
Scottish Journal of Arts, Social Sciences and Scientific Studies - ISSN 2047-1278
<http://scottishjournal.co.uk>

SCOTTISH JOURNAL OF ARTS, SOCIAL SCIENCES AND SCIENTIFIC STUDIES

VOLUME 29, ISSUE I
October 2016

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Inter Urban Diversity in Incidence and Fear of Crime Perception in Nigeria

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Abstract

The study compares crime incidence and residents' perception of fear of crime in Ibadan, Zaria and Owerri. Multistage sampling method was used in administering 1164 questionnaire in the selected cities. Five indices were developed in this study. These are 'Residential Crime Magnitude' (RCM); 'City Crime Magnitude' (CCM); 'Average Residential Crime Experience' (ARCE); 'Average Crime Magnitude in City' (ACMC) and Fear of Crime Events (FCE). It observes that residents of the three cities did not only experience crime differently but there were intra – urban variations. The study established that there is significant inter and intra-city variation in CCM and RCM in the three cities (3 cities $X^2 = 902.08$, Ibadan $X^2 = 1279.04$; Zaria $X^2 = 5797.4$; and Owerri: $X^2 = 549.05$, P value = 0.05). Owerri and Zaria respectively had higher ACMC values of 16.7 and 10.5 while that of Ibadan was lower (-9.9). The FCE of Ibadan (1.6) was below the mean FCE for the three cities (3.6) while that of Zaria (3.8) is above it. The FCE value for Owerri (5.3) is not only above the mean FCE in the study area, but it is more than three times that of Ibadan. Residents of Owerri exercised therefore, higher level of fear of crime events. The study suggests a security interventions tailored towards 'crime-experience' of each city besides the national security programmes.

Keywords: space, city, crime, incidence, fear.

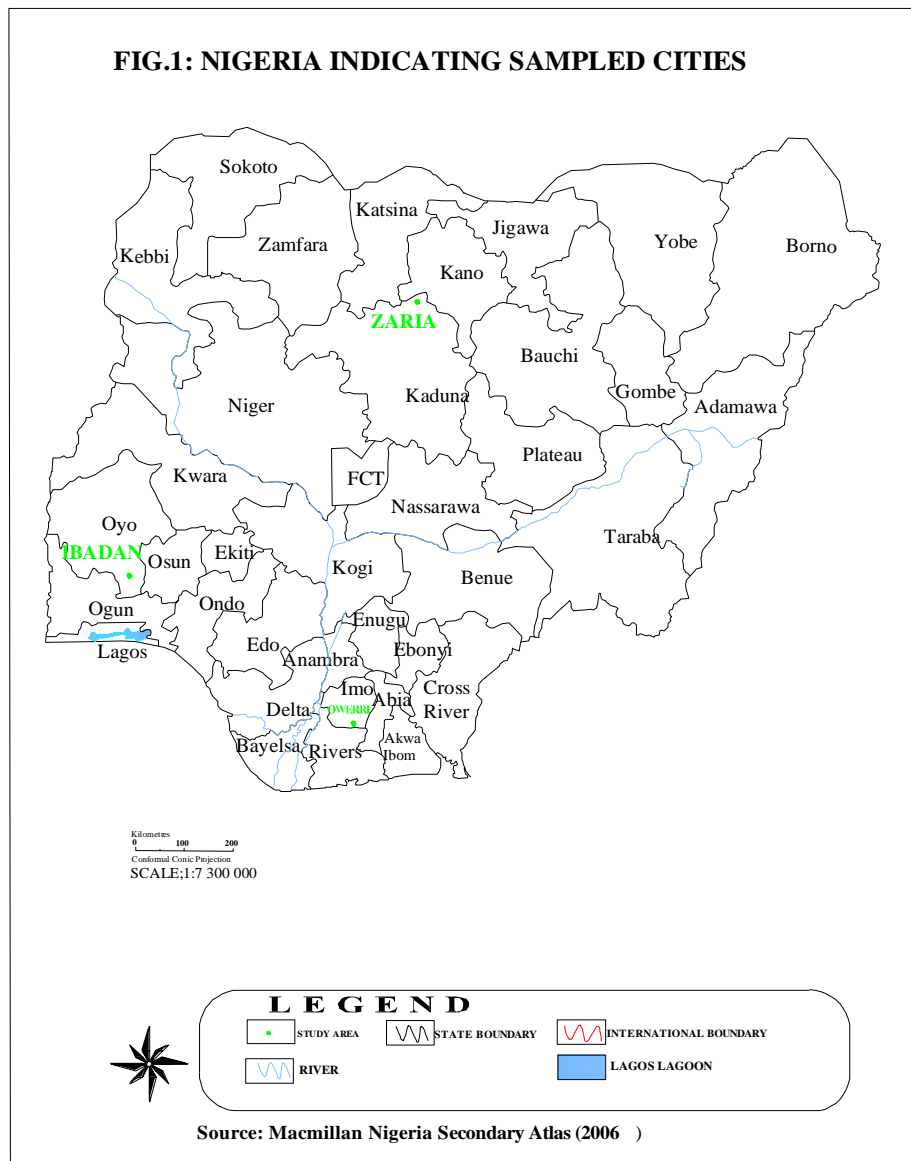
1. Introduction

Crime is defined as an act committed or omitted in violation of a law forbidding or commanding it and for which punishment is imposed upon conviction (The Free Dictionary accessed June 4th 2014). Crime has been categorized variously (Abodunrin, 2004; Omisakin, 1998) and its causes summarized to have environmental, social and economical determinants (Adigun, 2012). The consequences of crime on human beings are replete, chief among them is fear. Fear has been regarded as the immediate 'within' (or internal) response that poses threat to human safety. (Afon, 2001). This prompted the external or visible/physical response in terms of installation of safety gadgets. It also motivates neighbourhood surveillance strategies. The existence of fear is indisputable but its measurement is time bound since it is a dynamic phenomenon which is not only triggered by crime but by any other undesirable events which often times are inherent in the environment.

It has been established that crime and fear occur within, and can indeed be compounded or reduced by the environment of man (Aguda, 1994; Agbola, 1997; Afon, 2001; Phillip, 2008, Adigun, 2012, Adigun, 2013). Researches on crime and/or fear of crime are not new but the consideration of the environment within which they occur suggest that there could be peculiarities explained by social, economic, cultural and environmental factors which precisely defined man's living space and are capable of introducing variation in the two phenomena. Thus, a broader analysis encompassing different human settlements within a geographical space (e.g nation, region among others) and comparison of such phenomena provides a better ground for holistic policy formulation, though monolithic analysis is commendable.

An earlier work on 'Residential differentials in Incidence of Crime and Fear of Crime Perception in Ibadan' (Adigun, 2013) revealed that households of the high and medium residential densities are with higher average residential crime experience (ARCE) than average crime experienced by any household in Ibadan while lower ARCE is recorded in the low density residential. It was also documented in the same study that the low density residential area recorded the highest mean fear of crime events followed by the medium then high density residential area. The pattern of FCE index observed in Ibadan is a reverse of the pattern of residential crime magnitude (RCM) and average crime experienced (ARCE) among the three residential areas. For further research the study suggested that the dichotomy of the subject of discourse could also be investigated among cities of different sizes as well as between urban and rural areas for better and wider understanding of its spatial pattern.

Against this background, the study compares incidence and fear of crime in Ibadan, Zaria and Owerri with a view to establishing the spatial linkage between incidence and fear of crime in the selected cities. The study makes recourse to investigate the urban dimension of the subject matter in the selected. The cities are urban centres with commensurate population size, physical development, increasing level of urbanization and industrialization, political and socio-economic prestige in their respective political zones. The three cities are proficient of representing the socio-economic and cultural status of the three selected regions.



2. Literature Review

Cities vary within and between regions. The observable disparity is borne out of differences in natural and human resources. This informs noticeable differences in size as defined by population and/ or physical growth while the disparity in function cover a whole gamut of administrative, commercial, industrial activities etc. Differences do not end between cities but there are remarkable intra city variations inherent in the spatial structure of cities. Attempts at understanding the internal spatial structure of cities attracted the formulation of models and theories. These include: the concentric zones (Burgess, 1927); the sector analysis (Hoyt, 1939); multiple nuclei (Harris and Ullma, 1939); social area analysis (Shevky and Bell, 1955); factorial ecology (Berry and Horton, 1970); micro-economic theory (Wingo, 1961 and Alonso, 1964). The

theories have been helpful in identifying different land uses inherent in the urban space though their applicability in other areas apart from where they were formulated may be limited by differences in culture and societal value systems (Ayeni, 1979). Prominent among the landuses so identified is the residential land use which is of significant interest to this study.

The residential quarters of urban centres have been delineated into zones using various methods. This includes the use of aerial photograph; house counting and survey, historical and physical attributes of buildings and the area (Mabogunje, 1962; Oyelese, 1970; Onokerhoraye, 1977; Okewole, 1977 cited in Afon 2005; Adejuwon, 1978; Ayeni, 1982 and 1982a). Generally three major categories of residential areas with distinct social and physical attributes were identified. These are: low quality residential area (high density residential zone); medium quality residential area (medium density residential zone) and high quality residential area (low density residential zone) (Onokerhoraye and Omuta, 1986.)

Afon (2005) and Adigun (2013) argued in favour of residential areas as reliable basis for the collection of primary data. Residential areas show more permanent geographical attributes which objectively represent the social, economic and cultural attributes of the residents (Hebert & Johnston 1978); likely to contain residents with homogeneous social and economic characteristics (Gana 1996) and by grouping urban centre into residential zones the analysis of who live in each, the crime experienced and fear of same in each group is relatively simplified.

The urbanization of the three selected cities predates the colonial administration. Consequently, the three epoch of development (i.e precolonial, colonial and post colonial) are clearly evident in the spatial structure, building characteristics and arrangement; and environmental condition of residential areas. Three residential zones: core (majorly high); intermediate (medium density) and suburban (low density) areas corresponding to the precolonial, colonial and post colonial developments were identified based on historical factors and physical attributes.

The views as to what constitutes crime had evolved over centuries and as well varied tremendously across societies and cultures. What constitutes crime is relative to space and time. Sometimes a vice somewhere, could be a virtue now. This introduced a difficulty in the definition of crime. Nonetheless crime is defined as “intentional act in violation of criminal law committed without defence or excuse and penalized by the state (Tappan, 1947). Categories of crime include *crimes of aggression; crime of acquisition; crime against morality and customs; and crimes against public order* (Omisakin, 1998). Tanumo (1991) and Swiencicki's (2002) provides other classifications which reflect whether a crime is violent or not. Tanumo (1991) identifies violent crimes to involve the use of force or threats resulting from despair and desperation. The non-violent crimes do not involve the use of threat or force. Swiencicki's (2002) classified crime into three broad groups. These are: *violent crimes; property crimes and victimless crimes*. Swiencicki's idea of using targets of criminal activities as basis of classification is in support of Sullivan's work. Sullivan (1996) categorized crime into two broad groups, viz: property and personal crime. He associated violence with personal crime. The author has earlier classified crime into ten groups which include crime of acquisition, crime of stealth/pretence, crime of aggression, crime of assaults, crime against morality and custom. Others are crime against property, crime of public disorderliness, white collar crime, crime against public law and order and unnatural crime (Adigun, 2012). This study is not interested in an elaborate classification of crime but the variation in its incidence and fear of same.

Of importance to the study is residents' fear of crime. This is described as the internal response to crime experienced or news of crime heard. Fear of crime is a concern about crime, the consequences

of victimization, the probability of being victimized, feelings of vulnerability and wider social and situational influences (Department of Justice, Equality and Law Reform 2009). It is a feeling borne out of intellect and emotion which could be influenced by several factors. These are: gender, age, nationality, marital status, education level, locality, official crime rate, perception of crime in local area, prior experience of victimization among others (Department of Justice, Equality and Law Reform 2009). Since these factors vary by individual, it is expected that residents' aggregate fear of crime across different residential zones will vary.

Studies have shown that there are intricate linkages between incidence of crime and residential areas (Faris & Dunham 1939; Shaw & McKay 1942; Bagley et al 1976; Aguda 1994; Agbola 1997; Afon 2001; Phillip, 2008; Adigun, 2012; Ahmed, 2012.). These studies conclusively demonstrate that crime incidence forms a distinct pattern within city. The complex interrelationship between residents' socioeconomic characteristics, and environmental features summarized in urban residential patterns are capable of influencing the incidence of crime and the response of residents to it.

3. Methodology

Through self administered questionnaire, data were obtained on household crime experience in last six months and associated fear of events with crime. Multistage sampling techniques was employed in administering 1220 questionnaire on residents in five (5), two (2) and three (3) local government areas making Ibadan metropolis, Zaria and Owerri cities respectively (see Table 1). Further stratification was on the basis of three residential zones. Localities within the three distinct residential areas were selected for the study. In the chosen localities, the discretion of the researcher informed the selection of the first building randomly in the selected street. Subsequent selection was done at an interval of ten buildings. In the core area where building is not accessible to road, buildings were selected at interval of every fifth building off the roads in a repetitive manner. A resident not less than 18 years either male or female was sampled from a household selected from each chosen building. The questionnaire was administered using a ratio of 3:2:1 in the high, medium and low density residential zones in each selected city (Table 1). This is premised on the generally believed pattern of population distribution among residential areas stated as 3:2:1 in the high, medium and low density residential area. (Adeboyejo and Onyeonuru, 2003). Out of the 1220 distributed 1164 copies of the questionnaire were considered useful for the analysis. This represent 95.4 percent questionnaire recovery rate.

Table 1: Pattern of Questionnaire administration for the Study Areas

Residential Areas	Cites			The three cities Total
	Ibadan	Zaria	Owerri	
Low	111	58	33	202
Medium	224	116	67	407
Owerri	336	174	101	611
Total	669	348	201	1220
Total used for analysis	654	319	191	1164

Source: Author's Field Survey 2010 and Adigun (2013b)

Data analyses were both descriptive and inferential. Five indices were developed. These are 'Residential Crime Magnitude' (RCM); 'Residential Crime Experience' (ARCE); 'City Crime

Magnitude' (CCM); 'Average 'Average Crime Magnitude in City' (ACMC) and Fear of Crime Events Index (FCE). The first is the sum of crime experienced by households in each residential area. The second is the aggregate of crime experienced by households in a city irrespective of the residential area while the third and fourth is the average of RCM and CCM respectively. The fifth index is used in measuring residents' level of fear of events that are associated with crime incidences. The mathematical computations of the indices are as follows:

$$ARCE = RCM/N \text{-----}(1)$$

where: ARCE = Average Residential Crime Experience

RCM = Residential Crime Magnitude

N = Number of respondents

$$ACMC = CCM/N \text{-----}(2)$$

where: ACMC = Average Crime Magnitude in City

CCM = City Crime Magnitude

N = Number of respondents

In earlier studies by the author (Adigun, 2012 and 2013) derivation of FCE index was based on rating of fifteen variables associated with crime incidences by respondents on the Likert scale: "very high", "high", "moderate", "low" and "very low". A value of 5, 4, 3, 2, 1 were respectively assigned to the ratings. In this study however the variables were reduced to twelve. Variables termed 'loss of one's life' and 'killing of household member' were merged into a variable termed 'loss of life'. Furthermore variable 'female member of household raped' and 'self raped' were combined to form 'female member of household raped'. Similarly 'self tortured or beaten' and 'female 'household member tortured or beaten'' were merged into 'household member tortured or beaten'. The variables were rated by respondents on the Likert scale: "very high", "high", "moderate", "low" and "very low". A value of 4, 3, 2, 1, 0 were respectively assigned to the ratings. The FCE of each crime event was derived by dividing the summation of weighted value (SWV) by the total number of responses. The SWV of each crime event is the addition of the product of the proportion of responses to it and the weight value attached to each rating. The extent of fear of fifteen events associated with crime incidence was measured within the three residential areas of the three cities. Each city, the mean FCE was calculated and compared with the same index for each crime event in the city. The mean FCE for the whole study area was also computed (that is the three cities).

$$FCE = SWV/N_i \text{-----}(2)$$

$$SWV = N_i V_i \text{-----}(3)$$

Where: FCE = 'Fear of Crime Events Index'

SWV = Summation of Weight Value

N_i = Number of Respondents rating variable i; and

V_i = Weight assigned to variable i

Chi square analysis was used to test the spatial variation observed in RCM and CCM (that is the within and between cities variation). Z score was computed for the comparison of categories of crime within and among cities. Analysis of Variance (ANOVA) was used in determining the significance of intra-city and inter-city differences in categories of crime experienced by residents.

