteem individuals. However, some other researchers made findings consistent with the result of this study. Donnellan, Trzesniewski, Robins, Caspi, & Moffitt (2005), showed a relation between low self-esteem and high antisocial behavior. Also, Thalma, Lobel, and Levanon (1988) found that children with high self esteem and low need for approval cheated significantly less than the children with high self esteem. Rosenberg, Schooler anad Schoenbach (1989), found that low self-esteem fosters delinquency and that delinquency may enhance self-esteem. The findings of this study may be explained from the fact that individuals with low self-esteem simply don't know themselves well enough and lack clarity about their abilities, which makes them less confident of success in comparison to those with high self-esteem (McFarlin, Baumeister, & Blascovich, 1984).  Successful achievements especially

academically has been associated with high self-esteem in adolescents and because these low-self-esteem individuals do not know how to put their abilities to work and set high goals for themselves, they go through a cycle of failures which reinforces their sense of low self-esteem. These low self-esteem juveniles may also have more difficulties with coping, hence, they may be easily persuaded to change their views and conform to peer pressure and are more prone to engage in antisocial behaviours to boost their self-esteem (Rosenberg, 1985; Brockner,1983), unlike their high self-esteem counterparts The fourth hypothesis tested in this study which stated that there will be significant interaction effects of gender and family relationship on delinquency among juveniles showed that there is no significant interaction between gender and family relationship on delinquency.  Whether associations between family conflicts or disruption and delinquency are moderated by the gender of the child is an ongoing debate. Conflicts in the family have been found by some studies to pose greater risk factor for boys than girls (Moffitt et al., 2001).  However, other studies have found that antisocial girls frequently come from high problem homes with numerous parental changes (Silverthorn & Frick, 1999). Some claims have been made that home environment, including frequent disruptions in household structure, is a more important predictor of aggression for girls than boys, but these claims have not been well-tested (Kruttschnitt, Gartner, & Ferraro, 2002). The current hypothesis attempted to determine whether there is any difference in the influence of family conflicts on the juveniles based on their gender. This result however showed that there is no significant difference. This means that family conflicts would have a negative effect on the juveniles irrespective of the gender. This is very understandable in the sense that every child needs a warm, loving, effective family environment to develop. When these characteristics are missing, irrespective of the gender, it would have a negative influence on the young person. The fifth hypothesis states that the dimensions of Responsiveness, Demandingness, and Psychological Autonomy granting, will independently predict delinquent behaviour in juveniles. The result of the multiple regression analysis showed that the three dimensions jointly predicted juvenile delinquent behavior. However, independently, responsiveness significantly predicted as well as showed a negative relationship with delinquency. This suggests that more responsive parenting indicates less delinquency. Responsiveness, according to Maccoby and Martin (1983), has such characteristics as support, warmth, acceptance and affection, which characteristics are found in the typology of authoritative parenting style. Also, demandingness independently predicted, but showed a positive relationship with delinquency. This relationship indicates that the more demanding the parenting style, the more likelihood of delinquency. Demandingness as identified by Maccoby and Martin, is characterized by control (punishment), restrictiveness, supervision, inductive parenting and conformity demands. These characteristics are identified in

the authoritarian parenting typology. While authoritative parenting is high in both responsiveness and control, authoritarian parenting is low in responsiveness and high in demandingness.

The findings of this study is supported by literature. Gorman-Smith et al. (2000) found that whereas, exceptionally functioning families (high levels of positive parenting, adequate discipline, structure, and cohesion), relatively similar to the authoritative parenting style, were less likely to be involved in each of the offending patterns studied, task-oriented families (high levels of structure, but low levels of warmth and beliefs about the family), which may be relatively similar to the authoritarian parenting style, appeared more likely to be involved in the serious chronic pattern of offending. Steinberg (1996), also found that juveniles raised in authoritative households were more self-confident, more responsible, and less likely to engage in substance abuse and delinquent behavior. Another study by Thomas (2004) found that children of parents whose style was punitive (a characteristic of authoritarian parenting style) were more likely to score high on an aggression scale. The result also shows that Autonomy-granting dimension has no significant prediction of delinquency.

## VII. CONCLUSION

- The following conclusions could be drawn based on the findings of this study:
- Family relationship, parenting style and self-esteem jointly predict delinquency but only family relationship and parenting style independently predict delinquency.
- Family relationship has a positive relation with delinquency, which means that the more conflict perceived by a juvenile in his/her family relationship, the more he/she would score on delinquency.
- On the other hand, parenting style showed a significant negative relationship with juvenile delinquency which suggests that positive parenting style (high in responsiveness, demandingness and autonomy-granting) is associated with less juvenile delinquency.
- Male adolescents would be more delinquent than their female counterparts.
- Juveniles who have low self-esteem would be more delinquent than their counterparts who have high self-esteem.
- There was no significant interaction effect between gender and family relationship on delinquency. This means that the influence of family relationship conflicts on delinquency will not be be different between male and female juveniles.
- Of the three dimensions of parenting style, only responsiveness and demandingness would independently predict delinquency.
- Responsiveness has a negative relationship with delinquency which suggests that juveniles who

receive more warmth, support and control from their parents would score less in delinquency.
- Also, demandingness showed a positive relationship with delinquency indicating that juveniles who are raised in a more strict and punitive but less affective environment would show more likelihood of delinquency.

## VIII. THE IMPLICATIONS OF THE STUDY

The basic implication of this study is that juvenile delinquent behavior is influenced by a number of social factors, which if studied will give a better understanding of the causes of delinquency. The first hypothesis tested stated that family relationship, parenting style and self-esteem will jointly and independently predict delinquency among juveniles. The result shows that family relationship, parenting style and self esteem have a significant joint influence on delinquency among juveniles while only family relationship and parenting style showed significant independent prediction. This shows that while conflicts in the family relationship of the juvenile and the type of parenting style he/she is exposed to independently predicted delinquency, self-esteem did not. However jointly, they combined to predict delinquency in the juvenile. This buttresses the fact that not a single but a number of factors combine to influence delinquency in children.

In the second hypothesis which stated that male adolescents will score significantly higher on delinquency than the female adolescents, male juveniles reported higher delinquency than their female counterparts. A statistical significant difference was found to exist between male and female adolescents on delinquent behavior, thereby confirming the hypothesis.

In the same vein, the third hypothesis which stated that adolescents low in self-esteem will score significantly higher on delinquent behaviour compared to adolescents high in self-esteem was also found to be significant and thus confirmed. The implication of this is that juveniles with low self esteem would report higher delinquency than those with high self esteem.

The fourth hypothesis which stated that there will be significant interaction effects of gender and family relationship on delinquency among juveniles was not significant and so was not confirmed. The implication of this is that conflict in family relationship is not moderated by the gender of the juvenile with respect to delinquency.

Hypothesis five stated that the dimensions of responsiveness, demandingness, and psychological autonomy granting, will independently predict delinquent behaviour in juveniles was partially confimed in that while

responsiveness and demandingness independently predicted delinquent behavior, psychological autonomy granting showed no independent prediction. Moreover, while responsiveness showed a negative relationship with delinquency, demandingness showed a positive relationship. This implies that where the parenting style is more

responsive, delinquency will be less, and where demandingness is more, delinquency will be more.

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# Beyond Post-Modernity the Emergence of Alternative Spaces within the City in Central Russia

Mark B. Kleyman

*Abstract*-**The shift from the production of goods toward the provision of specialized services is often considered as characteristic for post-modernity. Many traditional centres of heavy good industries currently experience sharp declines in their population numbers. But cities and towns that provide a variety of alternative spaces are avoiding the urban "shrinkage". Due to global networks and mass media, the consumerist culture becomes more attractive and desirable around the world. But, at the same time, it often destroys traditional cultures. The border between core and periphery, affluence and poverty, post-modernity and traditionalism is becoming tremendous. Very often this borderline divides the same country, and the case of Russia provides a very good example of that. This article is in this view an attempt to provide some theoretical groundwork for studying these processes, based on the case study of the cities of Ivanovo and Yaroslavl in Central Russia.**

*Keywords*-post-modernity;modernization;  tradition; urbanization; social space; Russia; Ivanovo; Yaroslavl

## I. INTRODUCTION

Many scholars and social scientists insist on defining the current stage in global development as post-modernity (Delanty 2000; Inglehart 1997). However, their opponents argue that now we observe but incomplete modernization (Wagner 1994; 2001). For better understanding the current situation, as well as arguments about it, we should perhaps analyze the substantial characteristics of modernization, modernity, and post-modernity. We suppose that the widespread of the urban way of living makes those characteristics obvious around the world.

In the mid-twentieth century a number of social scientists started to borrow the ecological concepts and apply them to the studies of communities, especially the urban ones. In fact, the distribution of a population in space assumes critical significance. The "where" may be an area as large as a continent or as small as a city block. Between these extremes are world regions, states, cities, and rural areas.

One of the most significant developments in human history has been the development of cities. A city is a relatively dense and permanent concentration of people who secure their livelihood chiefly through nonagricultural activities. Although many of us take cities for granted, they are one of the most striking features of our era. The influence of the

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*About-[1]Department of Philosophy, State University of Chemistry and Technology, Ivanovo, Russia*
*Ulitsa Oktyabrskaya, d.10/68, kv.3, Ivanovo, Russia, RUS-153002 (home)*
*Prospekt Engelsa 7,  Ivanovo, Russia, RUS-153000 (office).*
*74932 328490,7 4932 300433 ,7 903 889 80 27*
*(e-Mail;mkl652002@yahoo.com)*

urban mode of life extends far beyond the immediate confines of a city's boundaries. Many of the characteristics of the modern societies derive, in some way, from the urban existence.

Calling their approach urban ecology, these scholars and social scientists examined how the social uses of urban land result from an interaction between diverse groups of people and their physical/geographical environment (Schwirian 1983: 83 – 102).   Recognizing that a city (even a pre-industrial one) is a social context that is very different from peasant communities, Robert Redfield focused on contrasts between rural and urban life, defining rural and urban cultures, based on "little traditions" (local and orally transmitted) and "great traditions" (non-local and literate) (Redfield 1950; 1953; 1956). He contrasted rural communities, whose social relations

are on a face-to-face basis, with cities, where impersonality characterizes many aspects of life. He proposed that urbanization be studied along a rural-urban continuum. Several studies in Africa and Asia were influenced by Redfield's view that cities are the centres through which cultural innovations spread to rural and tribal areas (Little 1971). Alexander Chayanov developed a theory of peasant economics while dealing with empirical data gathered within Russian peasant communities (obshchiny) (Chayanov 1989).

Stanley Milgram examined the different ways of adaptation of urban and rural populations to various environmental settings in developing the perspective of environmental and community psychology (Milgram 1970).

But post-industrial economy changes considerably the scenarios of urban development. The geographical constraints of earlier eras – for example, the access to good natural harbours, or the proximity to raw materials and cheap energy sources – no longer exert the same pull they once did. Instead, the attributes and characteristics of particular cities and towns that make them attractive to talented, mobile, creative individuals are increasingly crucial for their development. According to Florida, these processes give way to the emergence of the creative class and the *creative, knowledge-based, economy* (Florida 2002; 2004; 2005; 2008). But, although we are now increasingly facing the global trends of these processes, they seem to be sadly neglected by many scholars and social scientists, as if the urbanization along with its consequences is concluded. This article is in this view an attempt to provide some theoretical groundwork for studying these processes, based on the on-going research in the cities of Ivanovo and Yaroslavl in Central Russia

## II. TRADITION AND EMEGING SOCIAL SPACE WITHIN THE COMMUNITY

It could be suggested that while using and transforming, to a more or less extent, its physical environment, every community develops a set of commonly shared living practices, and, then, produces the particular *social space*. Alongside with these practices, social space means the special *moral climate* within the community. In Foucault's sense, moral climate is knowledge, meaning that people judge their surrounding world according to a certain regime of truth, which tells them right from wrong, good from bad or ours from theirs (Foucault 2000).