4. Results and DiscussionS

4.1 Spatial Dimension of Crime Experienced by Households

There is significant spatial variation in RCM in each of the three cities (Ibadan $X^2 = 1279.04$; Zaria $X^2 = 5797.4$; Owerri: $X^2 = 549.05$, $df = 2$, table value = 5.991, at 0.05 level of significance). Not only this, there is significant intercity variation in CCM among the three cities ($X^2 = 902.08$, $df = 2$, table value = 5.991, at 0.05 level of significance). This indicates that there is intra and inter-city variation in the magnitude of crime experienced by households. Thus, residents of the three cities experience crime differently.

The RCM of each residential area was taken as a proportion of the city total and comparison is made among the three cities (Table 2). It was observed that the low density of Owerri (21.9%) had almost doubled the proportion of crime experienced in the low density of Ibadan (13.2%). The proportion of crime recorded in the low density area of Zaria with a proportion of 4.5% of the city's crime magnitude is far below 13.2% recorded in the same residential area of Ibadan. While the proportion recorded in the medium density of Ibadan accounted for 35.5% in the city, Owerri ranked second with 32.9%; and in Zaria 27.5% of crime occurred in the same medium density. Contrariwise the high density of Zaria has the highest proportion of 68.0% followed by Ibadan then Owerri with 51.3% and 45.1% respectively.

Table 2: Intra-city Variation in Average Crime Experienced by Households

City	Residential Area	RCM = Number of crime experienced	% of city crime	Number of Respondents (N)	ARCE = RCM/N	Intra-city Deviation = ARCE - *
Ibadan	Low	767	13.2	111	6.9	-2
	Medium	2066	35.5	224	9.2	0.3
	High	2983	51.3	319	9.4	0.5
	Total	5816	100	654	8.9*	
Zaria	Low	419	4.5	44	9.5	-19.8
	Medium	2563	32.9	101	25.4	-3.9
	High	6349	68.0	174	36.5	7.2
	Total	9331	100	319	29.3*	
Owerri	Low	1487	21.9	33	45.1	9.6
	Medium	2234	27.5	62	36.0	0.5
	High	3062	145.1	96	31.9	-3.6
	Total	6783	100	191	35.5*	

Source: Author's, 2010

Note: figures with * is the city ARCE, that is average crime experienced in the city

'Average Residential Crime Experience' (ARCE) was computed by dividing the total crime incidence in each residential area (RCM) by the number of respondents sampled in the area. It represented the average crime level experienced by a household within the space of six months (as specified in the questionnaire). The resulting pattern showed that the high density area of Ibadan was with the highest ARCE of 9.4. Next was the medium and low density with 9.2 and 6.9

respectively. In Zaria, the pattern was similar. ARCE of 36.5, 25.4 and 9.5 for the high, medium and low densities confirm the similarity. The pattern in Owerri was however the reverse of the findings in Ibadan and Zaria. The ARCE values of 45.1, 36 and 31.9 ARCE values respectively for the low, medium and high densities established this.

The aggregate crime magnitude was higher in high densities of the three cities but when taken as quotient of the population of the respondents, it was observed that the value in the high density area was less than other densities in Owerri but higher in Zaria and Ibadan. This implied that reaching a conclusion that the level of crime in high density area was higher than other densities cannot hold for all cities. The interpretation and conclusion must be made within the context of the population size of such area and the prevailing circumstances. This is because other areas, though, of different residential densities, yet within the same city, may be experiencing higher crime rate. The implication of this for policy formulation is evident. Generalised crime intervention specialised for categories of residential densities may lead to excessive or over flooded interventions in some areas while other areas may be inadequately taken care of. Thus, besides generalised crime control, specific areas should also be taken uniquely in order to address crime situation in such places.

In order to show the intra-city difference, the residential area ARCE was compared with the respective city ACMC and the result is presented in Figure 2. It was established that the high and medium residential densities of Ibadan were respectively with an ARCE value of 0.5 and 0.3 above the city ACMC, while the low density was -2 below the city ACMC. The picture however differs in Zaria. The high density area had an ARCE of 7.2 higher than the city's ACMC while the medium and low densities were with a deviation of -3.9 and -19.8 respectively. In Owerri, the low and medium densities respectively had an ARCE of 9.6 and 0.5 higher than the city's ACMC while the high density was -3.6 lower.

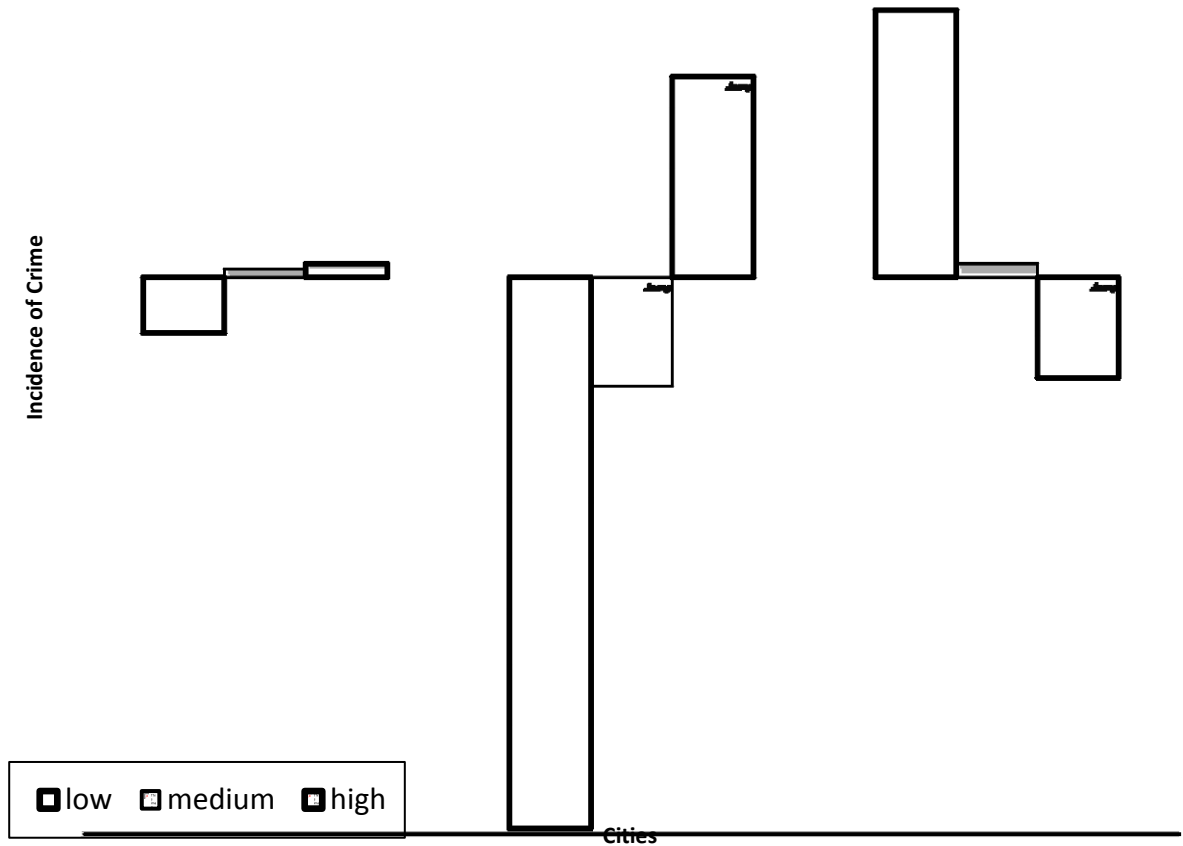


Figure 2: Deviations of ARCE from ACMC

Source: Author’s 2010

4.2 Inter City Variations in Average Crime Magnitude in City (ACMC)

The highest CCM (9331) was recorded in Zaria. The CCM of Owerri was 6783 while that of Ibadan was 5816. The ACMC value computed for each city showed that the highest ACMC value of 35.5 was recorded in Owerri while that of Zaria and Ibadan were 29.3 and 8.9 respectively (Table 3). The ACMC of the three cities which was 18.8 revealed that Owerri and Zaria have respectively higher ACMC values of 16.7 and 10.5 while that of Ibadan was lower (-9.9) (see figure 3). This indicates that the incidence of crime experienced by households in Owerri and Zaria is relatively higher than those experienced by households in Ibadan and greater than the average of the three cities puts together.

Table 3: Inter City Variation in Average Crime Magnitude in City (ACMC)

Cities	City Crime Magnitude (CCM)	Number of Respondents (N)	ACMC = CCM/N	Inter city deviation = ACMC - *
Ibadan	5816	654	8.9	9.9
Zaria	9331	319	29.3	10.5

Owerri	6783	191	35.5	16.7
Total	21930	1164	18.8*	

Source: Author's, 2010

Note: Figure with * is the average crime experienced in the three cities altogether

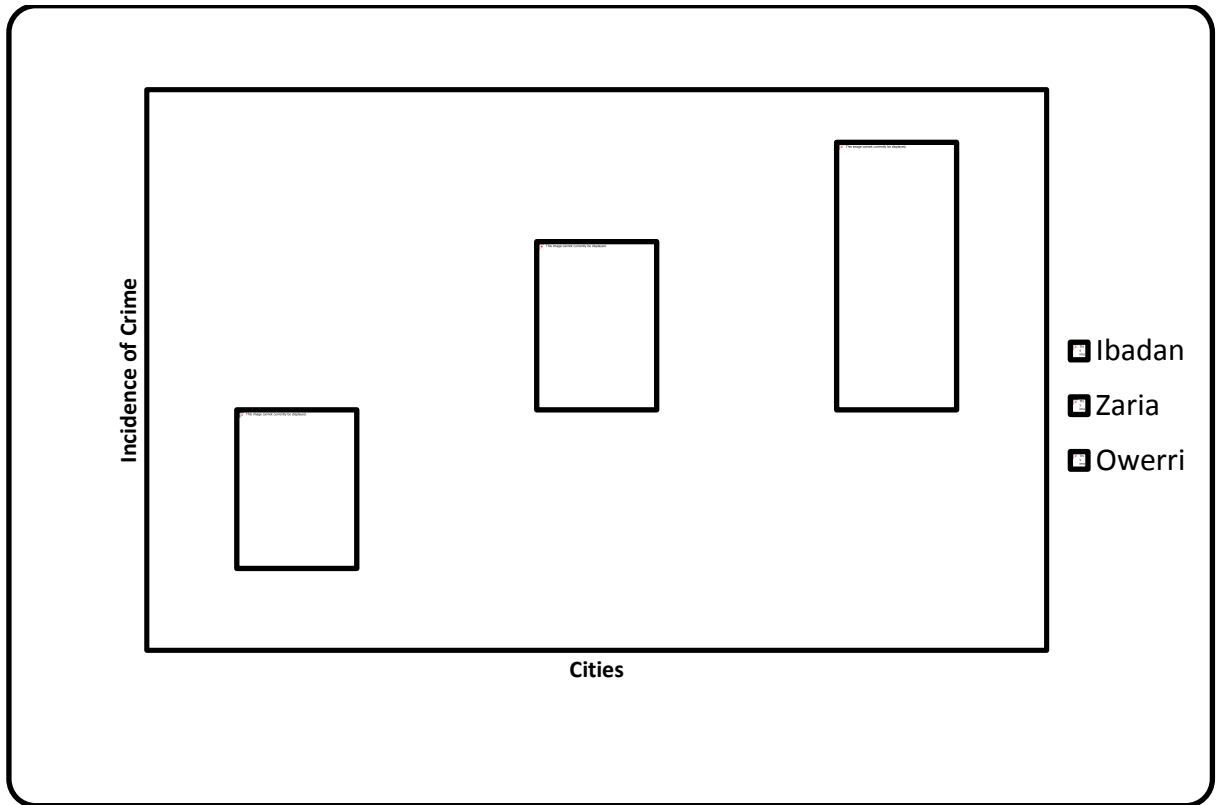


Figure 3: Deviation of City ACMC from Total ACMC

Source: Author's 2010

By this computation, the residential areas were categorized into two i. e. those with positive and negative deviations about the city's mean ACMC. Cities with positive deviations about the mean experience higher average crime incidence than the city's average. This implies that residents in these areas had higher crime experience than the average crime experienced by any household in that city. Included in this category were medium and high densities in Ibadan; high density in Zaria and; low and medium densities in Owerri. The second category is the residential areas with negative deviation about the city's mean ACMC. Such residential areas were the low density in Ibadan, medium and low densities in Zaria and, high density in Owerri. Households in these residential areas had experienced low crime incidences than the city's average. It is hereby established that the residential areas with higher ARCE value than the city's

average is considered to be more prone to crime. The study observed that it was only in Owerri that the values of the two indices form a contrasting pattern. RCM and ARCE were inversely related among the residential zones. While RCM decreased from high towards the medium to the low density area, the ARCE increased from the low to the high density area. Findings in Ibadan and Zaria however showed that RCM and ARCE were decreasing from the high to the medium then low density areas. When these crime totals are disaggregated into their respective crime categories a pattern evolved which is documented in the next section.

4.3 Inter City Variation in the Categories of Crime Experienced by Households

The total number of crime cases experienced by households in the sampled cities were categorized and presented with their Z scores in Table 4. In Ibadan, crime of acquisition had the highest incidence. Next in order of incidence was crime of public disorderliness and white collar crime. The pattern in Zaria and Owerri were similar with respects to the two crime categories with the highest incidence: crime of acquisition and white collar crimes. The least occurring crime category in Ibadan and Zaria was ‘unnatural crime’ while crime against property was the least occurring in Owerri. It is vivid from the Z scores that crime of acquisition occurred the most in all the cities. With regards to categories it is important to note that Zaria has the highest average magnitude of crime occurrence (933); Owerri ranked second with 678 while Ibadan was the third with 582. The inter-city variation in magnitude of crime categories experienced by households is confirmed significant with the results of ANOVA ($F = 10.223, p = 0.000$).

Table 4: Inter City Variation in Magnitude of Different Categories of Crime

S/ N	Crime Category	Cities						Score	
		Ibadan		Zaria		Owerri		Num- ber	Z Score
		Num- ber	Z score	Num- ber	Z score	Num- ber	Z score		
1	Crime of acquisition	3446	2.72639	3031	2.56185	2167	2.48927	8644	
2	Crime of stealth/pretence	214	-.34989	865	-.08316	483	-.32823	1562	
3	Crime of aggression	86	-.47172	818	-.14055	781	.17173	1685	
4	Crime of assaults	250	-.31562	935	-.00232	637	-.06906	1822	
5	Crime against morality and custom	115	-.44412	667	-.32495	388	-.48541	1170	
6	Crime against property	59	-.49742	448	-.59238	131	-.91514	638	
7	Crime of public disorderliness	941	.34208	933	.00012	664	-.02391	2538	
8	White collar crime	650	.06510	1298	.44560	1079	.67001	3027	
9	Crime against public law and	28	-.52693	224	-.86592	230	-.74961	482	

	order								
10	Unnatural crime	27	-.52788	112	-1.00269	224	-.75964	482	
	Total	5816		9331		6783		21930	
	Mean	581.6		933.1		678.3		2,193	

Source: Author's, 2010.

4.4 Intra City Disparity in Fear of Crime Events in the three Cities

The value of FCE gives an insight into level of residents' perceived fear of crime events. The extent of fear on the twelve crime variables was differentiated into two groups. First were those with positive deviation about the mean of FCE while the second had negative deviation. It was observed that there is intra city variation in the level of fear of crime events within the three cities.