The phenomenon of mores (singular of mos) has been examining since long ago by many scholars and social scientists. William Graham Sumner, for example, emphasized that the ways of doing things in a society are not thought out by systematic planning. "Men begin with acts, not with thoughts … Need was the first experience, and it was followed at once by a blundering effort to satisfy it" (Sumner 1971: 82). As these trial-and-error solutions are shared among others, they become folkways, conventionally proper ways to behave. Anyone who deviates from the folkway by trying some new way is suspected of disrespect, or unnatural interest in wasting time. If the folkway becomes entrenched in the traditions surrounding some area of life that the group considers a critical problem, then it becomes one of the mores. Folkways are conventions, ways of all knowing what to do in most situations. But, if mores are violated, it brings forth outrage and punishment. Mores soon becomes part of the existing basic truths. As Sumner says, they acquire the authority of facts. For the most part, they are not written down. They become unquestioned solutions, and they take great effort to dislodge. For example, mores are crucial in solving problems within different social groups. As a result, mores produce the distinctive moral climate within the particular community. Moral climate appears as a set of cognitive schemata and modes of behaviour, such as, for example, mental maps, identification (and, then, emerging identity), inclusion, exclusion, tolerance, social pressure, conformity, etc.

According to Černoušek, while perceiving their environment, people use to emphasize the most important (central, or core) information. At the same time, they tend to pay less attention to the periphery one (Černoušek 1986). This process can perhaps be explained in terms of emerging social space. But the question is whether this space leaves room for individual – and group – security, creativity, and freedom of choice. Social space enables us to identify ourselves with stereotypes, founded in ethnicity, race, gender roles, social statuses, age ("social clock"), as well as attitudes, social norms, and values. These stereotypes, and the social space itself, derive from cultural heritage. We suppose that cultural heritage is a result of an interaction between succeeding generation groups and their physical/geographical environment throughout the history of the particular place. Tradition can perhaps be considered as a special segment of cultural heritage. This segment is perceived by people as a tangible reality which helps them in resolving their everyday problems. Tradition is expressed in various verbal and non-verbal means, such as language, rituals, customs, music, dance, architecture, sculpturing, or painting. Suppose that mores define the content of these means. These issues have been examined by many scholars, such as Eric Hobsbawm, who pointed out that traditions are social inventions and not some primordial characteristics (Hobsbawm 1983a; 1983b), or Maurice Halbwachs, who showed how traditions are shaped and stored a collective memory (Halbwachs 1950). In this regard also Pierre Nora showed how memories and traditions relay on the material "sites of memory", such as monuments, or historical sites (Nora 1996). All these scholars came to similar conclusions, showing that collective knowledge and personal knowledge are in close interaction, although they are also able to act independently.

Regarding the way how people relate to traditions and how in return traditions influence the emergence of social space, it is possible to distinguish between two manners – the rigid and the conventional one. The rigid manner is characterized by the strict individual obedience to tradition without any doubt about its legitimacy. As a result, a closed social space emerges. The moral climate produced by this kind of space is unfavourable toward any alternative worldview, as well as to the ways of adaptation in the community. In such a case, every individual tries to comply with the homogeneity of one's social group, be it nation, ethnic group, or any other social collectivity. If they fail to meet that demand, people start to be inevitably treated as if they are endangering the order of society. They are perceived as deviant or even as mentally ill. Foucault, for example, describes how madness was invented exactly through the process of "othering", which created normality and gave the "normal" population a tool to characterise a part of the population as mentally ill (Foucault 2000: 141). Individuals who develop this kind of worldview tend to oppose any serious innovation. In such a case, the social space gives no way for the emergence of alternative social spaces within the community.

And vice versa, a conventional manner means high degree of individual freedom. As a result, an open social space emerges. People are encouraged to change tradition, to be innovative and open, and to look for new ways of adaptation in the community environment. Here the alternative social spaces so crucial for the development of the community emerged.

It is possible to examine both manners as two oppositional regime of truth, each judging things according to its own rules (Foucault 2000: 143ff). In reality these regimes of truth are often connected with each other, especially in case of the identity crisis.

An individual or a group influenced by traditions in a rigid manner tend to think and behave in following some rigid, collectively shared stereotypes. As a result, conformity toward "in-group" norms and values, as well as intolerance and even aggressiveness toward alternative ways of thinking and lifestyles become the collectively approved personal features.

The closed social space tends to produce authoritarian personalities. The self-identity of the authoritarian personality emerges as a solidarity bonding factor. An individual tends to look upon one's own group as central to everything. The group fulfils one's need for security
and provides a sense of belonging. A member of a group prefers one's own way of doing things, and perceives other groups as endangering "strangers" to one's own group. Instead of understanding alternative ways of life, such person chooses struggling against "strangers" rather than trying to live with them. This kind of mechanism is rather typical for many closed rural communities.

The openness of social space encourages individuals to choose alternative ways of thinking and lifestyles and, in so doing, to create alternative spaces for living, working, and leisure. These spaces are crucial in making the particular place attractive for creative individuals. As a result, a tolerant personality is developing. The emergence of self-identity of these individuals is based not on exclusion, but rather on acceptation and understanding of alternative ways of life, thinking, and acting. It tends to be more typical for urban communities, because the level of individualization within urban population is higher. It could be that people simply care only for themselves but are otherwise fairly isolated, even lonely. In this regard, they differ from village communities, which are much more connected, everybody knows everything about everybody, and everybody knows that. This knowledge functions as a strong social control and, because of it, rural communities are more closed and often more intolerant to the violation of their informal rules and norms.

Therefore, in any country, urban and rural populations function as different social systems. Perhaps the differences between both populations are in some cases greater than the differences between urban populations of two neighbouring countries. Nevertheless, cultural diffusion does occur through product exchange and communication. Migrants bring rural practices and beliefs to towns and cities and take urban patterns back home. The experiences and social forms of the rural area affect the adaptation to city life and often produce various interpersonal and social conflicts.

Caught between two or more social groups, people usually experience an identity crisis, or feeling of being marginalized. They are not fully a part of either group, and unless insulated by the emotional support system of a cohesive sub-community, they will most likely end up having an emotionally stressful life (Milgram 1970: 160-162). But people tend to differ in dealing with these problems. Those who are more authoritarian often struggle for status, power, and prestige in an aggressive manner. As a result, destructive ways of solving these problems tend to prevail over the constructive ones. People who tend to be more tolerant are more likely to emphasize openness to innovation as well as creativity, and they prefer to choose constructive ways of dealing with the identity crisis.

III. THE EMERGENCE OF THE WORLD SYSTEM: THE REST VERSUS THE WEST?

In the mid-1960s the concept of "global village" was proposed by Marshall McLuhan, while he examined the impact of mass media on the emergence of global culture (McLuhan 1964; 1967). This view expressed rather optimistic prospects on the world future so characteristic for the intellectual athmosphere of the mid twentieth century around the world. Technical progress, as one of the main traits of modernity, encountered as the background of social progress to solve the global problems of poverty, famine, social inequality, and violence. But the further global development has given much less reason for such an optimism. For better understanding the current situation we need examining the main tendencies in the emergence of the current conflict between urban and rural, core and periphery, or the "global city" and the "global village".

The emergence of the first pre-industrial cities and towns resulted from the process of state formation. The settlement hierarchy, i.e., a ranked series of communities differing in size, functions, and type of buildings, appeared, since the administrative and military systems of the state were developed (Kottak 1991: 138). Cities and towns became the centres of these systems. But the urban way of living became predominant only in the industrial era to be crucial for modernization of society.

The beginning of that era is initially traced to Western Europe. Due to some geographical traits of the European continent (high population densities, mild climate, and proximity of water resources), a large network of towns and cities appeared already in the medieval Western and Central Europe. As a result, the traits of urban way of living, characterised by individualism, personal autonomy, impersonality, and social mobility gradually became typical for Western Europe. Consequently, the principles of democracy, individual freedom, human rights, tolerance, and superiority of law can perhaps be considered as a result of the long-term dominance of the urban way of living and, hence, of that of the openness of social space.

Like any open system, a city tends to invade the surrounding territory. The great European "discoveries" of continents occurred between the 15th and the 18th centuries, when Europeans were seeking new ways for trade and new sources for raw materials. The world system with its "core" and "periphery" emerged (Wallerstein 1974; 1980; 1991). Some territories in North America, Australia, and New Zealand, where European colonists and their ancestors formed the majority of population, gradually became the part of the "core", while other parts of the world were excluded from this. As a result, the most developed, or "core", nations of Northern America, as well as of Western Europe, Australia, and New Zealand, may be currently considered as "centres" of the "global city".

During the colonial era the Europeans were faced cultures they found different and exotic. But however different these cultures seemed, the urban way of living was not still predominant outside Western countries as a "birthplace" of modernity. The closed rural communities with their personal and face-to-face relations were the principal social units almost everywhere.

Very often the colonizers regarded the non-Western cultures as "primitive", "savage", or "barbarous".  These biases advocated and legitimized many atrocities. An average 250,000 indigenous people had perished annually between 1800 and 1950. Foreign diseases (to which natives had no resistance), warfare, slavery, land grabbing, and other forms of dispossession and impoverishment contributed to this genocide (Kottak 1991: 155). In time, struggles against colonial oppression rose around the world, and the colonial era may be considered as the beginning of the conflict between the "global city" and the "global village". After the Second World War the colonial system crashed down, and by the beginning of the 21st century the world has changed considerably.

First of all, in the post-modern era the majority of people around the world are descendants of the non-Western groups. Some of the non-Western nations, like Japan and South Korea, became the part of the "global city" while combining their cultural traditions with principal traits of modernity. According to Harper, the countries with cheaper labour predominantly produce steel, automobiles, and other heavy goods (Harper 1989: 194-219). Some countries like Saudi Arabia produce the fuel that is so important for the Western nations. So the "global village" rapidly industrializes. It begins to play a vital role in the global economy. At the same time, the economy of the most developed nations is increasingly shifting from the production of goods toward the provision of specialized services, including information processing.  The value creation in the post-modern Western economies rests increasingly on non-tangible assets. As a result, the creative economy emerges. In Florida's sense, due to the openness of social space within the considerable parts of communities, the Western economies are still winning the global competition for talent (Florida 2005).

But within the "global city" we can increasingly observe the regional discrepancies in urban development. Many traditional centres of heavy good industries experience sharp declines in their population numbers, or urban "shrinkage" (Steinführer et al. 2007). Economic restructuring seems to be one major cause for a rather long-term loss of population as the core dimension of urban shrinkage. According to Großmann, "falling fertility rates prove to be a common source of urban shrinkage in most countries and cities of Western Europe and North America" (Großmann et al. 2008: 79-80). At the same time, several cities and towns with diversified, mainly knowledge-based, economy, and a variety of alternative spaces for living, working, and leisure, are avoiding the "urban shrinkage", while providing the high quality of life. According to Czikszentmihalyi, "[…] the actual quality of life – what to do, and how we feel about it – will be determined by our thoughts and emotions, by the interpretations we give to chemical, biological, and social processes" (Czikszentmihalyi 1997: 4).

As a result, the growing numbers of people seek their jobs, as well as the place of living, in order to maintain the life styles promoted by the culture of consumption. In Černoušek's sense, these styles gradually become "central"

in the processes of social perception (Černoušek 1986: 75ff). Due to mass media and global networks, such life standards are increasingly translated from the "global city" to the "global village "

But the contrast between these standards and real living conditions of the majority of people around the world is tremendous. Perhaps the global financial crisis, which we witnessed in the end of the 2000s, implies the crisis of the post-modern consumerist culture. The gap between "global city" and "global village", affluence and poverty, core and periphery is widening dramatically. It produces frustration and feeling of being marginalized. To deal with the identity crisis, people increasingly move to big cities and to the "core" regions and countries that constitute the "global city", despite of the numerous administrative barriers. They are seeking prosperity and security, but very often they end up disillusioned. These processes produce conflicts within the "global city", like the riots that were demonstrated in France in 2005. The growing number of radical ideological doctrines around the world advocates the traditional values of the "global village" and opposes the Western way of living that is still based on the main principles of modernity. Instead of "the clash of civilizations" (Huntington 1996), rather global conflict of "the rest versus the West" in its most extreme forms, like those we witnessed at the 11 September 2001 attack in New York, marked dramatically the beginning of the 21st century.

Benedict Anderson's idea of imagined communities explains the increasing role of the mass media in these processes (Anderson 1991). Since they have been introduced, the sense of belonging of people was strengthened because these in-group norms started to be effectively disseminated among larger groups of people, who started to feel related to other members of these groups, although they did not personally know them or even know that they existed. The practices of the totalitarian and, to a less extent, authoritarian regimes with their system of propaganda seem to be good examples of that.

The border between the "global city" and the "global village" often divides the same country, too. The case of Russia seems to be a very good example of that.  Although the majority (more than 70 percent) of people in Russia now lives in cities and towns, the traditions of closed rural community – *obshchina* – are still alive and well. This is a legacy of the rapid urbanization during the Soviet era, when the majority of rural population moved to cities and towns. The official ideology encouraged the traditional collectivism so typical for the *obshchina*. It was incorporated in the urban environment in numerous modifying forms, such as, for example, those of communal apartments.

After the collapse of Communism and the radical reforms of the 1990s, the Russian society changed drastically. It became imbued with the consumerist culture, and many Russians, especially the young and the middle-aged ones, started chasing the "Russian dream" to become *krutoy* – to run a successful business, to owe a luxurious dwelling, to drive an expensive automobile. Unlike in the Soviet era, numerous traits of the way of life of the "global city",

including enormous traffic jams and TV soap operas, became everyday reality in Russia.

But the market reforms produced a dramatic gap between affluence and poverty, as well as the growing criminalization within the society. As a result, a lot of Russians now experience the identity crisis, marked with a paradox: they want to follow the Western practices of consumption, but, at the same time, many of them want the old USSR back (Afanasyev 2001: 168-169). As a result, the hostility toward the Western-style democracy, as one of the main practices of the "global city", is increasing. At the same time, many people are highly sympathetic to the Chinese experience in combining the market economy with traditional state paternalism, as well as the main traits of the Communist regime. We suggest that such an identity crisis is resulted, in some way, from the contradictions of the process of urbanisation, and those of the urban way of living in modern Russia.

Based on the systematic phenomenology, our study of these problems is just in progress. Therefore, we are discussing only some procedures, as well as preliminary results of the analysis of the already gathered empirical data. While studying the psychological issues of these processes, we especially estimate the quality of life within the community. But this quality of life may be considered as a result of perceptive processes within particular environmental settings, i.e., the definite social space.

## IV.   ADVERTISING AND THE EMERGENCE OF SOCIAL SPACE WITHIN THE CITY IN CENTRAL RUSSIA

While supposing that advertising implies manifesting, more or less explicitly, stereotypes, norms, and values to characterize the social space within the particular place, we are currently analyzing the content of commercials presented at local electronic media within two big cities of Central Russia: Ivanovo (population: 406,465) and Yaroslavl (population: 605,408 ).  While our study is still in progress, the report includes only some preliminary results of the analysis of 653 and 728 commercials in Ivanovo and in Yaroslavl, correspondingly. We have evaluated some personal traits of people performed in commercials. As a result of content analysis, the data have been organized in accordance with their frequency distribution.

The most of the local commercials in Ivanovo (about 62 percent) welcomes down-to-earth individuals who are succeeding in business with the emphasis not on individual achievement, knowledge, and creativity, but rather on luck and common sense, while being included into the vast network of informal, close-knit interpersonal relations. Insolence, toughness, and simplicity are presented as socially desirable traits to achieve the prestige position of *krutoy*. The life strategies, which are declared, more or less clearly, in commercials, are based on rigid stereotypes about the gender roles, social statuses, or age, among other things. For example, the electronic media present mainly sex-typed images of female and male personality and behaviour to maintain the idea of male (*muzhik*) dominance, which is so characteristic for traditional *machismo*.    Therefore, to become successful, individual must be included into a homogenous social space, and not create any alternative space.

While analyzing the data obtained from the analysis of advertising in Yaroslavl, we noticed that the most of commercials (about 74 percent) seem to be stylistically neutral. Ones showed, more or less openly, that individual achievement, personal autonomy, knowledge, and competence seem to be socially desirable traits of individuals. For example, unlike in Ivanovo, the media present no sex-typing images, and there is no idea of male or female dominance. These messages tend to welcome new ideas, innovation, and creativity. Alternative lifestyles are not blamed, but, rather, encouraged as being useful for individual achievement, as well as for successful development of community.

To understand the differences between both types of commercials, we have analyzed the main traits of the cultural heritage and some local traditions both in Ivanovo and in Yaroslavl.

Having been known since the 16th century as a centre of the Russian weave handicraft, Ivanovo has been institutionalized as a city in 1871 with the Act of the Emperor Alexander II. But Ivanovo-Voznyesensk (as this city was named until 1932) continued to develop as a closed system, preserving the lifestyle of the Russian rural community *obshchina*. Such a scenario of urban development in this regard could be influenced also by geographical factors. Despite of its proximity to Moscow, Ivanovo is situated away from big rivers and the main railroads. Moreover, the city expanded only due to the growth of the textile industry. Because of this mono-structural economy its social structure was homogenous including mainly former impoverished peasants. In a closed mono-professional and mono-cultural community with rigid traditional instruments of social influence and social control, a high degree of conformity has been required. Tradition tends to affect an individual in its rigid manner. As a result, the closed social space motivated people to be more authoritarian.

During the Soviet era the Communist authorities were trying to turn Ivanovo into a model of a "city of future". Therefore, here the outcomes of the Soviet-style modernization were perhaps more obvious in comparison with many other Russian cities and towns. Today the results seem to be the opposite. On the one hand, Ivanovo has become one of the biggest university centres in Russia. Now there are nine universities and other institutions of higher education in the city, but on the other hand, the structure of the local economy is still based mainly on the textile industry and has not been considerably changed to produce any alternative social space. The extensive development of this industry, in a manner of the dawn of industrialism, required many low-skilled workers from the countryside who were forced to move to the city because of the collectivization of their lands. A large and sudden invasion of new people inevitably awakens a strong sense of community (Freudenburg 1984), and this is probably what happened here. But the elements of local traditions were mixed with official ideological patterns (it would be possible to define this phenomenon as

quasi-traditionalism). As a result, the new and old inhabitants of Ivanovo started to experience a kind of identity crisis. This crisis became much more obvious in the post-Soviet era, because of the crisis in the local mono-structural economy, which consequently led to high unemployment rates and deteriorating social conditions. In spite of the improvement of the situation in the mid-2000s, resulted from the rising oil prices and the influx of investments from Moscow (along with many traits of the lifestyle of the capital city), mainly low-wage service jobs have been created. The global financial crisis of the end of the 2000s threatens considerably such a model of urban development.

These circumstances seem to be important for estimating the quality of life in Ivanovo. Within the academic community of the city new ideas and technologies are successfully elaborated.  They could help the local economy to be restructured in a way of introducing new high-tech industries. But the dominant tradition is still defined by the closeness of social space. As a result, quasi-traditional ideas, attitudes, and values, while mixed with the main elements of the consumerist culture, are encouraging people to act in the authoritarian spirit and to oppose any serious innovation. For instance, despite of increasing traffic difficulties, people prefer to drive their automobiles everywhere. The automobiles themselves are regarded not as vehicles, but rather as symbols to show off wealth and prestige of krutoy. Consequently, pedestrians or bike riders are often treated as being of low social status. As a result, the pedestrian zones or biking tracks, or alternative spaces for pedestrians or bike-riders, are not developed. Although it is not the main reason that motivates potentially mobile, much sought-after talents to move to other cities and regions of Russia, it may be considered as one of the obstacles in improving the quality of life.

On the opposite, Yaroslavl is considered as one of the oldest Russian cities. Yaroslavl is still situated at the crossroad of the traditional pathways of Russian merchants. Therefore, throughout its history this city tended to develop an open social space. Its traditions have been flexible to different lifestyles of various social and professional groups and tended to affect an individual by its conventional manner. This has been encouraging the city dwellers to be more tolerant and open to change. In the national sense many innovative practices and novelties have been introduced in Yaroslavl, such as the first Russian professional theatre established in 1750 by Fyodor Volkov. The development of the city was seriously accelerated by the reforms of the 1860s. These reforms gave way to the appearance of the middle class in Russia, and Yaroslavl has become one of the centres of this process. As a result, it developed all the elements which make a small town comfortable and those that make a large city cosmopolitan.

During the Soviet era the Communists tended to consider Yaroslavl as an "unreliable city" due to the anti-Bolshevik rebellion which occurred in July 1918. Once it was included in the Communist social experiment, Yaroslavl was not considered as a model of the "city of future". The result of

this is that not only cultural (e.g., architectural) heritage of the city, but also traditional tolerance and openness are quite distinctive. Combined with a diversified structure of local economy, this situation favours providing ideas, know-how, creativity, and imagination, or alternative spaces,  so important in estimating the quality of life. For instance, unlike in Ivanovo, a vast pedestrian zone has been developed in the centre of Yaroslavl. It can be considered as an alternative space so crucial in preventing traffic difficulties and air pollution.

The numerous economic and social problems of Yaroslavl (such as the gap between affluence and poverty, high crime rate, terrible air pollution, etc.) are existing, but in comparison to the majority of communities in Russia, Yaroslavl, like Moscow, Saint Petersburg, Nizhny Novgorod, Samara, Yekaterinburg, and some other cities, is today perceived as one of the most probable places in Russia to provide a good quality of life (Neshchadin and Gorin 2001: 173). The data obtained from the recent survey research seem to support this idea. The majority of 214 students involved in this survey research in Yaroslavl (64 percent) do not want to move from this city after their graduation, like the young people from other relatively "prosperous" cities of Russia, including Moscow and Saint Petersburg. People, who were born in Yaroslavl, are increasingly avoiding the low-paid and low-skilled jobs, and leave them to the migrants from the economically deprived regions of Russia, as well as to those from other former Soviet republics. We can observe such a situation within the "global city" as a whole. On the other hand, although the students who live and study in Ivanovo (136 respondents) demonstrate much more tolerance and creativity, the majority of these students (67 percent) expressed that after their graduation they would like to leave Ivanovo for other cities, especially for Moscow (Kleyman 2007: 164).

## V.   Discussion/conclusion

Discussing the results of the study, we assume that when living in the more isolated communities with homogeneous, closed social space, people tend to demonstrate value orientations and life strategies of the authoritarian personality. On the opposite, the openness of social space and a variety of alternative spaces within the particular place make it attractive for creative individuals. Therefore, the rise of the quality of life may be resulted from the openness of social space. Nowadays such openness can perhaps prevent the processes of urban "shrinkage" and increasing regional discrepancies in urban development.

Since our study is a work in progress, this assumption may be considered only as a kind of hypothesis. Not only regional discrepancies in urban development, but, more broadly, the gap between the "global city" and the "global village" in Russia seems to be obvious. Some big cities, including Yaroslavl, are rather close to the "global city" because of their relatively open social spaces and a variety of alternative spaces. However, the majority of  Russian cities and towns, like Ivanovo, can be considered as being currently in transition from the "global village" to the

"global city" . They present rather hybrid forms, while mixing the elements of the post-modern consumerist culture with those of the quasi-traditional stereotypes, beliefs, and values. Here the closed, homogenous social space is still emerging. People who live in such cities and towns consider relatively "prosperous" cities, first of all, Moscow, as "another country" outside "the real Russia". The young people increasingly move to big cities despite serious ecological and social problems and administrative barriers. This situation can perhaps be explained as a result of a tremendous gap between Russian "core" and "periphery" considering the quality of life. As a result, the cities and towns of "periphery" experience the urban "shrinkage".