Within Ibadan the highest mean FCE (1.9) was recorded in the low density residential area. Next in rank is the medium and high density residential area with 1.2 and 0.8 respectively. Within the low density, the most dreaded events are shock/psychological imbalance (FCE 2.6) while the least are burning of houses/properties and 'burning of vehicles' each with FCE of 1.4. 'Destruction of properties' was of less concern to the rich some could even use properties as ransom for their lives. But issues that border on their health seems paramount to them presuming that criminals are oftentimes interested in carting away valuables except hired or sponsored killers. Though this area had the lowest city crime magnitude and average crime experienced yet the level of fear of crime events was high. This suggests that there are other factors which influence level of fear of crime events. Information on crime incidences, agitation and expectations of eventualities of crime may contribute to this. In the medium density crime events that residents feared above the average level of fear of crime events included 'household member tortured or beaten'; 'loss of life' and shock/psychological imbalance each with FCE of 1.4. On the other hand residents fear some events below the average level of fear of crime events in the area. The two with the least FCE are burning of houses/properties and 'burning of vehicles' with FCE of 0.9. Residents of the high density have high fear for some crime events than average fear of crime events in their area. These include loss of life, shock/psychological imbalance and 'money stolen' each with FCE of 1.0. Residents have the least dread for burning of houses/properties, and 'burning of vehicles' each with FCE of 0.6. Life is accorded the highest priority by the poor since there are fewer valuables to offer to intruding criminals. Residents have less fear for crime events that seldom occurred in their areas or of which they have heard little report of.

The pattern of fear of crime events observed in Ibadan was a reverse of the pattern of residential crime magnitude and average crime experienced among the three residential areas. Fear of crime events was at the lowest ebb in the high density while the low density had a greater level of fear of events associated with crime. This value is not explainable with the level of crime incidence in the low density of Ibadan where the least residential crime magnitude and ARCE was recorded. This indicates that there are other factors dictating fear of crime apart from crime experienced.

Table 5: Fear of Crime Events in Ibadan

Events associated with crime incidence	FCE for Residential Areas			FCE	FCE- *FCE	(FCE- *FCE) ²
	Low	Medium	High			
'loss of lives'	2.3	1.4	1.0	2.0	0.4	0.16
'female member of household raped'	1.9	1.2	0.9	1.3	-0.3	0.09
'kidnapping'	1.7	1.2	0.8	3.7	2.1	4.41
'household member tortured or beaten'	2.0	1.4	0.8	1.9	0.3	0.09
'infection with HIV/AIDS/other STD'	1.9	1.2	0.8	1.3	- 0.3	0.09
'shock or psychological imbalance'	2.6	1.4	1.0	1.7	0.1	0.01
'property carted away'	2.3	1.3	0.9	1.5	- 0.1	0.01
'money stolen'	2.4	1.3	1.0	1.6	0	0
'destruction of window/door locks and or burglar proof'	1.7	1.1	0.6	1.1	- 0.5	0.25
'Vandalization of vehicle(s)'	1.6	1.0	0.6	1.1	- 0.5	0.25
'burning of houses and properties'	1.4	1.0	0.6	1.0	- 0.6	0.36
'burning of vehicle(s)'	1.4	0.9	0.6	1.0	- 0.6	0.36
Total	23.2	14.3	9.6	19.1		5.98
*FCE	1.9	1.2	0.8	1.6		

Source: Author's, 2010

In Zaria there was a wide disparity between the mean FCE among the three residential areas (Table 6). The low density had the highest level of fear of crime events (7.2) followed by the medium (2.7) then the high (1.6). Residents of the low density have the highest level of fear for 'money stolen' (8.1) and 'destruction of window/door locks and or burglar proof' (7.5). Residents have the least level of fear for 'infection with HIV/AIDS/other STD' (FCE of 6.7). Contrarily in the medium density residential area the fear of getting infected with HIV/AIDS/other STD' (FCE of 3.1) was the most dreaded of all crime events examined while "destruction of window/door locks and or burglar proof" (FCE of 2.2) was the least feared. In the high density of Zaria crime events that residents dread above the average level of fear of crime events included 'loss of life' 'household member tortured or beaten', 'infection with HIV/AIDS/other STD', "shock or psychological imbalance" and 'money stolen' each with FCE OF 1.7. Crime events with the least FCE are 'vandalization of vehicles'(s) and 'burning of vehicles' each with FCE of 1.4.

Table 6: Fear of Crime Events in Zaria

Events Associated with Crime Incidence	FCE for Residential Areas			FCE	FCE- *FCE	(FCE- *FCE) ²
	Low	Medium	High			
'loss of lives'	6.9	2.9	1.7	3.8	-0.02	0.0004

'female member of household raped'	7.1	2.9	1.6	3.9	0.04	0.002
'kidnapping'	6.9	2.7	1.6	3.7	-0.1	0.01
'household member tortured or beaten'	7.1	2.7	1.7	3.8	0	0
'infection with HIV/AIDS/other STD'	6.7	3.1	1.7	3.9	0.02	0.0004
'shock or psychological imbalance'	7.4	2.8	1.7	4.0	0.14	0.02
'property carted away'	7.3	2.4	1.6	3.8	-0.07	0.005
'money stolen'	8.1	2.5	1.7	4.1	0.27	0.072
'destruction of window/door locks and or burglar proof'	7.5	2.2	1.6	3.8	-0.06	0.004
'Vandalization of vehicle(s)'	7.3	2.5	1.4	3.8	-0.08	0.005
'burning of houses and properties'	7.1	2.8	1.6	3.8	0.01	0.0001
'burning of vehicle(s)'	7.3	2.3	1.4	3.7	-0.14	0.02
Total	86.7	31.8	19.35	45.97		0.14
*FCE	7.23	2.65	1.61	3.83		

Source: Author's, 2010

It was observed that the level of fear of all the crime events in the high and medium density areas was lower than the mean fear of crime events in Zaria. In the low density all the crime events had FCE value higher than the mean FCE value for Zaria. This implies that residents of the high and medium density areas are relatively less fearful of crime events than others in the same city. On the other hand the highest level of fear of crime events was observed in the low density. Similar to the observation made on Ibadan, pattern of fear of crime in Zaria was a reverse of the pattern formed by residential crime magnitude and average crime experienced. While the argument advanced for Ibadan is applicable here it should however be noted that fear of crime events is heightened by experience of crime or reception of news of people who suffer same despite all safety measures put in place. The most dreaded crime event in Zaria was 'money stolen' while the least was 'kidnapping' and 'burning of vehicles'. This could be interpreted in two ways. Lesser fear of crime events could arise from incessant occurrence of such events to the extent that residents are not really afraid of it any longer and may be expecting it to occur once there are related crime incidences or attack. On the other hand it could imply that the event seldom accompany crime incidence thus residents have no dread for it. Residents may not dread events that are not commonly associated with crime in their area/city or for which they have safety measures to deter.

The mean FCE for the low, medium and high densities in Owerri are respectively 9.5, 3.6 and 2.7. In the low density all the crime events are above the mean FCE value (5.3). The most and least fearful crime event to the dwellers of low density area were 'money stolen' and 'burning of vehicles'. On the other hand in the medium and high densities, all the crime events have values below the mean FCE value (5.3) for Owerri. In the medium density the highly dreaded event was 'money stolen' (FCE 0.4) while the least feared is 'shock or psychological imbalance' (4.4). The

most fearful crime events as perceived by residents in the high density of Owerri was ‘properties carted away’ (FCE 3.5) while the least fearful was ‘burning of houses/ properties’ and ‘burning of vehicles each with FCE value of 1.9 This observation is possible if rarely do criminals kill or maim in the area then the little properties of a poor man is dear to him since his livelihood anchors on it. In Owerri the low density had the highest RCM and ARCE followed by the medium and high densities. The value of FCE followed the same pattern. Areas of high crime incidence corresponded to areas of high fear of criminal events in Owerri.

Table 7: Fear of Crime Events in Owerri

Events associated with crime incidence	FCE for Residential Areas			FCE	FCE- *FCE	(FCE- *FCE) ²
	Low	Medium	High			
‘loss of lives’	9.8	4.1	3.0	5.6	0.3	0.09
‘female member of household raped’	8.4	3.6	2.8	4.9	-0.4	0.16
‘kidnapping’	9.7	4.3	2.5	5.5	0.2	0.04
‘household member tortured or beaten’	10.4	4.0	3.1	5.8	0.5	0.25
‘infection with HIV/AIDS/other STD’	9.9	4.4	3.2	5.8	0.5	0.25
‘shock or psychological imbalance’	9.5	0.4	3.2	4.4	-0.9	0.81
‘property carted away’	10.7	4.1	3.5	6.1	0.8	0.64
‘money stolen’	10.8	4.7	2.2	5.9	0.6	0.36
‘destruction of window/door locks and or burglar proof’	10.2	4.0	2.9	5.7	0.4	0.16
‘Vandalization of vehicle(s)’	9.2	3.4	2.3	5.0	-0.9	0.09
‘burning of houses and properties’	7.3	3.4	1.9	4.2	-1.1	1.21
‘burning of vehicle(s)’	7.6	3.2	1.9	4.2	-1.1	1.21
Total	113.5	43.6	32.5	63.1		5.27
*FCE	9.5	3.6	2.7	5.3		

Source: Author’s, 2010

4.5 Inter-city Variation in Fear of Crime Events in the Study Area

Presented in Table 8 is the FCE of the three cities. Owerri was with the highest FCE value of 5.3 while Zaria and Ibadan were 3.8 and 1.6 respectively. The FCE value for the study area was 3.6. This is the maximum value that FCE could take. City or cities with FCE above this indicates high level of fear of crime events while there is less fear of crime in city/cities where FCE is below this. In Ibadan the value of FCE (1.6) was below the mean value of FCE (3.6) for the three cities (see figure 3). The mean FCE of Zaria was 3.8. The FCE of Owerri which was 5.3 was not only above the mean FCE; it was almost three times that of Ibadan. The implication was that residents of Owerri exercised a higher level of fear of crime events. It could therefore be concluded that Ibadan city was less a monster of fear for dwellers compared to Zaria and Owerri. Residents of Ibadan feared crime events almost three times less than residents of Owerri based on

the crime events studied. This could be further corroborated with the smallest (among the three cities studied) figures of CCM and ACMC experienced by households of Ibadan. Recall that fear is induced by among others, crime experienced and/ or information on crime incidence received. In spite of religious cum tribal clashes in the northern part of the nation, the residents' fear of crime events in Zaria was low when compared to Owerri. This was however the situation before the current impasse of 'Boko aram'.

On the aggregate level, crime events that residents feared above the level of crime events in the study area included 'kidnapping' (4.3); 'money stolen' (3.9) loss of life, house member tortured or beaten' and 'property carted away' each with FCE of 3.8; and 'infection with HIV/AIDS/other STD' (FCE 3.6). These crime events were the highly dreaded of all; even though, with varying levels of fear. Events of crime that residents fear less when compared with average level of fear of crime events in the whole study area included 'destruction of window/door locks and or burglar proof' (FCE 3.5); 'female member of household raped' and 'shock or psychological imbalance' each with FCE 3.4. Others included 'vandalization of vehicles' (FCE of 3.5), 'burning of houses and properties' and 'burning of vehicles' each with FCE of 3.0. Crime events in this category were feared less than those in the previous group. The mostly dreaded of all crime events examined was 'kidnapping' while the least dreaded were 'burning of houses and properties' and 'burning of vehicles'.

What people fear in crime is not only as a result of the crime experienced but those seen or heard and the inner pathological fear built over time as individuals grow within the context of their socio-cultural cum religious settings. The crime events with the highest level of fear listed above attests to the fact that man attached significance to the preservation of their lives and possession and the preservation of their lives.

In Owerri RCM, ARCE and FCE had the same pattern contrary to the observation made in Ibadan and Zaria where RCM, ARCE and FCE had varying pattern. The low density has the highest RCM, ARCE and FCE in Owerri. Next in rank is the medium and high densities. Areas of high crime incidence correspond to areas of high fear of criminal events in Owerri. Thus in Owerri level of fear of crime increases as incidence of crime increases. This is however different from the pattern recorded in Ibadan and Zaria. This suggests that a single generalization on crime incidence and fear of crime events cannot be made on the subjects by the empirical evidences provided in this study.

Table 8: Inter- City Variation in Fear of Crime Events in the Study Area

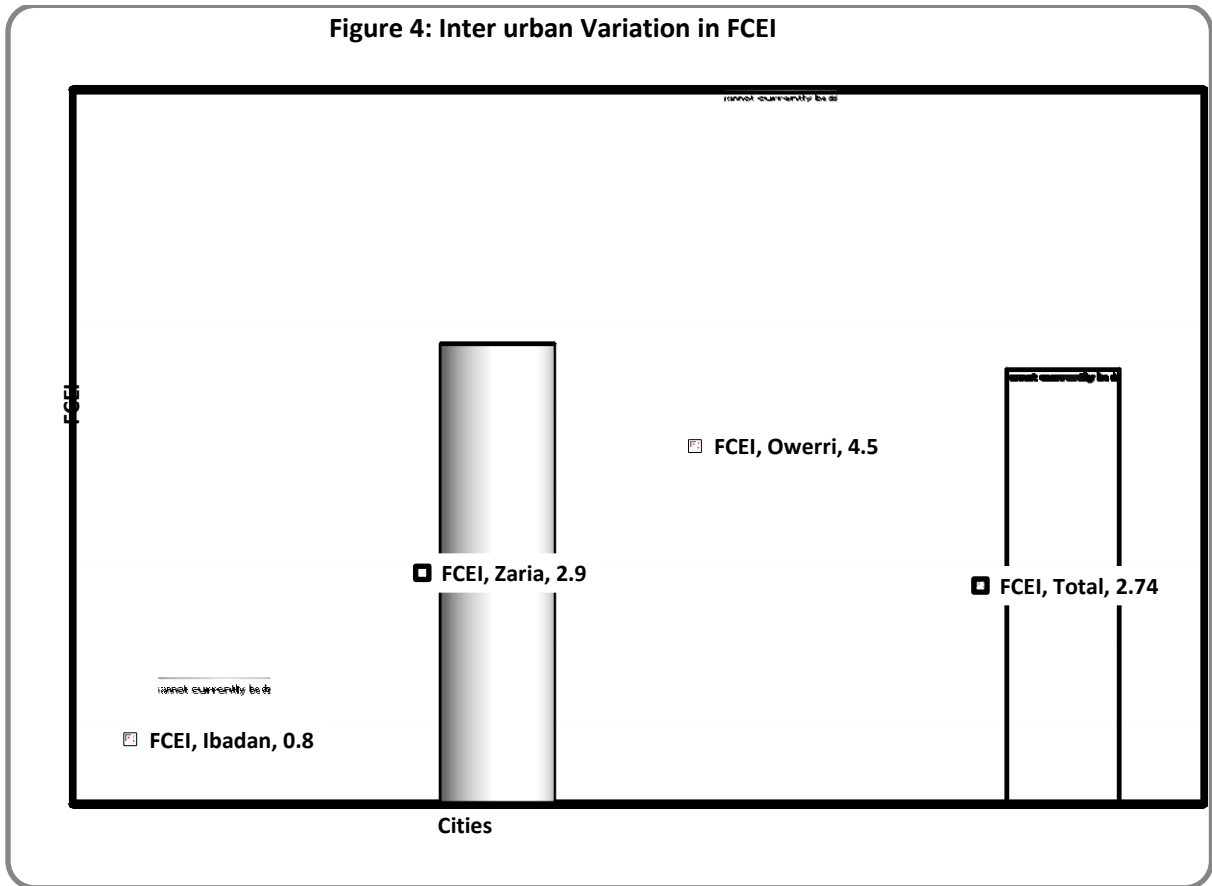
Events associated with crime incidence	FCE for Residential Areas			FCE	FCE- *FCE	(FCE- *FCE) ²
	Ibadan	Zaria	Owerri			
'loss of lives'	2.0	3.8	5.6	3.8	0.2	0.04
'female member of household raped'	1.4	3.9	4.9	3.4	0	0
'kidnapping'	3.7	3.7	5.5	4.3	0.7	0.49
'household member tortured or beaten'	1.9	3.8	5.8	3.8	0.2	0.04
'infection with HIV/AIDS/other	1.3	3.9	5.8	3.7	0.1	0.01

STD'						
'shock or psychological imbalance'	1.7	4.0	4.4	3.4	-0.2	0.04
'property carted away'	1.5	3.8	6.1	3.8	0.2	0.04
'money stolen'	1.6	4.1	5.9	3.9	0.3	0.09
'destruction of window/door locks and or burglar proof'	1.1	3.8	5.7	3.5	-0.1	0.01
'Vandalization of vehicle(s)'	1.1	3.8	5.0	3.3	-0.3	0.09
'burning of houses and properties'	1.0	3.8	4.2	3.0	-0.6	0.36
'burning of vehicle(s)'	1.0	3.7	4.2	3.0	-0.6	0.36
Total	19.9	46.1	63.1	42.9		1.57
*FCE	1.6	3.8	5.3	3.6		

Source: Author's, 2010

The pattern of fear of crime events observed in Ibadan was the inverse of the pattern of RCM and ARCE among the three residential areas. Fear of crime events was at the lowest ebb in the high density while the low density had a greater level of fear. This is may have resulted from the fact that residents in the high density residential area do not really have much to lose in terms of properties while the rich have much to lose because of high socio economic status.