In turn, the quasi-traditional ideas and values that are widespread within the majority of settlements in Russia (e.g., within Ivanovo) are still influencing considerably the way of living within the big cities, as well as that of decision making within the elites. These popular attitudes may be considered as a background of the emergence of neo-Eurasianism as the official, in somewhat Soviet-like, ideology to advocate Putin's scenario of authoritarian modernization.

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# New Predictors of Organizational Citizenship Behavior and Employees' Efficiency in the Work Group: Emotional Work

Ph.D. Daniela Boţone

*Abstract*-**Organizations are complex entities, in which employees work with their hands, associating to this type of work a various quantity of physical effort (manual work); the same employees working with their intellect (intellectual work), the intellectual effort ranging this time also, according to the specific job requirements. This specific activity can be easily assessed in terms of number, frequency, intensity, tasks repetition (job description) and in terms of psycho-physical and psycho-social abilities (job specification). Work in an organization takes a third form.; emotional work/emotional labor: emotional labor reflects the management of emotions. This happens through mental effort, sometimes consciously, sometimes not, and its purpose is the change of personal feelings or emotions, so that these are in accordance with the "emotional rules" established by the formal group's norms, having a higher or lower intensity, on a shorter or longer period, instantly or slowly. Identity confusion, socio-professional stress, professional dissatisfaction, organizational silence are just a few of the negative effects of emotional labor, respectively of the discrepancy between the required emotion and the emotion experienced in reality by the employees of a large number of organizations.**

*Keywords*-emotional work, organizational citizenship behavior, surface-acting, deep -acting, group

## I. INTRODUCTION

According to the specialized literature from the field of organizational and economic psychology, the work group is defined as "two or more persons who interact and pursue common goals, have stable relationships, are to some extent interdependent and realize they are in fact part of the group" (Baron, Byrne, 2001).

The term of group is of Italian origin and derives from the terms "gruppo", "groppo", designating several painted or sculpted individuals that make up a subject and was first expressed in the paper „De arte graphica" published in 1668, translated by Du Fresnoy and made by R. de Piles.

The existence of work groups within the most diverse organizations is associated with going through several development stages, each involving several psycho-social processes. Thus, we have the following development stages of the work group and related to these, several psycho-social processes that characterize the stages. Therefore we can mention some of these processes: social categorization processes, stereotype and prejudice development, discriminatory

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*About-*[1]*Assistant Professor, Lucian Blaga" University, Sibiu(e-mail; danielapaler@yahoo.com)*

behavior, in group and out group mechanisms, attribution mechanisms, in particular the effects of the fundamental attribution error, the process of individual perception and direct applications of the implicit personality theory, etc.

Thus, if for the initial stages of the work group development, respectively the stages of "formation" and "outbreak", the specific mechanisms of social categorization are the formation of stereotypes and prejudices and discriminating behaviors between employees, through the other stages of this work group, i.e. the "normalization" and "functioning", powerful mechanisms of ingroup and outgroup prevail, which result in the voluntary/involuntary blocking of communication channels, content distortion of written and oral messages between employees and a very high frequency of fundamental attribution errors between employees.

Other processes that "color" the existence of a work group as early as the first hours of operation (of the work group) are two typical forms of organizational behavior, respectively organizational citizenship behavior and emotional work performed by employees. The study of these organizational behaviors is the subject of intense concern for organizations' managers in identifying new methods and techniques to go deeply into the problems of efficiency and organizational performance.

How effective can people become in an organization, which are the factors that contribute directly to their job efficiency, how can they become better professionals where financial resources are sometimes a problem for the organization's management? How willing are employees to provide an effective organizational behavior (expressed as altruism towards colleagues, loyalty to the organization, desire of professional development), as the work performed does not always provide the expected emotional comfort.

According to the definition developed by American researcher Dennis Organ, organizational citizenship behavior is "individual behavior that is voluntary, without being directly or explicitly rewarded by the formal reward system, and, overall, sustains the efficient functioning of the organization" (D. Organ, 1988, 32).

Since it is voluntary, this type of behavior is not an express requirement of the job specifications, such as the highly specific conditions of the contract between employee and organization, this behavior is rather a matter of personal choice, and therefore his absence is not generally considered punishable.

The term is also known as the good soldier syndrome being considered by D. Organ and his colleagues as an alternative

form of professional performance; furthermore, they argued that the low correlation between job satisfaction and professional performance is due to the meaning given to performance, generally defined by the quantity of output (products, services performed by employees), although some authors claim the existence of cultural differences in the structure of organizational citizenship behavior, even within the same culture, the study of P. Podsakoff (2000) proves that all these can be organized around seven dimensions: altruism, fair play, organizational loyalty, organizational conformism, individual initiative, citizenship and personal development.

In the public evaluation of the alternative form of professional performance there is a great deal of subjectivism, as the criteria are variable. However, a correct and more objective evaluation depends on the degree of information and education of the person who conducts the evaluation.

In the research conducted so far on this type of behavior, American researcher Vanessa Chaves (2001) has identified among the predictors of organizational citizenship behavior, individual professional satisfaction, conscientiousness and the level of career development. In addition, in this study it was proven that the work status influences the development of organizational citizenship behavior.

In a study conducted on 257 employees, Christina Stamper (2001) found that part-time employees express and display a lower level of organizational citizenship behavior than full-time employees; the researcher identifies a moderating variable that occurred in this study, organizational culture. In this study was formulated and confirmed the hypothesis that the type of organizational culture, respectively a participatory organizational culture will determine a high level of organizational citizenship behavior among employees of the institution.

John Warren Wilson identifies in a comprehensive study made in 2001 in several American companies, individual political behavior in the organizational environment and employee perceptions regarding the policies of the organization, as significant factors in the emergence of organizational citizenship behavior.

Self-perceived discrimination by employees at work (E. Ensher and J. Steward Donaldson, 2001) is strongly correlated with professional obligations, professional satisfaction and organizational citizenship behavior in the case of 366 employees with the average age of 43 years (including workers, team leaders and workshop superintendents) in an oil equipment factory.

Counterproductive work behavior and its relationship with organizational citizenship behavior was presented in an illustrative study conducted by researchers Paul E. Spector and Suzy Fox (2002), in the paper "An emotion - centered model of voluntary work behavior: Some parallels between counterproductive work behavior and organizational citizenship behavior". The authors have characterized counterproductive work behavior (CWB) as a form of aggression and sabotage intended to negatively affect the organization as a system and its employees; in this approach

organizational citizenship behavior is viewed as a pro-social behavior intended to help the organization and its members. In this paper the authors introduce a new model - "the CWB- OCB emotion model" - which considers organizational behavior as "a result, outcome of interactions between individuals (potentiated with a certain level and capacity of emotions display and expression) and the organizational environment in which it operates" (Paul E. Spector and Suzy Fox (2002). This model includes the following dimensions: counterproductive work behavior (CWB); organizational citizenship behavior (OCB); the perception of control; personality; negative emotion; positive emotion; evaluation/interpretation; organizational environment.

The above-mentioned American researchers support the idea that negative emotion causes an increased level of CWB, while positive emotion will increase the level of organizational citizenship behavior (OCB). CWB is associated with the following characteristics of personality: anxiety, locus of control and delinquency. The OCB is associated with empathy and the perceived ability of the subject to help others. The management of emotion occurrence conditions can help us to better control the voluntary behavior of workers in order to increase both their and the organization's level of well-being.

## II. THE ROLE OF EMOTIONS IN ORGANIZATIONAL BEHAVIOR

Pre-eminently, the individual is an emotional being; emotions are the most important resources of the individual and are also displayed at the workplace; emotions can be educated, and the benefits obtained from this process are enormous for the personal efficiency but also for the organizational efficiency.

Recognizing the existing emotions within organizations is essential. Organizations that are interested in maintaining a "healthy emotional environment" will cause less suffering and will obtain more efficiency and a more productive behavior – states American management professor Neal M. Ashkanasy (2003). Of course, we cannot talk about an ideal type of perfectly healthy emotional environment within organizations, with a complete absence of stressors; this would be impossible and, as Hans Selye stated, "complete freedom from stress means death to the individual". Therefore, there will always be a certain amount of stressors (except for the professions that through their content of tasks and preparation of employees involve a great deal of social and professional eustress and distress, risk and responsibility, that will affect both in a favorable way the employee's behavior (eustress reactions), and in an unfavorable way (distress reactions). The important thing is how the intensity, frequency and type of stressors are managed both at the individual's (employee's) level, and also at an organizational level, through specific actions of the decision factors.  For this purpose, organizations should maintain, support the value of a "constructive emotional culture, which in turn may create an organizational behavior that will directly contribute to the health of the employees" (N. M. Ashkanasy, 2003).

Organizations are complex entities, in which employees work with their hands, associating to this type of work a various quantity of physical effort (manual work); the same employees working with their intellect (intellectual work), the intellectual effort ranging this time also, according to the specific job requirements. This specific activity can be easily assessed in terms of number, frequency, intensity, tasks repetition (job description) and in terms of psycho-physical and psycho-social abilities (job specification).

Work in an organization takes a third form, i.e. emotional work/emotional labor (Septimiu Chelcea, 2008). The term "emotional work" has been described for the first time in psycho-sociology in 1979 by Arlie Russell Hochschild and has been synthesized in the paper The Managed Heart: Commercialization of Human Feeling, 1983. According to the author, emotional labor reflects the management of emotions. This happens through mental effort, sometimes consciously, sometimes not, and its purpose is the change of personal feelings or emotions, so that these are in accordance with the "emotional rules" established by the formal group's norms, having a higher or lower intensity, on a shorter or longer period, instantly or slowly. Identity confusion, socio-professional stress, professional dissatisfaction, organizational silence are just a few of the negative effects of emotional labor, respectively of the discrepancy between the required emotion and the emotion experienced in reality by the employees of a large number of organizations. Thus, we can differentiate professions according to the intensity of emotional labor that must be displayed; thus, the professions that require the obligation to express the feeling of hospitality are professions with intensive emotional labor because the word hospitality combines images of kindness and smile.

J. G. Van Maanen and G. Kunda (1989) (after, Chelcea, 2008), assert that the approach of emotion as a state is more likely a question of context and it depends on each employee's style to emotionally adjust to a particular context; consequently emotion can be controlled and "played" by each individual as one knows, can or is required by the job's specifications. In this context, emotion becomes instrumental.

Currently, it is estimated that half of the jobs impose emotional labor and three quarters of the women's jobs require the management of emotions. Characteristic for women are the situations of flight attendants and policewomen: the firs must control their emotions, to express positive emotions in every situation, even in the case of imminent danger, and on duty policewomen mustn't express any emotion. (S. Chelcea, 2008). Arlie Hochschild (1983) refers to the trust of the employee in the morality of the emotional game. When an employee considers that he/she conforms "willingly" to a certain emotional game imposed by the task, he/she remains faithful to the emotional rules (for example, to appear sad when it is required by the situation), the game is interiorized and becomes a part of the employee's mind; in this situation the employee understands the emotional game, he/she identifies with it, expresses and follows it. To follow the emotional game in an "unwillingly" is another form of emotional labor

but the employee does this, being forced by the specific regulation of the profession or by the superior's requirements; in this situation, the employee does not understand the purpose of his behavior, does not share the same objective and is inclined to outrun the objectives of his work, sometimes resorting to cynicism.

According to the theoretical approaches, the conceptualizations of "emotional labor" can be classified into three categories: in the first category fall those theories which conceive emotional labor as an emotional state which originates in social, organizational norms and requirements; in the second category fall those theories which suggest that emotional labor consists of assumed behaviors, to coordinate and control an explicit or implicit emotional state; the third group of theories explains the emotional labor through a close relation between states, behavior, and/or situational factors. In this category also fall the conceptualizations of J. Morris and D. C. Feldman (1996, after, Chelcea, 2008), which defined emotional labor as an assembly of five situational factors (frequency, duration, variety and intensity of the emotional display) and a factor, individual state (emotional dissonance);

A recently appeared model in psycho-sociology is the model defined by Alicia Grandey (2003). She constructed a comprehensive model of the emotional labor in which the concept is more likely defined as an act than an emotional state, with situational factors and variable effect. Emotional labor is an emotional regulation process enacted by the response to the organizational rules, such as the interaction expectations in the field of services. Emotional regulation is used when the confrontation with the organizational requirements felt by the employees takes place and it can be acquired by surface acting and deep acting (after, A. Hochschild, 1983).

Analyzing the role of emotional dissonance in the prediction of the emotional labor, W. J. Zerbe (2002) distinguishes between "the degree of incongruity between felt and displayed or mimed emotions" and "the incongruity between displayed, expressed emotions and local, situational norms". Emotional dissonance should be viewed as a pure emotional state that occurs prior to the act of emotional labor, it is not a conflict between felt emotions and the objective organizational requests (written rules or instructions of the supervisor); emotional dissonance is rather the result of discrepancy between felt emotions and an employee's perceptions about the type of emotional display required by the situation (after, Goleman, 2007).

Thus, emotional labor is nothing but motivated, voluntary behavior, expressed by the employees of an institution, in their desire to reconcile their emotions, feelings, following the installation of emotional dissonance.

How often will it be required in the job description to be kind, to smile graciously? It remains to be seen!

The author of this study attempted to answer a part of this question through a practical study in hospitals, prisons, industrial organizations and organizations from the hotel industry, study that is in the process of being published in a specialized journal in Romania. The study was made by 310 employees; the results confirm the hypotesys that the level

of organizational citizenship behavior correlate with the type of emotional work;  for this group, employees who made emotional work by deep-acting at work,  had the level of organizational citizenship behavior higher than the employees who made emotional work by surface acting.

With great implications in the culture of each population, we are currently witnessing a real emotional culture, providing the emotional nuances specific to emotional labor performed by employees of organizations, institutions from different geographical areas. Management of emotions does not always cause alienation of the individual from his work, but only in the case of individuals who have an impulsive emotional orientation.

Taking into account the ability of individuals to react actively, to relate differently to a situation, thus leading to an economy of emotions and according to the sympathy theory developed by Candace Clark (1987) individuals do not automatically apply the norms of the emotional culture: they are actively engaged in exchanges of emotions with other individuals, from which they expect to obtain a profit.

It leads to a "microeconomics" of emotions - we offer emotions and expect emotions in return: love for love, sympathy for sympathy etc. - but also to a "micro-politics" of emotions, given the fact that according to the social position, emotions are associated with emotional resources.

It might be a little bold to associate the term "economy of emotions" to a complex of emotions such as sympathy, because by showing sympathy to a person, we provide support for overcoming the critical situation, we encourage it, which represents a genuine pro-social behavior. (S. Chelcea, 2008).

Both in daily life and at work we are invaded by emotions. We start with the emotion of joy or feeling of happiness that we were accepted to a job interview, but what emotions shall we face in the next stages of our professional development? What emotions are we meant to experience?

Analysis of mental demands of the new profession (from the field of public relations, customer relations, advertising, etc.) in the light of psycho-socio-cultural theories of emotions could suggest some ways of preventing alienation, socio-professional stress, cynicism, and organizational silence, in the case of emotional labor suppliers. Thus, identifying the role that emotions and emotional life play in the social and organizational behavior will contribute to the development of a more sensitive point of view regarding their impact on the workplace, emotions that arise not only in dramatic situations, but also in the daily tasks where they often go unnoticed and influence the professional performance of the employee.

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# Patterns of Speech Accommodation and Lexical Formality in Telephone Conversations of Persian Native Speakers

Azizollah Dabagh[1] Anna Mirzaian[2]

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*Abstract*-Many people have a "telephone voice," that is, people often adapt their speech to fit particular situations and to blend in with other speakers. The question is: Do we speak differently to different people? This possibility had been suggested by social psychologists in terms of a theory called *Accomodation Theory* (Giles, 1994). According to Holmes (1994) "… converging toward the speech of another person is usually a polite speech strategy … and to deliberately choosing a language not used by one's addressee is the clearest example of speech divergence" (pp.255-257). The present study aimed at investigating this common process in the course of everyday telephone conversations. In order to find contrasting varieties of Persian in different situations, a 28-year-old male subject was asked to record his everyday telephone conversations during a week using a cellphone which resulted in 50 short conversations. Using Joos's model of formality styles in spoken English (1961), the researcher tried to explore 2 main aspects of the speaker's lexical accomodation, namely *convergence to* or *divergence from* the addressee. The results suggest that the subject's lexical choice, and subsequently, patterns of style vary interestingly according to his addressees in different conversations and have generalizable implications for other Persian speakers

*Keywords*-Speech Accomodation; Convergence Divergence; Lexical Formality

## I. INTRODUCTION

Communication Accommodation Theory (CAT) (Giles 1994; Gallois et al., 2005) explains some of the cognitive reasons for code-switching and other changes in speech as individuals seek to emphesize or minimize the social differences between themselves and their interlocutors. The theory argues that we accommodate linguistically towards the speech style, accent or dialect of our interlocutors, and we do this, to put it simply, to gain social approval. In later refinements of the theory, paralinguistic features (such as speech rate and fluency), and nonverbal patterns (such as eye contact, body movement, etc.) have been included in the analysis, and CAT makes a more fine-grained distinction between different types of (non)-accommodation, such as counter-accommodation and on intergroup characteristics, but it includes interpersonal features, integrates features of cultural variability, and over-

About[1]- Assistant Professor, Department of Foreign Languages, University of Isfahan, Iran. (e-mail;dabaghii@fgn.ui.ac.ir)
About[2] Post-graduate Student, University of Isfahan (e-mail;azizolahd@yahoo.com)

and under-accommodation and is called Social Accommodation recognizes the importance of power. The major theoretical reference for SAT/CAT is Social Identity Theory (SIT) (Tajfel and Turner, 1979) which argues that individuals attempt to categorize the world into social groups (i.e. ingroups and outgroups). Sociolinguists argue that when speakers seek approval in a social situation they are likely to converge their speech to that of their interlocutor ( Holmes, 1992) and this can include, but is not limited to, choice of language, accent, dialect and even paralinguistic features used in interaction. In contrast to convergence, speakers may also engage in divergent speech. In divergent speech individuals emphasize the social distance between themselves and their interlocutors by using some linguistic or even non-linguistic features characteristic of their own group. *Audience design* is the name Bell (1984) gives to his sociolinguistic model in which he proposes that linguistic style-shifting occurs in response to a speaker's audience. He argues that speakers adjust their speech primarily towards that of their audience to express solidarity or intimacy with them, or away from their audience's speech to express social distance. Both convergence and divergence are linguistic strategies wherby a member of a speech community minimizes or accentuates linguistic differences respectively. As we have always noticed, people may converge or adapt their speed of speech, the grammatical patterns, their intonation and the length of their utterances according to their addressees (Holmes, 1992). One important aspect of speech convergence is its dichotomous categorization. Suppose, for example, a man going for a job interview might decide to speak with a more prestigous accent in order to be better percieved by the interviewer thereby practicing *upward convergence*. On the ather hand, the owner of a small firm might shift to a less prestigous accent while communicating with his laborers in order to reduce the feelings of difference in status between them, thus practicing *downward convergence*.

One important aspect in the concept of accommodation is the level of formality with which a speaker speaks in different social settings. It has been one of the most analyzed areas in the field and discusses the cicumstances in which the use of language is determined by the immidiate situation of the speakers. Stylistic variation results from the fact that different people may express themeselves in different ways, and that the same person may express the

same idea quite differently when addressing different people, using different modalities, or tackling different tasks. As Labove (1972) noted," the most immidiate problem to be solved in the attack on sociolinguistic structure is the quantification of the dimension of style" (p.245). This problem may be substantially simplified by focusing on just one aspect or dimension of style. Perhaps the most frequently mentioned of these aspects is *formality*. Almost everybody makes at least an intuitive distinction between formal and informal manners of expression. The Longman Dictionary of Applied Linguistics (Richads, Platt & Weber, 1987) defines " formal speech" as follows: " The type of speech used in situations when the speaker is very careful about pronunciation and choice of word and sentence structure (p.109). This definition gives us an idea of what a formal situation is, but does not define formal speech as such; it just offers a hypothesis of what a speaker pays attention to in certain situations. A formal style will be characterized by detachment, precision, and " objectivity ", but also rigidity and heaviness; an informal style will be much lighter in form, more flexible, direct, and involved, but correspondingly more subjective, less accurate and less informative. Writers, especially in language teaching, have often used the term "register/style" as a shorthand for formal/informal style (Halliday,1978; Trudgill, 1992). Though style-shifting is not of main interest in the present study, it is to a geat extent related to the purpose of this study which is to define situations where the level of formality of language varies according to the situatiuon. As the situation and consequently the addressees vary, the speaker feels the need to speak in a different manner in order to maintain social interaction. These differences are very much worth noticing since they are part and parcel of our everyday social life. One interesting and revealing context of formality variations is a person's everyday natural "telephone conversations". Obvious as it may seem, each person has a "telephone voice", that is, he/she adapts his/her speech according to the immidiate addressee(s). This is a good context for speech accommodation with special attention to formality variation with having it in mind that here the face to face interaction does not exist and speakers just hear each other. There have been several models proposed by linguists and siciolinguists for categorizing speech such as the one proposed by Quirk et al (1985) which devides language to 4 classifications namely from "formal to very informal, casual and familiar" over a spectrum. Not strangely, there is very little agreement as to how such spectrums of formality should be devided. In one prominent model, Joos (1961) describes five styles in spoken English:
Frozen: Printed unchanging language.
Formal: One-way participation with no interruption
Consultative : Two-way participation with background information provided
Casual: Used in in-group frieds and acquaintances.
Intimate: Non-public talk with private vocabulary.
Joos's model is relatively an old but efficient one and it has usually been used in investigating style-shifting patterns. Several studies have delved into the concept of linguistic

accommodation but non, so far, has been devoted to investigate this phenomenon in telephone conversations on the one hand and in Persian on the other. In the present study the researchers use joos's crieteria to investigate lexical formality of a persian speaker's telephone conversations. This study provides further evidence of an explicit link between social situation and level of formality of the language used. Accordingly, a brief discussion of some of the recent and relevant literature on speech accommodation is in order before turning our attention to patterns of accommodation in telephone conversations

## II.    REVIEW OF LITERATURE

In his seminal paper, Ladegaard (2009) has investigated resistance and non-cooperation as a discursive strategy in authentic student-teacher dialogues which showed that non-cooperation and non-accommodation may be employed as the preferred discourse strategy, and that the aim of communication may be to miscommunicate rather than to communicate successfully.

 In one of his studies, Bell (1984) focused on two radio stations which shared the same recording studio and some of the same individual newsreaders.One station attracted an audience from higher socioeconomic brackets and the other, a local community station, drew a broader range of listeners. His analysis of newsreaders' speech revealed that they spoke differently based on the intended radio audience. Bell concluded that the most plausible way of accounting for the variation was that the newscasters were attuning their speech to what they percieved to be the norms for the respective radio audiences.

 Some linguists (e.g. Kirk, 1988; Gales,1988; Blanche Beneviste,1991) have tried to determine the formality level of a speech extract by considering the frequency of words and grammatical forms that are viewed as either "familiar" or "careful", such as "vous" vs. "tu" or the omission of the negative particle in sentence negation in French, and the frequency
of the auxiliary " be" in English. The underlying assumption of these approaches is that formal language is characterized by some special "attention to form" (Labove,1972). Heylighen and Dewaele (!) have proposed an emperical measure for formality, called F-score, based on the average degree of deixis for the most important word classes. They showed that nouns, adjectives, articles and prepositions are more frequent in formal styles while pronouns, adverbs, verbs and interjections are more frequent in informal style.