Figure 4: Inter urban Variation in FCEI



4.7 Intra-city Variations in Socio-economic Characteristics

There is significant inter and intra-city variation in the level of education of the sampled population (Table 13). This implies that, in respect of western education, respondents are not ‘lettered’ at the same level while some are not ‘lettered’ at all. The proportion of residents with no formal education was more in Zaria (14.6%) than Ibadan (13.1%) and Owerri (3.3%). This category was more in the high density of Ibadan (22.9%) and Zaria (21.4%) while they are majorly found in the medium density of Owerri (10%). Respondents with Higher National Diploma (HND)/first degree in University were substantially found in Owerri (17.9%) compared to 17.1% in Zaria and 14.8% in Ibadan. Respondents with postgraduate educational qualification were more in the low density of Ibadan (13.5%) and Owerri (12.5%) while the same category was 11.1% in the medium density of Zaria.

Table 9: Respondents’ Highest Level of Education

Ibadan				
Level of Education	Residential Areas			Total (%)
	Low (%)	Medium (%)	High (%)	
No formal	0.0	5.8	22.9	13.1

Primary and Modern School	2.7	10.3	18.8	13.1
Secondary and Technical School	26.1	35.7	39.5	35.9
NCE/OND	23.4	22.8	15.0	19.1
HND/University	34.2	21.4	3.4	14.8
Post graduate	13.5	4.0	0.3	3.8
Total	100.0	100.0	100.0	100.0
Zaria				
No formal	0.0	9.1	21.4	14.6
Primary/modern school	2.3	7.1	15.6	11.1
Secondary/technical school	15.9	30.3	18.5	21.8
NCE/OND	15.9	18.2	16.8	17.1
HND/University	56.8	24.2	19.7	26.3
Post graduate	9.1	11.1	8.1	9.2
Total	100.0	100.0	100.0	100.0
Owerri				
No formal	0.0	10.0	0.0	3.3
Primary/modern school	0.0	1.7	4.3	2.7
Secondary/Technical school	37.5	21.7	41.3	34.2
NCE/OND	12.5	21.7	17.4	17.9
HND/University	37.5	41.7	34.8	37.5
Post graduate	12.5	3.3	2.2	4.3
Total	100.0	100.0	100.0	100.0

Source: Author's, 2010

Documented in Table 10 is the occupational characteristic of respondents. More unemployed population was found in Zaria (10.9%) compared to Ibadan (9.7%) and Owerri (5.1%). The category of respondents in farming and unorganized private jobs are more in Ibadan (32.9%) followed by Zaria (24.7%) and Owerri (11.2%). This group majorly include the farmers, artisans and traders who are involved in indigenous occupation in these cities. The data demonstrated the relative significance attached to the practice of indigenous occupation in the three cities. Respondents who were involved in 'white collar jobs': organised private jobs and public service were significantly found in Zaria (38.1%) compared to 32.6% in Owerri and 27.8% in Ibadan. The high density of Zaria (15.3%) and Ibadan (10.7%) housed more proportion of unemployed respondents compared to Owerri where the unemployed resided more in the low density (12.9%). The case of the low density of Owerri where substantial proportion of the educated resided yet with considerable population of unemployed is not odd since one could have any educational qualification yet unemployed.

Table 10: Respondents' Occupation

Ibadan				
Occupation	Residential Areas			Total (%)
	Low (%)	Medium (%)	High (%)	
Farming	0.9	0.4	1.9	1.2

Unorganized private sector	18.0	19.7	45.0	31.7
Organized private sector	15.3	19.3	13.5	15.8
Public service	21.6	12.1	8.5	12.0
Retiree/pensioner	16.2	9.0	1.3	6.4
Student	17.1	20.6	11.6	15.6
Apprentice	2.7	9.9	7.5	7.5
Unemployed	8.1	9.0	10.7	9.7
Total	100.0	100.0	100.0	100.0
Zaria				
Farming	0.0	9.2	16.5	12.2
Unorganized private sector	0.0	11.2	15.9	12.5
Organized private sector	13.9	22.4	12.9	16.1
Public service	61.1	23.5	12.9	22.0
Retiree/pensioner	0.0	5.1	1.8	2.6
Student	25.0	19.4	24.1	22.7
Apprentice	0.0	2.0	0.6	1.0
Unemployed	0.0	7.1	15.3	10.9
Total	100.0	100.0	100.0	100.0
Owerri				
Farming	0.0	11.5	1.2	4.5
Unorganized private sector	3.2	3.3	10.5	6.7
Organized private sector	12.9	11.5	18.6	15.2
Public service	29.0	21.3	10.5	17.4
Retiree/pensioner	0.0	4.9	1.2	2.2
Student	38.7	41.0	53.5	46.6
Apprentice	3.2	3.3	1.2	2.2
Unemployed	12.9	3.3	3.5	5.1
Total	100.0	100.0	100.0	100.0

Source: Author's, 2010

The 'white collar job' population dominated the low density of Zaria (75%), Owerri (41.9%) and Ibadan (36.9%). Low densities were known for high educational qualification, highly placed labour force and business personnel (Onokerhoraye and Omuta 1986). The observed difference in the occupational status of respondents has significant inter and intra-city variation. Conclusively, the type of occupation as well as the number of respondents who engaged in different occupation and the unemployed population varies significantly within each city as well as among the three sampled cities.

The preponderance of crime of acquisition in the high density of Ibadan and Zaria cannot be divulged from the 'no' or low educational qualifications with low paid jobs and high level of unemployment which were capable of accentuating poverty thus engendering illegal means of livelihood in order to survive. This could attest to the high incidence of crime of acquisition in the high density of Ibadan and Zaria. In addition the low level of affluence in this area is also indicative of the low level of fear of crime despite the high incidence of crime of acquisition in the

area. The urban poor living from hand to mouth having less tangible that criminals could substantially contend for thus exercise a low fear of crime. Even if there is need to combat the high tide of crime in these areas the economic power is absent. The traditional core areas (high density) of Ibadan and Zaria are places where anonymity could not be easily framed to perform criminal activities considering the level of cohesion and sense of communality among residents. The occupational characteristics of unorganized private practices (informal activities) of trading, artisan work and others within residential vicinity provided opportunity for residents to provide natural surveillance for their areas. This could be linked with the low level of fear in these areas. Index values for FCE in these areas were relatively lower than what was observable in other areas of the same city. Residents tend to express low level of fear in areas where help could be received in case of criminal attack especially within or around ones home. The disadvantageous part of the nature of occupation of high density dwellers is that the crowd attracted to these areas could frame patronage while performing nefarious criminal activities. This explanation is not undermining the fact that the indigenous Zaria city: one of the high density areas was an area with strict monitoring such that stranger do not have easy access thus reducing anonymity. Other high densities selected in Zaria such as part of Samaru and Sabongari intensively housed multi tribal groups thus encouraging anonymity.

Despite a low crime incidence in the low densities of Ibadan and Zaria, there was a relatively high level of fear of crime events. The high fear of crime (FCE) could be borne out of the availability of what criminals can come after (money and properties). This results in high usage of household safety measures in order to safeguard lives and properties. Incidence of crime in the low and medium densities where residents were involved in occupation which takes them away from their residences can be linked with the fact that their residential environment are rendered ghost zones with less 'capable guardian' or involuntary surveillance which could have been provided by people in the neighbourhood or the by passerby. This conforms to the observations made by Afon (2001) and Abodunrin, (2004). The relatively high crime incidence and the consequential high fear of crime recorded in the low and medium density areas of Owerri was associated with high affluence in lieu of high occupational characteristics, and high income observed in these areas together with the argument of ghost zones earlier advanced.

The income distribution of the sampled population is detailed in Table 11. Respondents in the very low income class i.e. of monthly income lower than the basic salary (obtainable in the nation when the survey was conducted) i.e less than or exactly #6,000:00, were majorly found in Owerri (60.2%) followed by Ibadan (39.1%) and Zaria (37.8%). The group dominated the high density of the three cities: Owerri (64.2%), Zaria (44.4%) and Ibadan (42.0%). Respondents with #6,001:00- #25,000:00 were more in Ibadan (40.5%) than Zaria (33.0%) and Owerri (22.7%). Residents in the next category: #25,001:00 - #70,000:00 dominates Zaria (19.6%) followed by Ibadan (18.8%) and Owerri (11.9%). At the upper rung of the ladder, residents with more than or exactly #70,001:00 average monthly income were more in Zaria (9.6%), than Owerri (5.1%) and Ibadan (1.6%). Bulk of the respondents with <=#6,000:00 average monthly income dominated the high density of Owerri (64.2%), Zaria (44.4%) and Ibadan (42.0%). Considerable proportion of the respondents earning #6,001:00 - #25,000:00 were found in high density of Ibadan (51.1%) and Zaria (39.6%) but low density of Owerri had 30.3%. The low density of Zaria accommodated a major proportion (56.8%) of residents earning #25,001:00 - #70,000:00 compared to 38.8% in Ibadan and 15.2% in Owerri. Residents with greater than or exactly #70,001:00 average monthly

income dominated the low density area of the three cities in this pattern: Zaria (16.2%), Ibadan (7.8%) and Owerri (6.1%).

There was significant inter and intra-city variation in monthly income distribution among the three cities and within Ibadan and Zaria (see Table 13). But the intra-city variation observed in Owerri was not significant. The insignificance of the difference in monthly income distribution of residents of Owerri indicated that the various group of income class could be found in any of the residential area thus leaving less stratification in lieu of monthly income. This attested to the high average crime experienced (ARCE) in the three residential areas relative to what is obtainable in the residential areas of Ibadan and Zaria.

Table 11: Average Monthly Income of Respondents

Ibadan				
Monthly Income	Residential Areas			Total (%)
	Low (%)	Medium (%)	High (%)	
<=#6,000:00	32.0	38.4	42.0	39.1
#6,001:00-#25,000:00	21.4	34.7	51.1	40.5
#25,001:00-#70,000:00	38.8	26.4	6.6	18.8
>=#70,001:00	7.8	0.5	0.3	1.6
Total	100.0	100.0	100.0	100.0
Zaria				
<=#6,000:00	24.3	32.6	44.4	37.8
#6,001:00-#25,000:00	2.7	34.8	39.6	33.0
#25,001:00-#70,000:00	56.8	20.2	9.7	19.6
>=#70,001:00	16.2	12.4	6.3	9.6
Total	100.0	100.0	100.0	100.0
Owerri				
<=#6,000:00	48.5	61.3	64.2	60.2
#6,001:00-#25,000:00	30.3	16.1	24.7	22.7
#25,001:00-#70,000:00	15.2	17.7	6.2	11.9
>=#70,001:00	6.1	4.8	4.9	5.1
Total	100.0	100.0	100.0	100.0

Source: Author's, 2010

In regards to possession of vehicles this pattern of distribution was observed in the three cities: Ibadan (58.3%); Zaria (56.2%) and Owerri (50.8%). Substantial proportion of the respondents without vehicle(s) dominated the high densities of Ibadan (81.0%) and Zaria (67.5%) while the medium density of Owerri (52.2%) housed this same category (see Table 6.8). Majorly in the study area respondents owned 1-2 vehicles: Owerri (38.1%), Zaria (36.4%) and Ibadan (34.2%). This category dominated the low density of Zaria (64.3%), Ibadan (58.6%) and Owerri (46.7%). Respondents with more than 2 vehicles were found considerably in Owerri (11.0%), followed by Ibadan and Zaria with the same proportion of 7.5%. This category was largely found in the low density of the three cities: Ibadan (28.8%), Zaria (16.7%) and Owerri (10.0%). The observed inter and intra-city variation in car ownership within and among the three cities was significant (Table 13). This indicated that people owned vehicles differently within and among the three cities.

Table 12: Ownership of Vehicles

Ibadan				
No of vehicles owned by household	Residential Areas			Total (%)
	Low (%)	Medium (%)	High (%)	
None	12.6	48.9	81.0	58.3
1-2 vehicles	58.6	44.8	18.0	34.2
More than 2 vehicles	28.8	6.3	0.9	7.5
Total	100.0	100.0	100.0	100.0
Zaria				
None	19.0	53.0	67.5	56.2
1-2 vehicles	64.3	39.0	27.7	36.4
More than 2 vehicles	16.7	8.0	4.8	7.5
Total	100.0	100.0	100.0	100.0
Owerri				
None	43.3	52.5	52.2	50.8
1-2 vehicles	46.7	37.7	35.6	38.1
More than 2 vehicles	10.0	9.8	12.2	11.0
Total	100.0	100.0	100.0	100.0

Source: Author's, 2010

Affluence in the society is measured partly by the possession of certain things some of which include vehicle and house. Greater number of respondents with vehicles resided in the low density of the three cities while the ones without vehicle were more in the high density. As stated earlier the availability of possessions which are targets of crime have the propensity of accentuating fear in the owners even if the actual experience has never been a reality. This could be the probable explanation of high level of fear of crime in the low density residential areas of the three cities.

Table 13: Chi Square Summary of Socio-economic Variables

S/N	Variable	Nature of Variation	City	X ² value	d f	P value	Remark
1	Level of Education	Intra	Ibadan	174.864	10	0.000	Significant
			Zaria	45.955	10	0.000	Significant
			Owerri	26.124	10	0.004	Significant
		Inter	3 cities	93.173	10	0.000	Significant
2	Occupation	Intra	Ibadan	95.903	14	0.000	Significant
			Zaria	63.274	14	0.000	Significant
			Owerri	30.426	14	0.007	Significant
		Inter	3 cities	219.188	14	0.000	Significant
3	Monthly Income	Intra	Ibadan	103.924	6	0.000	Significant
			Zaria	53.652	6	0.000	Significant
			Owerri	7.502	6	0.277	Insignificant
		Inter	3 cities	62.674	6	0.000	Significant
4	Vehicle Ownership	Intra	Ibadan	207.348	4	0.000	Significant
			Zaria	33.227	4	0.000	Significant

		Owerri	1.354	4	0.852	Insignificant
		Inter	3 cities	4	0.341	Significant

Source: Author's, 2010

5. Conclusion

The study established that there was significant intra and inter urban variation in the incidence of crime in the selected cities. It was observed that in Owerri the values of RCM and ARCE were inversely related among the residential zones. While RCM decreased from high towards the medium to the low density area, the ARCE increased from the low to the high density area. Findings in Ibadan and Zaria however showed that RCM and ARCE were decreasing from the high to the medium then low density areas. In the same vein the level of fear of crime expressed by residents varied within and between the cities. The highest level of fear of crime was expressed by residents of Owerri. The pattern of fear of crime events observed in Ibadan and Zaria was a reverse of the pattern of residential crime magnitude and average crime experienced among the three residential areas. Fear of crime events was at the lowest ebb in the high density while the low density had a greater level of fear of events associated with crime. On the contrary in Owerri the low density had the highest RCM and ARCE followed by the medium and high densities. The value of FCE exhibits the same pattern. Areas of high crime incidence corresponded to areas of high fear of criminal events in Owerri. The implication of these findings for policy formulation is evident.

It is suggested that the interpretation and conclusion on incidence of crime in residential areas be made within the context of the population size of such area and the prevailing circumstances. This is because other areas, though, of different residential densities, yet within the same city, may be experiencing higher crime rate. It is further recommended that security interventions should be tailored towards 'crime and fear' situations of each city besides the general national security programmes. Besides this, within each city crime intervention should also vary by residential density. Specific areas should be taken uniquely in order to address crime situation in such places. This will forestall a scenario of over flooded interventions in some areas and inadequate interventions in others.

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Jacobson Radicals and Brown-McCoy Radicals for Gamma-Rings

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Abstract

This paper describes some basic properties on Jacobson radicals and Brown McCoy radical for gamma rings. Moreover, right quasi regular element/Gamma-ring with strong right unity and their extension to the projective product of Gamma-rings are extensively studied. A relation between the Brown McCoy radicals of a Gamma-ring and its left operator ring has been established here.

AMS Mathematics subject classification: Primary 16N60; Secondary 16W25, 16U80

Keywords: Right quasi regular element/Right (Left) unities/Jacobson radical/Brown McCoy radical/Projective product of Gamma-rings

1. Introduction:

Nobusawa developed the notion of a Gamma-ring which is more general than a ring [9]. He obtained the analogue of the Wedderburn theorem for simple Gamma-ring with minimum condition on one-sided ideals. Barnes [12] weakened slightly the defining conditions for a Gamma-ring, introduced the notion of prime ideals, primary ideals and radical for a Gamma-ring. Radicals play an important role in the field of Gamma-ring theory. There is a very strong theory of various radicals on general rings [7,10]. Many prominent mathematicians have extended fruitfully many significant technical results on radicals of general ring to the radicals of Gamma-ring [1,2,3,4,5,6,8,11,13].

2. Fundamental Terminologies:

The following terminologies are introduced for our purpose:

Definition 2.1: Let (X, Γ) be a gamma ring with left and right operator rings L and R respectively. X is said to have a **left (or right) unity** if there exist $d_1, d_2, \dots, d_n \in X$ and $\delta_1, \delta_2, \dots, \delta_n \in \Gamma$ such that for all $x \in X$, $\sum_{i=1}^n d_i \delta_i x = x$ (or $\sum_{i=1}^n x \delta_i d_i = x$).

X is said to have a **strong left (or strong right) unity** if there exist $d \in X, \delta \in \Gamma$ such that $d\delta x = x$ or $x\delta d = x$ for all $x \in X$.

An ideal I of X will be called **left modular (left strongly modular)** if the factor gamma ring X/I has a left unity (strong left unity). **Right modular and right strongly modular ideals** are similarly defined.

Definition 2.2: A nonzero ideal I of a gamma ring (X, Γ) such that $I \neq X$ is said to be **maximal** ideal, if there exists no proper ideal of X containing I .

Definition 2.3: An element a of a gamma ring (X, Γ) is **strongly nilpotent** if for any $\gamma \in \Gamma$ there exist a positive integer n such that $(a\gamma)^n a = (a\gamma a\gamma a\gamma \dots a\gamma)a = 0$. A subset S of X is **nil** if each of its elements is nilpotent.

Definition 2.4: An element a of a gamma ring (X, Γ) is **right quasi-regular** (rqr) if, for any $\gamma \in \Gamma$ there exist $\eta_i \in \Gamma, x_i \in X, i = 1, 2, \dots, n$ such that

$$x\gamma a + \sum_{i=1}^n x\eta_i x_i - \sum_{i=1}^n x\gamma a \eta_i x_i = 0 \text{ for all } x \in X$$

A subset S of X is rqr if every element in S is rqr.

$\mathfrak{g}(X) = \{a \in X : \langle a \rangle \text{ is rqr}\}$ is the right **Jacobson radical** of X .

Definition 2.5: The **Brown-McCoy radical**, $B(X)$ of a gamma ring (X, Γ) is the upper radical determined by the class of all simple Γ -rings with a strong left unity. Also $B(X)$ is the intersection of all maximal left strongly modular ideals of X [6]. For details of the Brown-McCoy radical of a ring refer [10], Chapter 7.

Definition 2.6: Let (X_1, Γ_1) and (X_2, Γ_2) be two gamma rings. Let $X = X_1 \times X_2$ and

$\Gamma \boxtimes = \Gamma_1 \times \Gamma_2$. Then defining addition and multiplication on X and $\Gamma \boxtimes$ by,

$$(x_1, x_2) + (y_1, y_2) = (x_1 + y_1, x_2 + y_2),$$

$$(\alpha_1, \alpha_2) + (\beta_1, \beta_2) = (\alpha_1 + \beta_1, \alpha_2 + \beta_2)$$

$$\text{and } (x_1, x_2)(\alpha_1, \alpha_2)(y_1, y_2) = (x_1\alpha_1y_1, x_2\alpha_2y_2)$$

for every $(x_1, x_2), (y_1, y_2) \in X$ and $(\alpha_1, \alpha_2), (\beta_1, \beta_2) \in \Gamma$,

(X, Γ) is a gamma ring. We call this gamma ring as the **Projective product of gamma rings**.

3. Main Results:

Theorem 3.1: If (X, Γ) be the projective product of two gamma rings (X_1, Γ_1) and (X_2, Γ_2) , then every rqr element of X gives rise to rqr element of X_1, X_2 and vice versa.

Proof: Let $a = (a_1, a_2) \in X$ be any rqr element. Then for any $\gamma = (\alpha, \beta) \in \Gamma$, there exists $\eta_i = (\alpha_i, \beta_i) \in \Gamma$ and $z_i = (x_i, y_i) \in X, i = 1, 2, \dots, n$ such that,

$$z\gamma a + \sum_{i=1}^n z\eta_i z_i - \sum_{i=1}^n z\gamma a \eta_i z_i = 0 \text{ for all } z = (x, y) \in X$$

$$\Rightarrow (x, y)(\alpha, \beta)(a_1, a_2) + \sum_{i=1}^n (x, y)(\alpha_i, \beta_i)(x_i, y_i) - \sum_{i=1}^n (x, y)(\alpha, \beta)(a_1, a_2)(\alpha_i, \beta_i)(x_i, y_i) = 0$$

$$\Rightarrow (x\alpha a_1, y\beta a_2) + \sum_{i=1}^n (x\alpha_i x_i, y\beta_i y_i) - \sum_{i=1}^n (x\alpha a_1 \alpha_i x_i, y\beta a_2 \beta_i y_i) = 0$$

$$\Rightarrow (x\alpha a_1, y\beta a_2) + \left(\sum_{i=1}^n x\alpha_i x_i, \sum_{i=1}^n y\beta_i y_i \right) - \left(\sum_{i=1}^n x\alpha a_1 \alpha_i x_i, \sum_{i=1}^n y\beta a_2 \beta_i y_i \right) = 0$$

$$\Rightarrow \left((x\alpha a_1 + \sum_{i=1}^n x\alpha_i x_i - \sum_{i=1}^n x\alpha a_1 \alpha_i x_i), (y\beta a_2 + \sum_{i=1}^n y\beta_i y_i - \sum_{i=1}^n y\beta a_2 \beta_i y_i) \right) = 0 = (0, 0)$$

$$\Rightarrow x\alpha a_1 + \sum_{i=1}^n x\alpha_i x_i - \sum_{i=1}^n x\alpha a_1 \alpha_i x_i = 0 \forall x \in X_1 \text{ and}$$

$$y\beta a_2 + \sum_{i=1}^n y\beta_i y_i - \sum_{i=1}^n y\beta a_2 \beta_i y_i = 0 \forall y \in X_2$$

Thus, for $a_1 \in X_1$, for all $\alpha \in \Gamma_1$, there exist $\alpha_i \in \Gamma_1, x_i \in X_1; i = 1, 2, \dots, n$ such that

$$x\alpha a_1 + \sum_{i=1}^n x\alpha_i x_i - \sum_{i=1}^n x\alpha a_1 \alpha_i x_i = 0 \forall x \in X_1$$

So, a_1 is a rqr element of X_1 . Similarly, a_2 is a rqr element of X_2 .

Conversely, let a_1 and a_2 be two rqr elements of X_1 and X_2 respectively.

Then, $a = (a_1, a_2) \in X$. We show a is a rqr element of X .

Since, a_1 and a_2 are rqr elements of X_1 and X_2 respectively, so for all $\alpha \in \Gamma_1$ and $\beta \in \Gamma_2$ there exists $\alpha_i \in \Gamma_1$, $x_i \in X_1$; $i = 1, 2, \dots, n$ and $\beta_j \in \Gamma_2$, $y_j \in X_2$; $j = 1, 2, \dots, m$ such that,

$$x\alpha a_1 + \sum_{i=1}^n x\alpha_i x_i - \sum_{i=1}^n x\alpha a_1 \alpha_i x_i = 0 \quad \forall x \in X_1$$

and
$$y\beta a_2 + \sum_{j=1}^m y\beta_j y_j - \sum_{j=1}^m y\beta a_2 \beta_j y_j = 0 \quad \forall y \in X_2$$

Without the loss of generality, let $m \leq n$. We define,

$$\delta_k = \begin{cases} \beta_k & \text{if } k \leq m \\ 0 & \text{if } m < k \leq n \end{cases} \quad ; \quad p_k = \begin{cases} y_k & \text{if } k \leq m \\ 0 & \text{if } m < k \leq n \end{cases} \quad \text{and} \quad \eta_k = (\alpha_k, \delta_k) \in \Gamma, \quad z_k = (x_k, p_k) \in X.$$

Then for any $\gamma = (\alpha, \beta) \in \Gamma$, we get,

$$z\gamma a + \sum_{k=1}^n z\eta_k z_k - \sum_{k=1}^n z\gamma a \eta_k z_k = 0 \quad \text{for all } z = (x, y) \in X.$$

So, a is a rqr element of X and hence the result.

Theorem 3.2: If (X, Γ) be the projective product of two gamma rings (X_1, Γ_1) and (X_2, Γ_2) , then,

$$\mathfrak{g}(X) = \mathfrak{g}(X_1) \times \mathfrak{g}(X_2).$$

Proof: Let, $a \in \mathfrak{g}(X)$ be any element.

$\Leftrightarrow \langle a \rangle$ is an rqr ideal of X

$\Leftrightarrow \langle (a_1, a_2) \rangle$ is an rqr ideal of X [$a \in X$, so, $a = (a_1, a_2)$ where $a_1 \in X_1$ and $a_2 \in X_2$]

$\Leftrightarrow \langle a_1 \rangle \times \langle a_2 \rangle$ is an rqr ideal of X

$\Leftrightarrow \langle a_1 \rangle$ and $\langle a_2 \rangle$ are rqr ideals of X_1 and X_2 respectively. [By result(1)]

$\Leftrightarrow a_1 \in \mathfrak{g}(X_1)$ and $a_2 \in \mathfrak{g}(X_2)$

$\Leftrightarrow a = (a_1, a_2) \in \mathfrak{g}(X_1) \times \mathfrak{g}(X_2)$

Hence, $\mathfrak{g}(X) = \mathfrak{g}(X_1) \times \mathfrak{g}(X_2)$. This result can be extended to the projective product of any finite number of gamma rings.

Theorem 3.3: If (X, Γ) be a non zero gamma ring with the strong right unity d , then, $d \notin \mathfrak{g}(X)$.

Proof: Since (X, Γ) is a non zero gamma ring with the strong right unity d , so there exists a $\delta \in \Gamma$ such that, $x\delta d = x$ for all $x \in X$. So, $d\delta d = d$.

Since, (X, Γ) is a non zero, so, $d \neq 0$. We show, d is not rqr.

If possible, let d be rqr. Then for the above $\delta \in \Gamma$, there exists $\eta_i \in \Gamma$ and $x_i \in X$, $i = 1, 2, \dots, n$ such that,

$$x\delta d + \sum_{i=1}^n x\eta_i x_i - \sum_{i=1}^n x\delta d \eta_i x_i = 0 \text{ for all } x \in X$$

.....(i)

Choosing $d = \delta$ in (i) we get,

$$d\delta d + \sum_{i=1}^n d\eta_i x_i - \sum_{i=1}^n d\delta d \eta_i x_i = 0$$

$$\Rightarrow d + \sum_{i=1}^n d\eta_i x_i - \sum_{i=1}^n d\eta_i x_i = 0$$

$\Rightarrow d = 0$, which is a contradiction.

So, d is not rqr and hence $d \notin \mathcal{g}(X)$.

Theorem 3.4: Every strongly left modular ideal of a gamma ring (X, Γ) defines a strongly left modular ideal of its left operator ring L and conversely.

Proof: Let I be a strongly left modular ideal of the gamma ring (X, Γ) . Then the factor gamma ring X/I has a strong left unity.

Then there exist $d + I \in X/I$ and $\delta \in \Gamma$ such that,

$$(d + I)\delta(x + I) = x + I \forall x + I \in X/I \Rightarrow d\delta x + I = x + I \forall x \in X \dots\dots\dots(i)$$

We define, $P = \{\sum_i [x_i, \gamma_i] : \gamma_i \in \Gamma, x_i \in I\}$. Then P is an ideal of L and so L/P is a factor ring.

Since, $d \in X, \delta \in \Gamma$, so, $[d, \delta] \in L \Rightarrow [d, \delta] + P \in L/P$

Then for any $\sum_i [x_i, \gamma_i] + P \in L/P$, we get,

$$([d, \delta] + P)(\sum_i [x_i, \gamma_i] + P)$$

$$= [d, \delta] \sum_i [x_i, \gamma_i] + P \quad [\text{By definition of the operations in } L/P]$$

$$= \sum_i [d, \delta][x_i, \gamma_i] + P$$

$$= \sum_i [d\delta x_i, \gamma_i] + P \quad [\text{By definition of the operations between the elements in } L]$$

$$= \sum_i [x_i, \gamma_i] + P \quad [\text{Using (i)}]$$

Thus, $[d, \delta] + P$ is the strong left unity in the ring L/P i.e P is a strongly left modular ideal of L .

Conversely, let P be a strongly left modular ideal of L . Then, P is of the form,

$$P = \{\sum_i [x_i, \gamma_i] : \gamma_i \in \Gamma, x_i \in I \subseteq X\}. \text{ Since, } P \text{ is an ideal of } L, \text{ so, } I \text{ is an ideal of } X.$$

We show I is strongly left modular.

$$\begin{aligned}
 & \text{Since, } P \text{ is a strongly left modular ideal of } L, \text{ so, there exists } [d, \delta] + P \in L/P \text{ such that,} \\
 & \{[d, \delta] + P\}\{[x, \gamma] + P\} = [x, \gamma] + P \quad \forall x \in X, \gamma \in \Gamma \\
 & \Rightarrow [d\delta x, \gamma] + P = [x, \gamma] + P \quad \forall x \in X, \gamma \in \Gamma \\
 & \Rightarrow -[x, \gamma] + [d\delta x, \gamma] + P = P \quad \forall x \in X, \gamma \in \Gamma \\
 & \Rightarrow [-x + d\delta x, \gamma] + P = P \quad \forall x \in X, \gamma \in \Gamma \\
 & \Rightarrow [-x + d\delta x, \gamma] \in P \quad \forall x \in X, \gamma \in \Gamma \\
 & \Rightarrow -x + d\delta x \in I \quad \forall x \in X \\
 & \Rightarrow (-x + d\delta x) + I = I \quad \forall x \in X \\
 & \Rightarrow d\delta x + I = x + I \quad \forall x \in X \\
 & \Rightarrow (d + I)\delta(x + I) = x + I \quad \forall x + I \in X/I
 \end{aligned}$$

So, $d + I$ is the strong left unity in X/I i.e I is strongly left modular ideal of X and hence the result.

Theorem 3.5: If (X, Γ) is a gamma ring with the left operator ring L , then $B(X) = B(L)^+$.

Proof: The Brown-McCoy radical of a gamma ring can be defined as the intersection of all maximal left strongly modular ideals [1].

i.e $B(X) = \bigcap P$, where P runs over all maximal left strongly modular ideals of X .