  A similar study was conducted by coupland ( 1980, 1984, 1988) in Cardiff , in which he was eager to know whether we speak differently to different people. To this aim, he decided to find a situation in which one single speaker spoke to a wide range of interlocutors. Thus, he chose an assistant in a travel agency in the middle of Cardiff and asked her to participate in his study and she agreed to have a microphone located in front of her counter to record the conversations.The results confirmed Accommodation

Theory though Coupland was mainly interested in pronunciatin aspects of the data.

In a similar vein, the present study seeks answer to the question of formality in natural conversations, but here, instead of natural face-to-face conversations, thelephone conversations have been chosen since the discourse of such conversations is an unanalyzed area in the works concerning sociolinguistics. Moreover, a few studies in Persian if any at all, so far have explored such patterns in telephone conversations.

### III.  DATA

In order to gather the relevant data, a 28-year-old male subject was asked to record his telephone conversation during a week using his cell phone recording apparatus. He was chosen because his job as a mechanics engineer required him to have several calls with a range of different people during a day. He was allowed to exclude any conversation he thought too personal to be included in the data. Through this data gathering procedure, we came to about 50 natural conversations he had had with different people during that week. Not strangely, in the process of opening the audio files, some of the files didn't open whatever device were used; also, a number of conversations were too short to have any informative data to our purpose and some others , though of a reasonable length, did not include any revealing information. Thus, there remained 22 conversations which were long enough and included the relevant features. After transcribing the conversations, the parts which contained specific information, namely formal/informal lexicon as well as some other interesting segments related to the topic of the study, were translated into English. It should be mentioned that some aspects of the conversatins were not traslatable into English. For example, In the conversations the subject has with his wife or his close friends , he has a noticable Isfahani accent which could not be conveyed through translation.

### IV.  DISCUSSION

The article provides, first, a brief discussion of Gricean cooperation hypothesis (1973), since any discussion of cooperation in pragmatics will have to consider Grice, and we will discuss briefly how the concept of cooperation is percieved and interpreted in the pragmatic literature. Secondly, we will present and analyze some examples of authentic communication, in this case, telephone conversations where the subject talks to a range of different addressees, sometimes cooperating and other times avoiding to do so. We will discuss how the subject of this very study shows his oftentimes resistance or counter-acccommodation, to use CAT's terminology, and the potential underlying motivation behind them, by using some contextual clues such as minimal responses, silence and lack of speech convergence.

Conversations are not a " succession of disconnected remarks", but cooperative efforts where the participants recognize a common purpose, " or at least a mutually accepted direction" (Grice,1975,p.43). As an efficient model for analysing communication, Grice developed his famous maxims of quantity, quality, relation and manner (1975). In her discussion of Grice's theory, Thomas (1998b, p.176) points out that surprisingly few of those who have drawn heavily on Grice in their own work have noticed the many ambiguities in his theory, and bothered to define how they themeselves use and understand the concept of conversational cooperation. One important issue in pragmatics literature on cooperation is the question of universality of Grice's theory. Grice never explicitly claimed that his theory was universally true, but it is often assumed in the literature that the cooperative principle and the maxims have universal application. Levinson (1997), for example, mentions a number of specific, non-linguistic examples of (non)-cooperation and argues that when a behavoiur falls short of some natural notion of cooperation, then it is because it violates one of the non-verbal analogues of the conversational maxims. He says that "this suggests that the maxims do indeed derive from general considerations of rationality applicable to all kinds of co-operative exchanges, and if so they ought in addition to have universal application" (p.103). This study is simply trying to categorize natural speech on the basis of Joos's model (1961) and provides some evidence for divergence or non-accommodation on the basis of Gricean maxims.

### V.  PRESENTATION OF DATA

We will now turn to some examples of real-life discourse, more specifically telephone conversations recorded during a whole week. The true aim of this study is not to examine Gricean cooperation. Rather, the main objective is to study patterns of accommodation or cooperation, to use Grice's term, and comparing the formality of utterances in relation to different speakers on the phone. The context under which the recordings were made are authentic. The study was conducted with one Persian speaker as the main subject of the study and some other addressees who trigger variations in the subject's speech in terms of the formality level he exploits in his conversations. Some examples from the recorded data have been selected and will be analyzed in relation to the concept of speech accommodation. However, these examples are by no means unique; infact, it would be more accurate to see them as examples of a preferred discourse strategy which in this particular context and situation seems to be the norm rather than exception. Notice that in all the examples presented here, one party, namely the subject (A), is kept constant and the addressees vary. All the examples will be presented in succession without comments and analyzed thematically in the following section. The followiong excerpts are some parts of the conversations (my translation) between the subject and his wife (see Appendix A for transcription conventions).

*Example 1* ( subject (A) and wife(B))

A:   Hey!
B:   How are you?
A:   Fine!
B:   What's up?
B:   How's everything?
A:   I'm in the office.

B:   In the office?
A:   Yeah!
B:   What do you have for lunch?
A:    (3.0)…..I don't know!
A:   What have you cooked?
B:   I've cooked potatoes.
A:   Wow! Thank you very much
Example 2
B:   Do you wanna go to your mom's house or you ' ll stay in the office?
A:   Office (3.0) Today's Thursday.
B:   Do you wanna go there if you won't stay at the office?
A:   What time are you gonna go out?
B:    In half an hour.
A:   You're gonna go at 2 o'clock?
A:   I can't come there; I'm down in the mouth.
A:   I have an idea! I go to my mom's house.
A:   Excuse me!
B:   Welcome!
A:    I remembered something else.Will you bring me the book "J. mat"?
B:    My bag is already full!
A:    Bring it ! Is it Sedighi's book or someone else's? The large one!
A:   Thank you so much !
Example 3
B:   Are you awake?
A:   Yeah. Already, I am.
B:   I'm coming//
A:   //  Shake a leg!

The following excerpts are taken from conversations the subject had with his collegues and other addressees.
*Example 4*  (Subject (A) and addreessee (B))
B:  Mr. …..?
A:  Hello?
B:  Good morning! This is from MWIT institute.
A:  Yes, welcome.
B:   Mr… …….., we had your company at our computer exhibition.
A:  Yes, right!
B:   You are well informed that you had registered for a seminar.
A:  OK!
B:   I shall inform you that our seminar will be held on Monday at 4:30.
A:  Let me just have a look at my schedule; On the level, we go out of the city 3 days a week and when we return it's about 4 or 5 pm. If I can manage, I'll enjoy your company
*Example 5*

B:  Good morning!
A:  Thanks.
B:  It's about Emam khomeini's boiler room in……….
A:  Yes.
B:    I've talked to …..About it and we're gonna use a 189000 Pars torch.
A:  Yes, thanks.
B:  I'll tell you what to do tomorrow.

A:   I see. Isn't the problem solved?
B:   Not yet.
A:  Alright. I'll be at your service tomorrow.
Example 6
A:  Hi. How are you?
B:  Fine. And you?
.A:  The students' parents complain that their children have been feeling cold during these days
B:  Ahhha.
A:  And I called Mr. Rahmati and talked to him

## VI.   ANALYSIS OF DATA

We will now turn to an analysis of the excerpts. We will focus on the two types of linguistic strategies the subject has used and their potential underlying motivations.

It is quite clear that while talking to an intimate relative or fiend, we normally use informal and even intimate phrases, to use Joose's terms, and that this intentional informality creates a sense of in-group membership between the participants. In Ex 1, the way the subject starts greeting with his wife is a clear example of informal choice of lexicon which would certainly differ in case the addressee was one of the out-group members. One important issue to be mentioned here is the strong Isfahani accent the subject has when talking to his wife which could not be translated into English. We

see the same thing in Ex 2, where the subject's speech is full of contractions, colloquial phrases and highly informal wording as in "I'm down in the mouth "or" the large one" in the last line which when compared to its Persian source text loses its informality to a great extent. The word the subject uses for "large" in Persian is definitely categorized under intimate style according to what Joose has suggested. This conversational cooperation shows that the subject feels free to ask his wife to do him a favor and his "untranslatable" accent is again salient in this excerpt. What is interesting here is the way the subject thanks his wife for bringing him the book; he uses almost formal, if not highly formal, words to show his gratitude which may be a case of abrupt speech divergence. The conversation has a normal smooth flow up to the point he thanks his wife in the last line when he says " Thank you very much" which is in sharp contrast to his previous utterances in terms of formality level. The reason behind this may be the fact that the subject feels that they are not in the same position now and that his wife should be respected for what she is going to do, that is, A sees B more powerful in this situation and this makes him choose a formal way of appreciating her. Likewise, in Ex 3, which is a short  conversation between A and his wife (B), the last line, the sentence " shake a leg!" , is another  example of conversational accommodation, in this case convergence, towards the addressee. As it can be inferred from the data, in this short talk, A is waiting for B to pick him up and he is in a hurry to go somewhere; that's why he pays almost no attention to the form he chooses to express his hurry. We also see a case of turn-taking violation in Ex 2 in the same last line, where A does not wait until B finishes her talk and hence, again due to being in a hurry, interrupts her. The next

set of features we will look at is minimal responses (such as, for example, yes, Okay, right, etc.). The function of minimal response is to keep the conversation going; minimal response is supposed to encourage the speaker to continue his/her speech to provide more information. There are some examples in almost all the excerpts, especially in Ex 4, where a lady calls A and invites him to take part in a seminar. In this conversation, the lady who is calling our subject is almost unfamiliar to him and the subject answers just by short phrases and simple sentences. The woman speaks quite formally. According to Joos's model (1961), this is consultative style because there is a lot of back-channeling. Here, the subject converges towards the way the woman speaks, first of all, because his addressee is a woman and after that, because she uses formal words. By the way, defining "formal" is not as easy as it may seem. But interestingly, in some parts you

can obviously see the shift of style and a sudden change in the lexicon used. For example, notice the sentence "On the level…………If I can manage, I'll enjoy your company. In Ex 4. As opposed to other phrases the speaker uses earlier in this conversation, it seems as if the subject forgets the immediate situation and mixes his formal and informal lexicon. Throughout the whole conversation, the subject answers with one-word phrases to confirm the addressee but suddenly at the end of the conversation he starts explaining and as I mentioned, uses informal phrases. This can be related to another concept which is called *style shifting* during a conversation. The initial style of speaking at the time of starting this conversation and the sudden shift that we see at the end of it, is another interesting aspect of conversation analytical research which can not be covered in the present study. Ex 5, is conversation between A and a colleague and is an example of formal talk. In this relatively short conversation, again we see examples of minimal responses uttered by A and a final formal sentence which shows the distance between A and the immediate addressee. As we can see, the person who starts the conversation uses specific phrases and contractions which are usually associated with an informal style of speaking. However, these utterances are answered just by A's minimal responses and finally bu a highly formal sentence to accentuate the difference between them. If we consider the motivations for speech divergence in SAT/CAT, A's behaviors in the related seem to fit perfectly. He clearly defines the encounter in intergroup terms and desires a positive in-group identity. Finally, In Ex 6, A is the initiator of the conversation and we can see a case of downward convergence here, which I explained in the introduction section. What was generally observed in all the conversations is that when A calls someone, that is, when he starts a conversation, he talks freely, in terms of quality, and more in terms of quantity. This is the case in Ex 6 where A telephones one of his co-workers whom he considers in a lower position and hence he talks with more authority and freedom. He does not pay attention to his choice of word and does not try to hide his accent, though it is not evident in the English translation.