We know that every ideal of L is expressible in the form $[A, \Gamma]$, where A is an ideal of X .

Also, every maximal ideal P of X gives rise to a maximal ideal $[P, \Gamma]$ of L and conversely and every strongly left modular ideal P of a gamma ring X defines a strongly left modular ideal $[P, \Gamma]$ of L and conversely.

$$\begin{aligned}
 & \text{So, } B(X) = \bigcap [P, \Gamma]^+ \text{ [Since } P = [P, \Gamma]^+ \text{]} \\
 & \Rightarrow B(X) = (\bigcap [P, \Gamma])^+ \text{ [Since } (\bigcap A)^+ = \bigcap A^+ \text{]} \\
 & \Rightarrow B(X) = (\bigcap I)^+, \text{ where } I \text{ runs over all maximal left strongly modular ideals of } L. \\
 & \Rightarrow B(X) = B(L)^+
 \end{aligned}$$

Theorem 3.6: Every strongly left modular ideal of X gives rise to strongly left modular ideals of X_1, X_2 and conversely, where, (X, Γ) is the projective product of two Γ -rings (X_1, Γ_1) and (X_2, Γ_2) .

Proof: Let P be a strongly left modular ideal of X . Then $P = A \times B$, where A and B are the ideals of X_1 and X_2 respectively.

Since, P is strongly left modular ideal of X , so, X/P has strong left unity.

So, there exists $d + P \in X/P, \delta \in \Gamma$, such that,

$$(d + P)\delta(x + P) = x + P \forall x + P \in X/P$$

$$\Rightarrow d\delta x + P = x + P \forall x \in X$$

$$\Rightarrow (d_1, d_2)(\delta_1, \delta_2)(x_1, x_2) + P = (x_1, x_2) + P \forall x = (x_1, x_2) \in X \quad [Where d = (d_1, d_2) \in X \text{ and } \delta = (\delta_1, \delta_2) \in \Gamma]$$

$$\Rightarrow (d_1\delta_1x_1, d_2\delta_2x_2) + A \times B = (x_1, x_2) + A \times B \forall x = (x_1, x_2) \in X$$

$$\Rightarrow (d_1\delta_1x_1 + A, d_2\delta_2x_2 + B) = (x_1 + A, x_2 + B) \forall x = (x_1, x_2) \in X$$

$$\Rightarrow d_1\delta_1x_1 + A = x_1 + A \forall x_1 \in X_1 \text{ and } d_2\delta_2x_2 + B = x_2 + B \forall x_2 \in X_2$$

$$\Rightarrow (d_1 + A)\delta_1(x_1 + A) = x_1 + A \forall x_1 + A \in X_1/A$$

$$\text{And } (d_2 + B)\delta_2(x_2 + B) = x_2 + B \forall x_2 + B \in X_2/B$$

So, X_1/A and X_2/B has strong left unities. i.e A and B are strongly left modular ideals of X_1 and X_2 respectively.

Conversely, let, A and B be two strongly left modular ideals of X_1 and X_2 respectively. Then $P = A \times B$ is an ideal of X . X_1/A and X_2/B has strong left unities, so, there exists $d_1 + A \in X_1/A$, $\delta_1 \in \Gamma_1$ and $d_2 + B \in X_2/B$, $\delta_2 \in \Gamma_2$ such that,

$$(d_1 + A)\delta_1(x + A) = x + A \forall x + A \in X_1/A \quad \text{and} \quad (d_2 + B)\delta_2(y + B) = y + B \forall y + B \in X_2/B$$

Taking $d = (d_1, d_2) \in X$ and $\delta = (\delta_1, \delta_2) \in \Gamma$, it can be shown that $d + P \in X/P$ is the strong left unity of X/P i.e P is strongly left modular ideal of X and hence the theorem.

Theorem 3.7: Let (X, Γ) be the projective product of two gamma rings (X_1, Γ_1) and (X_2, Γ_2) . Then every maximal ideal of X gives rise to two maximal ideals of X_1 or X_2 and conversely every maximal ideal of X_1 or X_2 give rise to a maximal ideal of X .

Proof: Let $P = A \times B$ be a maximal ideal of X , where A and B are the ideals of X_1 and X_2 respectively. We show, A and B are maximal ideals of X_1 and X_2 respectively.

If possible, let, A be not maximal. Then there exists an ideal I of X_1 such that,

$$A \subsetneq I \subsetneq X_1 \Rightarrow A \times B \subsetneq I \times B \subsetneq X_1 \times B \subseteq X_1 \times X_2$$

$$\Rightarrow P \subsetneq Q \subsetneq X, \text{ where } Q = I \times B \text{ is an ideal of } X$$

Thus there exists an ideal Q of X properly contained in between P and X , which contradicts that P is a maximal ideal. So A is maximal. Similarly B is also maximal.

Conversely, let A and B be two maximal ideals of X_1 and X_2 respectively. Then, $M = A \times X_2$ and $N = X_1 \times B$ are two ideals of X . We show M and N are maximal ideals of X .

If possible, let, M be not maximal. Then, there exist an ideal $S = I \times J$ of X such that,

$$M \subsetneq S \subsetneq X \Rightarrow A \times X_2 \subsetneq I \times J \subsetneq X_1 \times X_2$$

$$\text{Now, } A \times X_2 \subsetneq I \times J \subseteq I \times X_2 \Rightarrow A \times X_2 \subsetneq I \times X_2 \Rightarrow A \subsetneq I$$

Again, $I \times J \subsetneq X_1 \times X_2 \Rightarrow I \times X_2 \subsetneq X_1 \times X_2$ [Since, $A \times X_2 \subsetneq I \times J$ and J is an ideal of X_2 , so, $J = X_2$]. This implies, $I \subsetneq X_1$.

Thus, we get an ideal I of X_1 with $A \subsetneq I \subsetneq X_1$, which contradicts that A is maximal. So, M is a maximal ideal of X . Similarly N is also a maximal ideal of X and hence the result.

Theorem 3.8: If (X, Γ) be the projective product of two gamma rings (X_1, Γ_1) and (X_2, Γ_2) , then

$$B(X_1) \times B(X_2) \subseteq B(X).$$

Proof: We know, $B(X) =$ Intersection of all maximal left strongly modular ideals of X .

i.e $B(X) = \bigcap(A \times B)$, where $A \times B$ runs over all maximal left strongly modular ideals of X .

Since every maximal left strongly modular ideal of X gives rise to maximal left strongly modular ideals of X_1 and X_2 , so,

$B(X) = \bigcap A \times \bigcap B$, where A and B runs over some maximal left strongly modular ideals of X_1 and X_2 respectively

$\supseteq \bigcap A \times \bigcap B$, where A and B represents all maximal left strongly modular ideals of X_1 and X_2 respectively.

$$= B(X_1) \times B(X_2)$$

Hence, $B(X_1) \times B(X_2) \subseteq B(X)$.

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Lackadaisical Attitude of Students towards the Learning of Arabic Studies in Osun State, Nigeria.

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Abstract

The study of Arabic in the school curriculum is of great importance in the education of the child and in the development of his moral, spiritual, intellectual and social conduct. It has strong relations with Islamic Studies. Out of many subjects at the Secondary School level in Osun State, Arabic Studies have always drawn a negative attitude from both students and teachers. Students' enrolment at tertiary institutions and their interest in Arabic Studies has always been low. Studies abound on this phenomenon, as various researches have shown concern about students' poor performance in Arabic Studies. This study therefore is another contribution to this topical issue. It takes a look at how students perceive these problems and attempts to offer suggestions towards solving them. Based on this, empirical research was carried out. Questions were drawn while hypotheses were used to get opinions of people on it. Analyses were made to get result and recommendation was made thereafter.

Keyboard: Lackadaisical Attitude, Arabic Studies, Learning, Methodology, Discussion.

Introduction

Osun State is one of the thirty-six states and Federal capital, Abuja which form Nigeria as a country and was created in 1991. It consists thirty Local Government Areas. The total population of this state- according to official data of 1991 census is 2,203,016. Its boundary in the North is Kwara State. In the East are Ekiti and Ondo States. In the West is Oyo State and in the South is Ogun State. (Adeyemi 1996).

In Osun State, like other parts of Nigeria, Arabic Studies trains an individual in such a manner to be useful in the society. Owing to its strong link with Islamic Studies, it affords people to be trained and mentally disciplined. They also acquire the knowledge not only to satisfy an intellectual curiosity or just for material benefits but also to develop as rational and righteous being. As it is the language of Holy Quran, nobody can understand the in depth meanings of this Glorious Book unless the knowledge of Arabic is acquired to a certain level.

Hassan (2015) describes education as major veritable tool and the major structure for capacity building in every society including the very advanced one of Europe and America. He further states that there is no gain saying that the issue of education must be given utmost priority if Nigeria must compete favourably with other societies in today's globalised world in the area of moral uprightness and skilled manpower capable of effecting desired societal change. In recognition of this, basic education in the society provides the foundation for any educational pursuit.

As regards the study of Arabic it is a very important language of Islamic Studies. In fact, the primary sources of Islamic Studies are written in Arabic. Unfortunately, it is common today to find some teachers of Islamic Studies who are unable to recite the text of the Qur'an because of their deficiency in Arabic. Teachers of Islamic Studies are expected to be proficient in both Arabic and English. They are supposed to acquire a minimum degree of Arabic that will make them understand their subject matter very well. They are also required to have knowledge of English to enable them communicate effectively with their students.

Arabic Studies as a subject on the school curriculum is expected to make some impact on the lives of the individuals learning it. But it has been frequently argued that the impact of this subject has not been felt. (Adeyemi 2013). This led to the deterioration of interest in this subject in the society and scanty candidates in our tertiary institutions on this field. This has given the Government a great concern and this has led to the emphasis on the teaching of Arabic as the second language in the school curriculum in the present day the current system of education in Nigeria (National Policy on Education, 2004).

Another major issue in the present day education is the question of general falling standard of education in the sense that the low level of academic performance of students in our various educational institutions has been of great concern to many experts, teachers, parents and even some students themselves in the country especially Arabic Studies.

The poor performance of students in both internal and external examination however, is always attributable to many variables. For instance, this could be on how the government handles the subject in our educational programmes as an **elective subject** in the school curriculum. This

also is due to inadequate provision of necessary equipment in our schools and even shortage of personnel such as teachers, as well as social, psychological, financial, health and education problems.

It is this general issue of uncared attitude, poor performance and the factors affecting students' choice that have almost placed Arabic Studies as a subject in a precarious position in most of our institutions of learning.

Statement of the Problem

Having shown the inclination on Arabic students' enrolment into higher institutions, the study focuses on the nature of students' attitude in Arabic Studies. It hopes to find out the direction of students' attitude and factors undermining the meagre choice in Arabic Studies in the tertiary institutions whether it is towards a positive or negative trend. In addition, the study will extend further to find out the probable factors underlying the observed trend (s) and that pragmatic solutions will be suggested.

Research Questions

Answers are sought to the following questions:

1. What are the attitudes of students towards the Learning of Arabic Studies?
2. What are the attitudes of male students towards the learning of Arabic Studies?
3. What are the attitudes of female students towards the learning of Arabic Studies?
4. Is there any significant difference between the attitudes of the male and female students towards the learning of Arabic Studies?

Research Hypothesis

There is no significant difference between the attitude of male and female students towards the learning of Arabic Studies.

Purpose of the Study

The main purpose of this study is to examine the cause of the lackadaisical attitude of the students towards the learning of Arabic Studies at Secondary School level.

Significance of the Study

The result of this study would be beneficial to teachers in order to appreciate the difficulties being faced in the course of teaching and learning Arabic Studies. It is hoped that the finding of this study would shed more lights for parents, the school authorities, the government and the curriculum planners on the problems facing the teaching of Arabic Studies and the attitude of students towards learning it- starting from the secondary school level. It would also expose students' inability to choose the subject as a course in the higher institution. When the problems are identified, they can be removed, thereby enhancing effective teaching and learning of the subject. It is hoped also that the study would be a contribution to knowledge in general.

Methodology

The population of this study consisted all Arabic students in twenty secondary schools offering the course in Osun State where the subject is being thought.

A sample of two hundred students was randomly drawn from twenty schools mentioned above among Senior Secondary school I to III students.

The sample was made up of 100 male students (SS I and II – one each and SS III – three each from each school) and 100 female students (in the same way).

An instrument contained the Likers method on a four points scale: Strong Agree (SA - 1), Agree (A - 2), Disagree (D - 3), Strongly Disagree (SD - 4) was used to obtain the relevant data.

The instrument was made up of ten items. Students were requested to tick one of the four options provided against each statement. The relatively high scores indicate a negative attitude towards the learning of Arabic Studies while relatively low scores indicate a positive attitude. The instrument was pilot tested and found reliable and valid through the expert before it was being used on the sample for the study.

On the basis of the pattern of scoring, two critical ranges of scores were used to categories the subject into having either a positive attitude (from 1-49) or negative attitude (from 50-100) towards the study of Arabic Studies. Frequency and percentage distribution of attitude types was used to answer research questions 1 to 3 while the chi-square (χ^2) technique was used to answer research question 4 which had also been restated as hypothesis.

Results

Students who scored 50 marks and above were regarded as having negative attitude to the learning of Arabic Studies while those who scored less than 50 marks were regarded as having positive attitude to the learning of Arabic Studies.

Table 1 below shows the frequency counts and percentage distribution of attitude types among the entire subject.

Distribution of attitude types among all the subject:

Types of Attitude	Frequency	Percentage
Positive Attitude	09	4.5%
Negative Attitude	191	95.5%
Total	200	100%

This table above shows that 95.5% or 191 students out of the total number of 200 students sampled (which is a great majority) claimed to have a negative attitude towards the learning of Arabic Studies while 4.5% or 9 students claimed a positive attitude towards Arabic Studies.

Table II: General Attitude of male students towards the learning of Arabic Studies.

Types of Attitude	Frequency	Percentage
Positive	02	2%
Negative	98	98%
Total	100	100%

On the above table, 98 boys or 98% of the boys sampled claimed negative attitude to the learning of Arabic Studies. Two of the male students (i.e. 2%) demonstrated a positive attitude to the learning of Arabic Studies. Therefore, majority of the male students were negatively disposed towards Arabic Studies.

Table III: General Attitude of female students towards the learning of Arabic Studies.

Types of Attitude	Frequency	Percentage
Positive	07	07%
Negative	93	93%
Total	100	100%

The percentage of female students, according to the above table expressing a negative attitude which is 93% while only 7% of the girls sampled had a positive attitude towards the learning of Arabic Studies. Therefore, majority of the female students also were negatively disposed towards Arabic Studies.

Table IV: Chi Square on the difference between Attitude of Male and Female students to the learning of Arabic Studies.

Sex	Types of Attitude				Total	Calculated	Observed	Df	Alpha	Decision
	Positive		Negative							
	Observed	Expected	Observed	Expected						
Male	02	4.5	98	95.5	100	2.91	3.48	1	0.05	Not Significant
Female	07	4.5	98	95.5	100					
Total	09		191		200					

Discussion

In answer to the questions of attitude of students towards the learning of Arabic Studies, table I revealed that their attitude was quite unfavourable to the subject. This is justified by 95.5% of the students who showed a negative attitude to the Subject.

The findings from the Studies conducted by earlier researchers revealed that the performance of students in a given subject highly depends on the types of attitudes that the students demonstrate towards the subject. For instance, Adeyemi (2014) said that the more a student shows a positive attitude towards a subject, the better the performance of the students. In other words, students who possess favourable attitude towards subject, the better the content to be presented in an educational situation achieve better than students with poor attitude as predisposition.

Thus, the more positive a learner's attitude is towards a particular subject, the more likely is to succeed in learning the subject. Akinnaso (1980) argued that if a student has any distasteful experience in his/her academic pursuit, his/her learning may be greatly hampered, because he develops negative attitude to his learning. Dulay (1974) saw attitude as a social thing and confirmed that it is the society as a whole that shapes an individual's attitudes and the ideal that education relies. Abiri (1966) in his own contribution to the study of attitude concluded that attitude is an acquired tendency to react covertly or overtly in a manner which is the expressive of

a certain degree of favourability in relation to certain object, person, ideas or situation in our environment.

Therefore, the finding of a negative attitude in this study shows that learners' attitude in this study requires proper handling. The result in tables II and III indicate that the majority of male and female students were negatively disposed towards the learning of Arabic Studies.

The teachers' attitude might have contributed to the negative attitude of both male and female students as it can be buttressed by the findings in a research carried out by Oboh (1991) on the attitude of teachers. She observed that the positive attitude of the teachers formed the bedrock for students' better performance in the subject that the child was learning.

Table IV showed the Chi-square results that there were no significant differences between the attitudes of male and female students towards learning of Arabic Studies. Both males and females seem not to have realized the importance of Arabic Studies in helping them to grow as institutions around them. They seemed not to be aware that some tertiary institutions in Nigeria are now using Arabic Studies as a waiver or substitute for other course(s) in admitting students, like that of Ekiti State University, Ado-Ekiti, Nigeria.

It is observed from the findings in this study that the students' motivation as regard the integration and instruction in Arabic Studies are not enough. To support this view, the study carried out by Babatunde and Babatunde (1996) quoted from Dulay, Burt and Krashen's observation shows clearly that both integration and instrumental motivation can positively influence the rate and quality of second languages (L. 2) acquisition.

Conclusion

The findings of this study show that:

- (a) A great majority of students were negatively disposed towards the learning of Arabic Studies.
- (b) Most of the male and female students were negatively disposed towards the learning of Arabic Studies.
- (c) There was no significant difference between the attitudes of male and female students towards the learning of Arabic Studies.

Implication of the Study

The results of this study have implication for Arabic language teachers. It is also a contribution to knowledge in general. The results must have created the awareness that more efforts should be made to motivate the students to learn the subject such as conducive environment, adequate instructional materials, incentives in form of rewards for the best students and motivation to let the students have interest **willingly** in the subject.

Liman et-al (2015) opines that in spite of the challenges faced in the technological world today, with the explosion of Information Technology, Internet and effects of globalization Islamic Religious Knowledge (as well as Arabic Studies) are actually faced with more serious internal challenges. They explained that the challenges emanate starting from the mind-set of the teachers that handle the subjects. In terms of practical and theories which hitherto have great impacts towards their attitudes, perceptions, intellects and way of thinking as well as how they impact such attitudes to their students through the medium of the subject.

Obviously, quite a number of Arabic teachers are not possessing requisite qualification to teach the subject, the reason for this is due to the half bread knowledge they possess on the subject. Instead of restricting themselves to Islamic Studies that will not require rigorous and solid knowledge of Arabic Language. To ones dismay, some of them cannot construct correct and meaningful sentences in Arabic Language. Students who study the subject under the supervision of such teachers may not have the chance to learn the rudiments and fundamental knowledge of the subject from the early stage, since the foundation is very weak from the root. Whatever they learn subsequently will not be sound enough to stand the test of time.

These in no small measure constitute a major setback to the teaching of Islamic Religious Knowledge (IRK) as well as Arabic Studies in Secondary Schools, in Osun State to be precise and in Nigeria at large. Liman et-al (2015).

Recommendation

Based on the findings in this study and inferences drawn from them, the following recommendations are given with a view to further encouraging the students to learn Arabic Studies not only at the secondary school level, but also to pursue it to higher institutions.

Teachers

This research reveals that some teachers of Arabic Studies make the subject very dry, difficult, monotonous and frightening to their students. One can say that the attitude or interest is a good predictor of academic performance in any school subject. The Arabic Studies teachers before embarking on the teaching of this subject – should master the subject matter and provide the appropriate condition with good incentive for the students to learn. Arabic teachers should neither feel shy nor afraid of teaching the subject because it is what is being paid for. If there is no creativity in the usage of various teaching methods and technique, the students will consider the subject as a boring one, then the objectives of the subject will not be achieved.

To prove the importance of the study of Arabic, Bidmos asserts that:

Proficiency in Arabic is essential for teacher of Islamic Studies. This is not the same as acquisition of fluency and competence in Arabic. In other words, it is not mandatory on the teacher of Islamic Studies to be able to speak Arabic fluently or write it flawlessly. All that is required of him is the ability to read and understand the text written in Arabic. He should be able to read the Qur'an in Arabic in order to obtain first-hand information on his subject.

Parents

Parents should develop a positive attitude towards the learning of Arabic Studies. They should develop in their children favourable attitudes towards the learning of this subject. This can be done by simulating the interest of the children in learning the subject and encouraging them through provision of relevant text books and other educational materials they need on the subject. They should be concerned about the performance of their children by checking their books at home or by visiting them at school time to time to verify their performance.

Policy Makers and School Authorities

Arabic Studies as a school subject needs the aid of instructional materials for through understanding. There is the need for school authorities to increase the number of the periods on the time table and equip school with effective and adequate resources such as suitable Arabic Studies text books, films, video, well equipped Library and others to create a conducive environment for teaching and learning the subject. Career talk should be included in the school curriculum to let the students have ideas on the good future of subject especially Arabic Studies that not restricted on Muslims only.

Excursion should be encouraged to places relevant to the subject to enable teachers perform their duties well. There should be separation between Arabic and Islamic Studies on the time table.

The policy making body however should show interest in the teaching of Arabic Studies as a subject. They should make sure that anybody who wants to specialize on Arabic Studies must have solid background of Arabic language. There must be qualified inspectors to supervise the teaching of the subject in the secondary and primary schools as it is done in the tertiary institutions in Nigeria today under the National Commission for Colleges of Education (N.C.C.E.) and the National Universities Commission (N.U.C.) during their accreditation exercises.

Government

The Osun State Government, as well as many states in the country do not pay desired attention to the teaching of Arabic Studies. They are neither supplying textual materials for this subject nor recruiting adequate qualified teachers to teach the subject. The reason is that Arabic studies is not regarded as a compulsory subject at Senior Secondary School level in the formal school system owned mostly by the state Government. This made pupils of primary schools and their parents to lose interest in the subject right from the primary school level (Liman et-al, 2015).

It is observed that many state governments do not allow the Guidance and Counselling Teachers to function on their field of study. Rather, they send them back to class to teach. This is quite unfortunate. Students need to be guided on the choosing of subject in order to develop interest on the subject of their choice from grass root. Many students are misguided by unqualified counsellors in or outside the school environment.

In another way, mere seeing many colleagues opt to certain subjects in the school has confused many students and ran into subjects they would not cope with. As a result, they will run into problem in the near future. Therefore, governments at all levels should look into this phenomenon to enhance the study of Arabic and other subjects of students' choice so that their talent will be useful not only for them but also to the society at large.

What Liman et-al (2015) have rightly said on Islamic Studies are also applicable to Arabic Studies as well, that Arabic Studies can contribute immensely to the peace and progress of the nation and that it can serve as a tool for maintaining balance and settling disputes in the country. It can be used as a vehicle to produce youth with moral decorum that are ready to work selflessly towards the development of their country. It is therefore imperative for Governments at all levels in Nigeria to encourage the citizens to pursue Arabic Studies starting from primary level to all levels of education in general for social welfare and integration which can help and boost the development of the country.

Academicians and Writers

This study has shown that Arabic Studies pose a lot of problems to students due to its interrelationship with Arabic Language which is its backbone. In order to appreciate the beauty of Arabic Studies, one must have deep knowledge of Arabic Language. There is need for writers and Arabic scholars to improve in and produce more Arabic text books in a simple way to be understood by students. These books should be relevant to the current curriculum of Primary, Post Primary and Tertiary institutions. The books should always be related to the happenings around the students so as to keep them familiar with their immediate environments.

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Socio-Cultural Dimensions of Women Discrimination in Rural Communities of Yobe State, Nigeria

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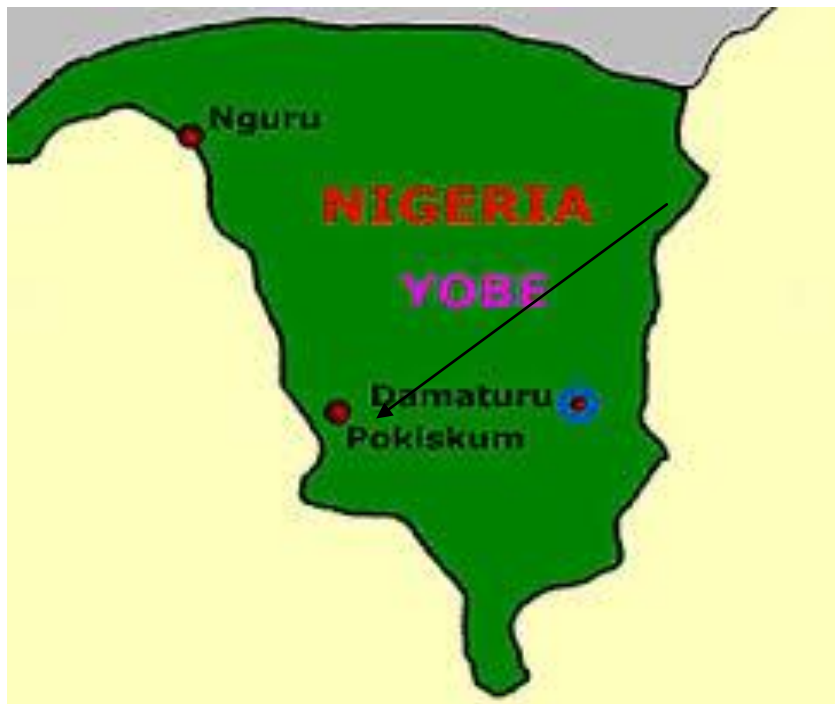
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Abstract

The paper provides a descriptive view on women discrimination in the rural Yobe State through ethnographic method. Specifically, the focus centred on women discrimination in family decisions within various homes in some selected communities in the state. The paper used an ethnography method in which the researcher featured as an insider whose personal experiences added to a deeper understanding of women's experiences. Data collection techniques involved participant observations and in-depth interviews with key informants. Some districts selected were Kaleri, and Arikimi both under Damaturu and Potiskum Local Government Areas respectively. The paper argued that societal glued to certain socio-cultural values have a strong negative influence on women discrimination in Yobe State. Finally, some recommendations were highlighted.

Introduction

The purpose of this paper is to explore how women are discriminated due to rigid socio-cultural values. The focused, centred on the lack of women's autonomy in decision-making within the family in Yobe State. Evidence from previous researchers SDGs (2015); NDHS (2014) suggests the extent of women's involvement in the family decision in Yobe State is very poorly studied. In particular, an attempt has been made to explore women's decision-making autonomy, about the specific issue as their ability to contribute to decisions regarding the education of the girl-child. However, there is still a long way to go in many towns and villages of Yobe State based on observations and accounts of interviews with the participants. This paper argued that women are considered to contribute to decision-making if they usually make decisions alone or jointly with their husbands. It is believed that the ability of women to make decisions that affect their children and other personal circumstances is an essential aspect of their empowerment (Schuler, Hashemi, Riley, & Akhter, 1996). So, women's involvement in the decision-making process is of great importance because they played an important role in every family activity and gives outstanding performance most of the time.



Map of Yobe State illustrating the study areas

Research procedures

The paper is based on a qualitative approach using ethnographic methods which specifically focused on few key informants. As has often been the case when embarking on an ethnographic method, fieldwork is an essential attribute and the primary sources of data collection techniques include participant observations, interviews, as well as some few available data. The researcher featured as an “insider” during the fieldwork as the main focal points include intensive study with particular focused on married women in two neighbourhoods of Kaleri and Arikime wards of Damaturu and Potiskum LGAs respectively. The researcher was tailored in a way to capture the socio-cultural realities of women discrimination based on personal experiences and the

informants' viewpoints. Even though it takes a time to build trust with the informants, but the researcher was influenced in a number of ways by the thought and language of the people in her own state, and made every effort to break out of the mould of contemporary thought of her people. So, the presence of the researcher in the field had helped in strengthening ties and good rapport (Wolcott, 1999). The content of the paper is supported by findings from the researcher's doctoral research conducted in Yobe State. The people of the selected neighbourhoods are more "religious" and culturally dominant, which were the reasons for selecting these places as the study areas. The adoption of qualitative approach has broadened the lens to include all the dimensions and challenges of women's discrimination in the face of numerous development constraints by observing and interviewing women in these areas.

The purposive sampling strategy was adopted and in order to explore the decision-making power of women, a total of Four (4) key informants were selected. In addition, snowball samples of two (2) male husbands featured as minor participants for data credibility, and confirmation through focus group discussions. Semi-structured, open-ended questions were designed and conducted which lasted for an hour time duration. Ethical issues of consents and confidentiality were addressed by obtaining the oral consent of all participants in their local language (Hausa) for clarity. The respect of cultural norms of the ethnic groups and religious beliefs as Muslims has been put into consideration during the fieldwork and interviews. Female research resistant was recruited which enabled the research team to have access to the married women hitch-free. This process allowed a free and more engaging conversation among the informants thereby removing any form of inconveniences. In addition, the strategy adopted provided a better understanding of the women's social realities, and their "natural" experiences (Merriam, 2014; Creswell, 2013; & Yin, 2009). In particular, the adoption of participant observations has lessened the power relations between the "observer" and the "observed". The fact that the researcher grew up in the same environment with the "case", it was so easier to catch a grasp of the problems during the fieldwork. The researcher's experience while at the field clearly demonstrates the feelings of the discrimination of women in the study area. This could be seen based on the seating arrangement between the researcher and the male informants in figure 1.2. Therefore, the socio-cultural dimensions of women's discrimination were explored and descriptively reported based on their assertions through in-depth interviews and participant observation (Merriam, 2014). Raw data of participant observations and interviews were recorded with the aid of a voice recorder and camera. The data were analysed using transcriptions, sorting, and repeated readings that identified major themes (Merriam, 2014; Creswell, 2013). The map of Yobe State was presented illustrating the locations of the study areas.



During a face to face interviews

Radical feminist Theory

The theoretical base for this paper briefly focused on contextualising the radical feminism as inspired by (Whittier, 2010). Radical feminist theory as outlined in Whittier's work shows the main concern was to fight “masculine domination” culture which constitutes women as symbolic objects whose being is perceived to have the effect of keeping them in a permanent state of bodily insecurity in several aspects of human endeavours. In other words, proponents' radical theory focused on men and patriarchy as the main causes of the domination and discrimination of women or more precisely of symbolic dependence. As specified, the radical feminist theory was inspired from approximately 1967-1975 in which they provided an important foundation for the rest of the feminist flavours as well as the bulwark of theoretical thought (Gunew, 2013; Whittier, 2010; & Mouffe, 1995). Proponents of feminism have defined the concept as a critique and recognition of male supremacy combined with efforts to change it. At the societal level, radical feminism focused its attention on power and patriarchy which expedites the justification of the discrimination and domination of women within the wider context of the society. As evidenced among other things, the family undoubtedly played the most central role in the reproduction of discrimination which fostered masculine domination. In this regard, some label by radical feminist theorists is that women's oppression is the most ultimate when talking about domination as it cuts across all boundaries (Hoskyns, 1996). To further buttress this assertion, some radical feminists emphasised that patriarchal dominance operates even within the religious, educational, social, political, and economic systems (Mouffe, 1995). In this regard, Ikenna (2009) contended that women discrimination started right in the house of God, where Saint Paul, directed Christian women to surrender to their husbands and should not speak while in the church. She grieved that even in religious matters, where people are meant to believe that God created everybody in His own likeness and image, but women are also discriminated against. As such, it goes without saying that gender discrimination was institutionalised in the house of God right from the early days of Christianity.

Therefore, radical feminist theorist branded patriarchy as an unfair social structure that is specifically domineering at the detriment of women. Most often, women have fallen victims of subjugation or harassment based on the dominant ideology of patriarchy. The patriarchal thought

often includes all the collective mechanisms that exert and reproduces male supremacy over women (Jaggar & Rothenberg, 1993). Besides, the contributions of women to the growth and development of the family unit as well as the society can never be quantifiable looking at their dual roles. Yet, their involvement both in family matters with regards to formal and informal education of their children remained insignificant.