Central to the issue we are analyzing in this article is first, the fact that SAT/CAT was devised to explain the motivations underlying shifts in people's communication style, and second, "the idea that communication is not only a matter of exchanging referential information, but that interpersonal as well as intergroup relationships are managed by means of communication." (Gallois et al., 2005, p.123). Another issue which is not limited to a single conversation is the phenomenon of relexicalization

which is defined as the repetition and rewording of the same ideas. All the conversations, even those which are not included in this study, are abundant with somehow redundant statements which are reworded by the speakers. To give an example, notice the conversation between A and his wife when they talk about A's going to his mother's house. This may be a violation of the maxim of quantity which requires speech to be as long as needed, not more or less than that. In the same conversation, there is a sentence, "….Today is Thursday." which seems totally irrelevant in relation to Grice's relation maxim. The justification of such authentic violations is not within the reach of this study, but taking the immediate oral discourse into consideration may assist answering these questions

## VII.   CONCLUSION

To sum up, the aim of this study was to find patterns of accommodation authentic conversations and explain the underlying motivations which result in these utterances. Communication Accommodation Theory (Gallois et al., 2005) and Social Accommodation Theory (Giles, 1973; Beebe and Giles,1984) would seem to come along way towards explaining how 'meaning' in communication only makes sense if we consider the social and, we might add, the psychological positioning of the communicators, either in face-to-face communications or in telephone conversations, and if we consider carefully how macro-level social structures of our society have bearings on micro-level situational contexts, such as authentic conversations

## VIII.   LIMITATIONS OF THE STUDY AND FUTURE DIRECTIONS

Delving into conversation analytical works leaves always leaves open the scene for future research to go on with the various unanalyzed aspects which may have been ignored due to some limitations in time and scope or may just have been neglected, unintentionally. This study is not an exception. There are some orientations which were not investigated in the data collected. First, style-shifting patterns are worth paying closer attention in future research. Also, researchers may focus on the shift of accent as an

aspect of speech accommodation. As we saw, in this study there were several cases of accent accommodation without paying due attention to them. Another area which requires

more research is the use of general extenders in the course of our everyday conversations and the present data abound in such elements. Another

contextualization cue which was ignored in this analysis is voice modification which is a paralinguistic feature in

natural utterances. And last but not least, as Richards (2008) suggests, in producing a style suitable for a specific situation, lexical, phonological and grammatical changes may be involved. This study tried to investigate formality at the level of lexicon and leaves open other aspects of variation in style for further research

Appendix A

Transcription conventions

● A comma (,) indicates a short pause (half a second or less).
● Numbers in parentheses (2.3) show longer pauses in speech.
● Bold face is used for loud speech.
● Underline is used for simultaneous speech.
● // indicates an interruption

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# Mona Lisa Gaze Principle

Abraham Tamir, Department of Chemical Engineering, Ben-Gurion University of the Negev, Beer-Sheva, Israel.

Abraham Tamir

*GJHSS Classification*
*Solitary Column Article*

People looking at Mona Lisa, the famous artwork of Leonardo Da Vinci, believe that she looks at them from every direction they will look at her. However in a survey the author has conducted, that has never been done before, 500 people were asked to look at her from right, front and left sides. The results were surprising and negate the well-known myth that Mona Lisa looks at the observer from all directions viewed. Only 65% confirmed that Mona Lisa gave back a look to them. In addition 93% confirmed that Mona Lisa was looking at them while observing at her from the right, 72% from the front and 78% from the left. What they see from all sides is demonstrated at the top of the figure. An additional study of the above results leads to the conclusion that each portrait in a two-dimensional picture will observe at you from each direction, and this is if you indeed felt that the portait was looking at you from a certain direction. And indeed also Einstein, as observed from the pictures photographed from all directions - center, left and front - is always looking at the observer.

A thorough analysis of the subject brought me to extend and formulate a principle that I named "Mona Lisa's gaze principle" which fits each element in a picture - portrait, wall in a construction, details in a landscape and the like. According to this principle: "If you look at any detail in a picture and this detail turns to you, it will turn to you from each direction you view it: from right, from front, from left, from above and from below. However, if from your looking direction the element does not turn to you, it will never turn to you." Hence, I suggest to an observer of every picture the following: move parallel to the picture from right to left and the opposite, and to your surprise you will start to feel that the elements that turned to you from a certain direction will start to "move" in your brain to every direction from which you view them. The artwork of the Holland's artist Meindert Hobbema indeed testifies that the lane and the woods avenue turn to the observer from each direction. However, the Gate of Mercy in the painting of the artist Nofer Keydar never turns to the observer. Twenty-five people who were asked to observe 16 details in the 9 paintings from three directions in which also that at the bottom confirmed the principle in 90% of the details and the directions of observation. And finally it should be noted that we don't talk here about a scientific principle that exists in all cases, but in a generalization that depends on the perception process that is different from one to the other..

| The result of looking from left at the central picture | The central picture | The result of looking from right at the central picture |
|---|---|---|

Mona lisa is always looking at you from all directions you view her: from right. front. left from above and from below
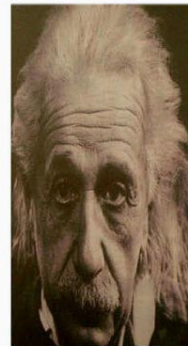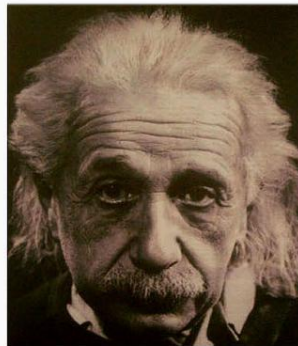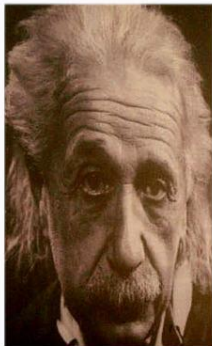
Also Einstein is always looking at you from all directions you view him:from right, front, left, from above and from below

Also the lane and the woods avenue is turning to you from each direction you view them: from right, front and left
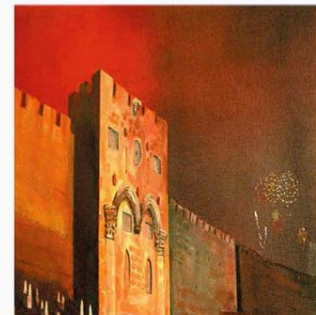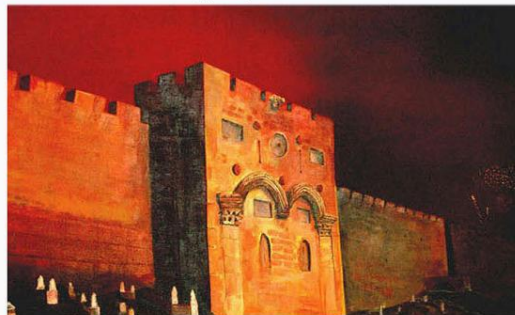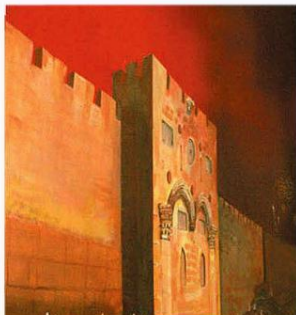
However, the Gate of Mercy never turns to the observer from neither direction that he is observing at it: from right, front and left

# Global Journals Guidelines Handbook 2010

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Search engines for most searches, use Boolean searching, which is somewhat different from Internet searches. The Boolean search uses "operators," words (and, or, not, and near) that enable you to expand or narrow your affords. Tips for research paper while preparing research paper are very helpful guideline of research paper.

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# Informal Tips for writing a Social Science Research Paper to increase readability and citation

Before start writing a good quality Social Science Research Paper, let us first understand what is Social Science Research Paper? So Social Science Research Paper is the paper which is written by professionals or scientists who are associated to Human Social Science or doing research study in this area. If you are novel to this field then you can consult about this field from your supervisor or guide.

**Techniques for writing a good quality Social Science Research Paper:**

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**20. Use good quality grammar:** Always use a good quality grammar and use words that will throw positive impact on evaluator. Use of good quality grammar does not mean to use tough words, that for each word the evaluator has to go through dictionary. Do not start sentence with a conjunction. Do not fragment sentences. Eliminate one-word sentences. Ignore passive voice. Do not ever use a big word when a diminutive one would suffice. Verbs have to be in agreement with their subjects. Prepositions are not expressions to finish sentences with. It is incorrect to ever divide an infinitive. Avoid clichés like the disease. Also, always shun irritating alliteration. Use language that is simple and straight forward. put together a neat summary.

**21. Arrangement of information:** Each section of the main body should start with an opening sentence and there should be a changeover at the end of the section. Give only valid and powerful arguments to your topic. You may also maintain your arguments with records.

**22. Never start in last minute:** Always start at right time and give enough time to research work. Leaving everything to the last minute will degrade your paper and spoil your work.

**23. Multitasking in research is not good:** Doing several things at the same time proves bad habit in case of research activity. Research is an area, where everything has a particular time slot. Divide your research work in parts and do particular part in particular time slot.

**24. Never copy others' work:** Never copy others' work and give it your name because if evaluator has seen it anywhere you will be in trouble.

**25. Take proper rest and food:** No matter how many hours you spend for your research activity, if you are not taking care of your health then all your efforts will be in vain. For a quality research, study is must, and this can be done by taking proper rest and food.

**26. Go for seminars:** Attend seminars if the topic is relevant to your research area. Utilize all your resources.

**27. Refresh your mind after intervals:** Try to give rest to your mind by listening to soft music or by sleeping in intervals. This will also improve your memory.

**28. Make colleagues:** Always try to make colleagues. No matter how sharper or intelligent you are, if you make colleagues you can have several ideas, which will be helpful for your research.

29. **Think technically:** Always think technically. If anything happens, then search its reasons, its benefits, and demerits.

**30. Think and then print:** When you will go to print your paper, notice that tables are not be split, headings are not detached from their descriptions, and page sequence is maintained.

**31. Adding unnecessary information:** Do not add unnecessary information, like, I have used MS Excel to draw graph. Do not add irrelevant and inappropriate material. These all will create superfluous. Foreign terminology and phrases are not apropos. One should NEVER take a broad view. Analogy in script is like feathers on a snake. Not at all use a large word when a very small one would be sufficient. Use words properly, regardless of how others use them. Remove quotations. Puns are for kids, not grunt readers. Amplification is a billion times of inferior quality than sarcasm.

**32. Never oversimplify everything:** To add material in your research paper, never go for oversimplification. This will definitely irritate the evaluator. Be more or less specific. Also too, by no means, ever use rhythmic redundancies. Contractions aren't essential and shouldn't be there used. Comparisons are as terrible as clichés. Give up ampersands and abbreviations, and so on. Remove commas, that are, not

necessary. Parenthetical words however should be together with this in commas. Understatement is all the time the complete best way to put onward earth-shaking thoughts. Give a detailed literary review.

**33. Report concluded results:** Use concluded results. From raw data, filter the results and then conclude your studies based on measurements and observations taken. Significant figures and appropriate number of decimal places should be used. Parenthetical remarks are prohibitive. Proofread carefully at final stage. In the end give outline to your arguments. Spot out perspectives of further study of this subject. Justify your conclusion by at the bottom of them with sufficient justifications and examples.

**34. After conclusion:** Once you have concluded your research, the next most important step is to present your findings. Presentation is extremely important as it is the definite medium though which your research is going to be in print to the rest of the crowd. Care should be taken to categorize your thoughts well and present them in a logical and neat manner. A good quality research paper format is essential because it serves to highlight your research paper and bring to light all necessary aspects in your research.

# Informal Guidelines of Research Paper Writing

**Key points to remember:**

- Submit all work in its final form.
- Write your paper in the form, which is presented in the guidelines using the template.
- Please note the criterion for grading the final paper by peer-reviewers.

**Final Points:**

A purpose of organizing a research paper is to let people to interpret your effort selectively. The journal requires the following sections, submitted in the order listed, each section to start on a new page.

The introduction will be compiled from reference matter and will reflect the design processes or outline of basis that direct you to make study. As you will carry out the process of study, the method and process section will be constructed as like that. The result segment will show related statistics in nearly sequential order and will direct the reviewers next to the similar intellectual paths throughout the data that you took to carry out your study. The discussion section will provide understanding of the data and projections as to the implication of the results. The use of good quality references all through the paper will give the effort trustworthiness by representing an alertness of prior workings.

Writing a research paper is not an easy job no matter how trouble-free the actual research or concept. Practice, excellent preparation, and controlled record keeping are the only means to make straightforward the progression.

**General style:**

Specific editorial column necessities for compliance of a manuscript will always take over from directions in these general guidelines.

*To make a paper clear*
· Adhere to recommended page limits

*Mistakes to evade*

- Insertion a title at the foot of a page with the subsequent text on the next page
- Separating a table/chart or figure - impound each figure/table to a single page
- Submitting a manuscript with pages out of sequence

*In every sections of your document*

· Use standard writing style including articles ("a", "the," etc.)

· Keep on paying attention on the research topic of the paper

· Use paragraphs to split each significant point (excluding for the abstract)

· Align the primary line of each section

· Present your points in sound order

· Use present tense to report well accepted

· Use past tense to describe specific results

· Shun familiar wording, don't address the reviewer directly, and don't use slang, slang language, or superlatives

· Shun use of extra pictures - include only those figures essential to presenting results

**Title Page:**

Choose a revealing title. It should be short. It should not have non-standard acronyms or abbreviations. It should not exceed two printed lines. It should include the name(s) and address (es) of all authors.

**Abstract:**

The summary should be two hundred words or less. It should briefly and clearly explain the key findings reported in the manuscript--must have precise statistics. It should not have abnormal acronyms or abbreviations. It should be logical in itself. Shun citing references at this point.

An abstract is a brief distinct paragraph summary of finished work or work in development. In a minute or less a reviewer can be taught the foundation behind the study, common approach to the problem, relevant results, and significant conclusions or new questions.

Write your summary when your paper is completed because how can you write the summary of anything which is not yet written? Wealth of terminology is very essential in abstract. Yet, use comprehensive sentences and do not let go readability for briefness. You can maintain it succinct by phrasing sentences so that they provide more than lone rationale. The author can at this moment go straight to shortening the outcome. Sum up the study, with the subsequent elements in any summary. Try to maintain the initial two items to no more than one ruling each.

- Reason of the study - theory, overall issue, purpose
- Fundamental goal
- To the point depiction of the research
- Consequences, including <u>definite statistics</u> - if the consequences are quantitative in nature, account quantitative data; results of any numerical analysis should be reported
- Significant conclusions or questions that track from the research(es)

Approach:

- Single section, and succinct
- As a outline of job done, it is always written in past tense
- A conceptual should situate on its own, and not submit to any other part of the paper such as a form or table
- Center on shortening results - bound background information to a verdict or two, if completely necessary
- What you account in an conceptual must be regular with what you reported in the manuscript
- Exact spelling, clearness of sentences and phrases, and appropriate reporting of quantities (proper units, important statistics) are just as significant in an abstract as they are anywhere else

**Introduction:**

The **Introduction** should "introduce" the manuscript. The reviewer should be presented with sufficient background information to be capable to comprehend and calculate the purpose of your study without having to submit to other works. The basis for the study should be offered. Give most important references but shun difficult to make a comprehensive appraisal of the topic. In the introduction, describe the problem visibly. If the problem is not acknowledged in a logical, reasonable way, the reviewer will have no attention in your result. Speak in common terms about techniques used to explain the problem, if needed, but do not present any particulars about the protocols here. Following approach can create a valuable beginning:

- Explain the value (significance) of the study

- Shield the model - why did you employ this particular system or method? What is its compensation? You strength remark on its appropriateness from a abstract point of vision as well as point out sensible reasons for using it.
- Present a justification. Status your particular theory (es) or aim(s), and describe the logic that led you to choose them.
- Very for a short time explain the tentative propose and how it skilled the declared objectives.

Approach:

- Use past tense except for when referring to recognized facts. After all, the manuscript will be submitted after the entire job is done.
- Sort out your thoughts; manufacture one key point with every section. If you make the four points listed above, you will need a least of four paragraphs.
- Present surroundings information only as desirable in order hold up a situation. The reviewer does not desire to read the whole thing you know about a topic.
- Shape the theory/purpose specifically - do not take a broad view.
- As always, give awareness to spelling, simplicity and correctness of sentences and phrases.

**Procedures (Methods and Materials):**

This part is supposed to be the easiest to carve if you have good skills. A sound written Procedures segment allows a capable scientist to replacement your results. Present precise information about your supplies. The suppliers and clarity of reagents can be helpful bits of information. Present methods in sequential order but linked methodologies can be grouped as a segment. Be concise when relating the protocols. Attempt for the least amount of information that would permit another capable scientist to spare your outcome but be cautious that vital information is integrated. The use of subheadings is suggested and ought to be synchronized with the results section. When a technique is used that has been well described in another object, mention the specific item describing a way but draw the basic principle while stating the situation. The purpose is to text all particular resources and broad procedures, so that another person may use some or all of the methods in one more study or referee the scientific value of your work. It is not to be a step by step report of the whole thing you did, nor is a methods section a set of orders.

Materials:

- Explain materials individually only if the study is so complex that it saves liberty this way.
- Embrace particular materials, and any tools or provisions that are not frequently found in laboratories.
- Do not take in frequently found.
- If use of a definite type of tools.
- Materials may be reported in a part section or else they may be recognized along with your measures.

Methods:

- Report the method (not particulars of each process that engaged the same methodology)
- Describe the method entirely
- To be succinct, present methods under headings dedicated to specific dealings or groups of measures
- Simplify - details how procedures were completed not how they were exclusively performed on a particular day.
- If well known procedures were used, account the procedure by name, possibly with reference, and that's all.

Approach:

- It is embarrassed or not possible to use vigorous voice when documenting methods with no using first person, which would focus the reviewer's interest on the researcher rather than the job. As a result when script up the methods most authors use third person passive voice.
- Use standard style in this and in every other part of the paper - avoid familiar lists, and use full sentences.

What to keep away from

- Resources and methods are not a set of information.
- Skip all descriptive information and surroundings - save it for the argument.
- Leave out information that is immaterial to a third party.

**Results:**

The principle of a results segment is to present and demonstrate your conclusion. Create this part a entirely objective details of the outcome, and save all understanding for the discussion.

The page length of this segment is set by the sum and types of data to be reported. Carry on to be to the point, by means of statistics and tables, if suitable, to present consequences most efficiently.

You must obviously differentiate material that would usually be incorporated in a study editorial from any unprocessed data or additional appendix matter that would not be available. In fact, such matter should not be submitted at all except requested by the instructor.

Content

- Sum up your conclusion in text and demonstrate them, if suitable, with figures and tables.
- In manuscript, explain each of your consequences, point the reader to remarks that are most appropriate.
- Present a background, such as by describing the question that was addressed by creation an exacting study.
- Explain results of control experiments and comprise remarks that are not accessible in a prescribed figure or table, if appropriate.
- Examine your data, then prepare the analyzed (transformed) data in the form of a figure (graph), table, or in manuscript form.

What to stay away from

- Do not discuss or infer your outcome, report surroundings information, or try to explain anything.
- Not at all take in raw data or intermediate calculations in a research manuscript.
- Do not present the similar data more than once.
- Manuscript should complement any figures or tables, not duplicate the identical information.
- Never confuse figures with tables - there is a difference.

Approach

- As forever, use past tense when you submit to your results, and put the whole thing in a reasonable order.
- Put figures and tables, appropriately numbered, in order at the end of the report
- If you desire, you may place your figures and tables properly within the text of your results part.

Figures and tables

- If you put figures and tables at the end of the details, make certain that they are visibly distinguished from any attach appendix materials, such as raw facts
- Despite of position, each figure must be numbered one after the other and complete with subtitle
- In spite of position, each table must be titled, numbered one after the other and complete with heading
- All figure and table must be adequately complete that it could situate on its own, divide from text

**Discussion:**

*The Discussion is expected the trickiest segment to write and describe. A lot of papers submitted for journal are discarded based on problems with the Discussion. There is no head of state for how long a argument should be. Position your understanding of the outcome visibly to lead the reviewer through your conclusions, and then finish the paper with a summing up of the implication of the study. The purpose here is to offer an understanding of your results and hold up for all of your conclusions, using facts from your research and generally accepted information, if suitable. The implication of result should be visibly described.*
*Infer your data in the conversation in suitable depth. This means that when you clarify an observable fact you must explain mechanisms that may account for the observation. If your results vary from your prospect, make clear why that may have happened. If your results agree, then explain the theory that the proof supported. It is never suitable to just state that the data approved with prospect, and let it drop at that.*

- Make a decision if each premise is supported, discarded, or if you cannot make a conclusion with assurance. Do not just dismiss a study or part of a study as "uncertain."

- Research papers are not acknowledged if the work is imperfect. Draw what conclusions you can based upon the results that you have, and take care of the study as a finished work
- You may propose future guidelines, such as how the experiment might be personalized to accomplish a new idea.
- Give details all of your remarks as much as possible, focus on mechanisms.
- Make a decision if the tentative design sufficiently addressed the theory, and whether or not it was correctly restricted.
- Try to present substitute explanations if sensible alternatives be present.
- One research will not counter an overall question, so maintain the large picture in mind, where do you go next? The best studies unlock new avenues of study. What questions remain?
- Recommendations for detailed papers will offer supplementary suggestions.

Approach:

- When you refer to information, differentiate data generated by your own studies from available information
- Submit to work done by specific persons (including you) in past tense.
- Submit to generally acknowledged facts and main beliefs in present tense.

# Administration Rules Listed Before
# Submitting Your Research Paper to Global Journals

*Please carefully note down following rules and regulation before submitting your Research Paper to Global Journals:*

**Segment Draft and Final Research Paper:** You have to strictly follow the template of research paper. If it is not done your paper may get rejected.

- The **major constraint** is that you must independently make all content, tables, graphs, and facts that are offered in the paper. You must write each part of the paper wholly on your own. The Peer-reviewers need to identify your own perceptive of the concepts in your own terms. NEVER extract straight from any foundation, and never rephrase someone else's analysis.
- Do not give permission to anyone else to "PROOFREAD" your manuscript.

**Written Material:** You may discuss with your guides and key sources.

- Do not copy or imitate anyone else paper. (Various Methods to avoid Plagiarism is applied by us on every paper, if found guilty, you will be blacklisted by all of our collaborated research groups, your institution will be informed for this and strict legal actions will be taken immediately.)
- To guard yourself and others from possible illegal use please do not permit anyone right to use to your paper and files.

# Criterion for Grading a Research Paper *(Compilation)*
# by Global Journals

**Please note that following table is only a Grading of "Paper Compilation" and not on "Performed/Stated Research" whose grading solely depends on Individual Assigned Peer Reviewer and Editorial Board Member. These can be available only on request and after decision of Paper. This report will be the property of Global Journals.**

| Topics | Grades | | |
|---|---|---|---|
| | **A-B** | **C-D** | **E-F** |
| *Abstract* | Clear and concise with appropriate content, Correct format. 200 words or below | Unclear summary and no specific data, Incorrect form<br><br>Above 200 words | No specific data with ambiguous information<br><br>Above 250 words |
| *Introduction* | Containing all background details with clear goal and appropriate details, flow specification, no grammar and spelling mistake, well organized sentence and paragraph, reference cited | Unclear and confusing data, appropriate format, grammar and spelling errors with unorganized matter | Out of place depth and content, hazy format |
| *Methods and Procedures* | Clear and to the point with well arranged paragraph, precision and accuracy of facts and figures, well organized subheads | Difficult to comprehend with embarrassed text, too much explanation but completed | Incorrect and unorganized structure with hazy meaning |
| *Result* | Well organized, Clear and specific, Correct units with precision, correct data, well structuring of paragraph, no grammar and spelling mistake | Complete and embarrassed text, difficult to comprehend | Irregular format with wrong facts and figures |
| *Discussion* | Well organized, meaningful specification, sound conclusion, logical and concise explanation, highly structured paragraph reference cited | Wordy, unclear conclusion, spurious | Conclusion is not cited, unorganized, difficult to comprehend |
| *References* | Complete and correct format, well organized | Beside the point, Incomplete | Wrong format and structuring |

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