Inequalities in Decision Making

Decision-making as Becker (2009) demonstrated is all about possible choices that enrich policies and social arrangements within the society. Decision-making in its broadest sense refers to the role of citizens in the civil and political rights and obligations that all members of the public should have, not just formally but as a reality of their lives (Parveen, 2007). Specifically, decision-making is an important segment of every family because the functioning of everyday resource management depends on the efficiency of decision-making progress. Therefore, decision-making is a fundamental process that incorporates all the functions of family resource management. This suggests that decision-making can be a complex process. Evidence from Nigeria Demographic and Health Surveys NDHS (2014) drawn from fifty-two (52) countries, notably Nigeria, Burkina Faso, and Mali, reveals some of the most direct sources of information on family decision-making dynamics in Sub-Saharan Africa. The overall, data uncovered how only in fifteen (15) of the fifty-two (52) countries did 50 percent of women contribute to all family decisions, including those taken with regards to their own health care, major everyday purchases, daily home spending and visits with family or relatives outside of the family. This revelation paints a picture of extreme gender inequality in decision-making.

In Nigeria, gender discrimination in the family is often rooted in the patriarchal structure which tends to circumscribe the attitudes that undervalue the social status of the womenfolk. In some states within the country, data from NDHS (2014) on women's involvement in three types of everyday decisions unravelled their active involvement in a decision regarding their own health care, making major family purchases, and visits to family or relatives. However, societal customs or traditions are not the only factors determining bargaining power within families. Specifically, within the most homogenous societies like Northern Nigeria, every family is unique, and there is no simple set of rules that can explain the dynamics of family decision-making. An outstanding proportion of men surveyed in the Northern Nigeria believed that wives should submit to their husband's authority on family decisions. Nonetheless, recent studies SDGs (2015); Ladan (2009) on family decisions and gender shed some light on the major determinants of influence. These include the level of education, control of income and assets, and age. Examining these factors across a wide range of communities visited during the data collection offers insights into the distribution of bargaining power in individual homes. In the study areas, an approximately eighty-five (85) percent of women interviewed felt excluded from such decisions. Consequently, when women who are most often the primary caregivers for children, found themselves excluded from family decision-making processes, it suggests a situation that might warrant their well-being as well as their children to be at risk.

Basic Determinants of Women Discrimination in Rural Communities in Nigeria/Yobe State

There is no doubt in a recent report by SDGs (2015) which has shown that the rigid adherences to some value elements have a strong influence on the issue of women discriminations. It is well established that women and their daughters in rural Yobe State have been the subject and

target of everyday discrimination within the family. Women's autonomy in decision-making is positively associated with the level of education (Kabeer, 2005). UAs such, unequal levels of education may reinforce discrimination and gender inequalities, ensuring that women remain disadvantaged (Subrahmanian, 2005). This suggests that lack of control over educational needs of the family to a much extent stalled the development and well-being of both women and their children. So, the argument here is the exclusion of women from such crucial decisions within the family is nothing but discrimination which can compromise the effective development, health and well-being of all family members, particularly children. Specifically, this may not be unconnected with the glaring gender equalities in education which are widely attributed to the socio-cultural values attached to the roles of two opposite sexes. Hence, the kind of such discriminations makes women the exploited and subordinate group in the family structure which engendered societal retrogression (Gill, 2003). Moreover, as Gunew (2013) puts it, the patriarchal family has been the model principle of the social order as interpreted based on the absolute pre-eminence of men over women. Therefore, the discrimination of women and their lack of decision-making power is the consequence of the existing patriarchal social system which determines the bargaining power relations of most family members through the 'family organisation'. On most occasions, women's inability to access and harness their potential leave them with no option but dependent on males (Ikenna, 2009). So, despite the accomplishments of discharging all the responsibilities of the family, no recognition is given to their immense contributions. Even where they "contribute", their contributions are undervalued. In matters of basic rights as the ability to contribute their quota in the decision-making process regarding the education of the children, for instance, they have been deprived those equal rights. Thus, men most often took decisions which are detrimental.

Growing up in the Rural Community

The researcher's experience while growing up in the study area, as well as the conduct of the doctoral research among rural women, have been extremely valuable in shaping the analysis of women's issues in Yobe State. Evidence from the experience of growing up in the study area has uncovered that the society is largely a male-dominated one even though women have made a remarkable impact in the lives of even the so-called male personalities. Although, the deep-rooted socio-cultural dimension of women's discrimination is not alien to the researcher, however, continues visitations in the rural areas, further unravelled constraints and the conditions of rural women's vulnerability to discrimination throughout their lives, from birth to childhood through to adolescence to adulthood. The researcher observed that women are neither considered relevant nor hold a key position in the family. In most rural communities of Yobe State, elements of discrimination begin at the time of birth. For example, the common phrase that accompanied the birth of a female in the Hausa parlance (local language commonly spoken by the majority of the people) is "ai ba ayi komai ba tunda mace ta haifi mace", meaning nothing is gained if a female gives birth to a female (Sada, Adamu, & Ahmad, 2006). This scenario indicates that the birth of a girl is heralded with little joy except in rare cases where the woman already has a boy before the arrival of the baby girl. On the other hand, giving birth to a son is like giving birth to a king and is believed to have strengthened the woman's strong hold in her matrimonial home. Most parents preferred, and still prefer, to have male children, probably to heighten their desire for future "support" and family "sustainability". Based on close observations, non-favourite wives and their daughters have often been discriminated and maltreated by their husbands or fathers. Sometimes a mother was even tormented and blamed by her husband or relatives if she dares delivered a

daughter forgetting the fact that a father should naturally be in charged whether the child is a boy or girl. In many communities, some of the fathers went further to punish those women by refusing to see the newborn baby if it were a girl. It has been observed in addition to revelations from some of the women that most often, male parents refused to buy the special kind of meat; the cow tail or leg (bull cut off from the knees) and part of the meat around the jaw called dabiri in Hausa, if a girl is born as they continuously purchased if it were a boy. Metaphorically, this indicates the unbreakable strength and superiority of the male son who is deemed to create joy and optimism for the family as opposed to the breakable and the docile inferiority of the women (Sultana, 2010; Zaman, 1999). Thus, the socio-cultural values have placed general disregard for such daughters. So, once they are married, they become psychologically and physically isolated as they are seldom seen in making significant contributions to their natal homes. The implication of such kinds of discriminations is that both the girls and women have been relegated to low social status where they are denied the extra power and wider horizon (Kabeer, 2005).

Besides, Yobe State is one with the highest ratio of preference for sons over daughters as a recent report from SDGs (2015) uncovered that less than 15% of girls have access to education because it is often considered irrelevant or unnecessary. From the researcher's close observation; even though the female offspring are discriminated but they still contribute significantly towards family sustainability, especially if one considers their role as street hawkers. It can then be argued that it is a case of expecting much to whom less is given. Thus, such socio-cultural value means that a woman must endeavour to sacrifice her identity by being a good wife and ideal mother.

Evidence of Discriminations from Women's Assertions

In order to explore how women are discriminated in decision-making, the researcher visited the field and uncovered those women. Women discrimination is simply one element in Yobe State through the social values that guide their conduct and most often defined their "place" (Schuler et al, .1996). It is generally believed that discrimination between men and women occurs within the home, but in a larger sense, it does not only end there. This is in line with women's experiences through depth interviews about the attitudes of men. As part of the study one of the informants explained:

"Due to the way men disregard us [referring to her in plural] they see us as unfit who could not even contribute meaningfully. In most cases even lesser decisions that affect the naming of the child, women are not involved. Most women know the name of the child they give birth to on the day of the naming ceremony just like all other invited guests to the ceremony" (Anonymous, aged 55. Face to face interviews, 15th May, 2015).

From closed observations, it seems women are seen to be the weaker sex and low in strength by tradition. Therefore, they have been regarded as unfit and could not even "contribute meaningfully". So, the status of women based on the socio-cultural values of the family and indeed the community as one of the male informants puts it is "next to nothing". His views:

"Obviously the woman is always considered to be weak and not all that very responsible; so it is good to say [Paused for a while!! Looking at the team of interviewers] she is not to be entrusted with the difficult task of making decisions in the family. As a result, women have never been recognised as fit enough to

contribute their quota in the decision-making process within the family structure. Almost all important decisions are taken by the men folks” (Anonymous aged 60. Focus group discussions, 14th, June, 2015).

Based on the above verbal explanations, cultural interpretation of the informant’s viewpoints means that rather than just being ‘partners in progress, women are still widely considered as “next to nothing” while men authoritatively head all major decisions whether good or bad and most often with greater opportunities, freedoms, and rights. Whereas, the capabilities of women have been traditionally ignored and undermined as the responsibility of forming decisions and policies have always been regarded the “job” of the male. So, women are given fewer opportunities in every regard. The implications of such stereotyped roles and family hierarchies for women and men are many, including educational impediment, diminished access of women to social, economic, political, and religious involvement, and poor health outcomes among others.



During a face to face interviews with one of the women

Discussions

History has shown that the word patriarchy was used to explain the origins of men's domination of women (Mouffe, 1995). Based on the available data as well as the primary data, the role of women in the family decision is insignificant and negligible in most families in the rural areas due to the illiteracy of women. This is in line with the standpoint of UNICEF (2006) and Subrahmanian (2005) in which they both reaffirmed that education is key in the fight against discrimination and some negative societal values that deny women a say in family decisions. In the areas visited, the contribution of women has not taken seriously because it is considered very disgraceful to accept their decision. In other words, their involvement in family decision-making process remained in a very low position, as all important decisions are made by the head of the family or the male members because the majority of the females have not been provided with

those opportunities to get education due to the policy of discrimination against them within the family unit. Evidence from NDHS (2014) data also revealed that men dominate decisions on major such as education, and marriages. This paper focused on the various forms of discriminations generally interrelated and reinforced by ideological, cultural, social, and 'religious' viewpoints between women and men in the Yobe society. It also, described some of the common adages that signified the discrimination of women right from birth to adulthood. Thus, it is important to stress that women's equalising the power relations at the most basic unit of the society will immensely benefit everyone, from the families through to the communities to the entire nation. So, societal attitudes about the inferiority of women not to contribute and the superiority of men at the family level are still very prevalent in most communities of the rural Yobe State. While a considerable number of nation states and families around the globe are replacing those notions of family hierarchies with notions of mutual understanding and cooperative partnerships. However, the situation in Yobe State is virtually negative as women in this society are being faced with different barriers, deep prejudice and discrimination. Most men argued why they prefer a male child is in the family's name and legacy to be sustained. This explains why some men engage in polygamy once the first wife cannot bear a male child and this has also prompted this craze among women to get a male child at all cost for their husbands. Similarly, even the best food is always reserved and offered to the male child. Therefore, as Alam (2011) puts it, nutritional deprivation is one such example of everyday forms of discrimination against women. This shows that right from the inception; a daughter is considered a liability and a burden to the family. Thus, from childhood, a girl becomes fully aware of the fact that her brother is an important asset to the family and she is treated as a non-permanent family member in her natal home (Sultana, 2010; Begum, 1998).

In the course of the fieldwork, the researcher uncovered that women's discrimination is aggravated as they are believed to be liabilities. It has been observed that the birth of a daughter receives a half-hearted reception. While the birth of a male child is very much welcomed by the family and indeed the community members as he is expected to support the family for "sustainability" (Mahdi, 2010). This disadvantage position might be due in part to orthodox social values and norms that girls' as their mothers would move to their matrimonial homes upon marriage (Alhassan, 2015). In contemporary Yobe State, many have come to believe that once a woman has not put to bed a baby boy she is yet to make an impact in the family. This has been the plight of many women who are yet to have male children for their husbands as they are seen to be of no use for the family. In desperation to have a male child, many women have borne the supreme price. This stance further unravelled the rigid socio-cultural value which tends to delineate the role of a woman is nothing other than a wife and mother. Therefore, such views have, to a large extent reduced men and husband's incentives towards investing in the human capital of women, which worsens women discrimination (Schuler et al., 1996). Hence, in extremely poor families where abject poverty persists, it is the women and their daughters who would likely receive minimal or no education, spend the day with an inadequate meal, receive minimal health care, and even dastardly live without warm clothing during the winter in addition to boomerang household shores. While the men and any other significant male member would among others eat outside at the major intersections or joints. Thus, from the side of their children, a boy is usually educated due to a tenacious belief of maintaining the "family name". Therefore, the women are not only discriminated in family decisions, but have also found themselves in subordinate positions within

the wider society in the name of “accommodating values and norms”. This is unlike women who are often assumed to take on domestic's duties and at the end settled “elsewhere”. The cultural implications of this value element mean that most families viewed women as dependent, submissive, demure, and obedient wives as well as take the role of bearing and catering for children and husbands. So, these responsibilities not only engendered discrimination, but also preclude them from other developmental opportunities. It could be suggested that women discrimination exists within the family unit because of the nature and influence of rigid socio-cultural values that entrenched male supremacy in the larger Yobean context. Therefore, the male's unwillingness to give up this dominant role had thus reinforced the women continuously suffer prejudices (Gill, 2003).

Conclusion

The paper contributes to the current debate and discussions of how rigid socio-cultural values influence discrimination against women. The researcher was particularly concerned with exploring the influence of socio-cultural values on everyday forms of women's discrimination. Contextual discussions focused on direct quotes provided by the informants as well as the use of existing literature (SDGs, 2015; NDHS, 2014; Merriam, 2014; Gunew, 2013; Whittier, 2010; Sultana, 2010; Ikenna, 2009; Mouffe, 1995). The paper explored and unveiled the issue of everyday forms of discrimination against women from a socio-cultural perspective. After depth-interviews and personal observation, it was found that the factors that led many forms of discriminations against women has to do with stringent socio-cultural values. In the rural society, there has been a considerable flux regarding the decision-making power of women. So, women's suggestions on important family matters often do not get much attention.

In particular, the absence of educational values is one major impediment leading women discrimination issue which at the end affects their children especially female daughters (SDGs, 2015). From the beginning, the rigid socio-cultural value that the role of a woman is nothing other than a wife and mother has to a large extent reduced parental incentives towards investing in the human capital of their daughters. Women are not only discriminated in family decisions, but have also found themselves in subordinate positions within the wider society in the name of “accommodated values and norms”. So, unequal levels of education may reinforce gender inequalities. In addition, their ability to contribute to decision-making is linked to their level of income, their age, employment, and a number of living children. In most cases, women from rural areas lacked all of the above and thus, have less autonomy in family decision-making (Hobcraft, 1993).

It is believed that the only way to address such issue is for them to be enlightened about their rights through education. Education gives the humans an orientation about their rights and the guidance to live in a prosperous way. Based on the experience in the field, it could thus be argued that higher educated women tended to be more liberal who often tended to reduce the socio-cultural burdens through their assertiveness compared to illiterates or lower educated women. At the same time, women's increased education is positively associated with autonomy in own health care decision-making (Parveen, 2007). Therefore, the researcher further interprets that how members of the family decide to use their collective resources often determines the levels of education and other protection that each family member receives. Thus, the well-educated women

believe in giving equal opportunity to their children in every aspect. Overall, this article concludes that socio-cultural influence is a major source for women's discriminations in the rural Yobe State.

Recommendations

It is recommended that women from rural area need a specific empowerment programme through adult education classes to enable them become more autonomous in the family decision-making. A more comprehensive strategy can enable women to access family decision and to challenge stringent socio-cultural values, traditional norms and to access their economic resources, and to help contribute their quota towards their children's education. The other important role of the education is an acceleration in social development and then ending at a significant inclusion in the family decision-making process. This will lead them to be more autonomous in decision-making in the due course.

Therefore, the article suggests that women need to have access to education right from the initial stage. In addition, it is recommended that acquisition of higher education would enable women to have a re-think over societal values and modify their individual attitudes. It is hoped that the findings of this paper will make policymakers know that achieving inclusive growth on women's decision-making power will require a new development framework which should include a focus to develop an explicit master plan on an adult education programme that is gender sensitive which would take into account both gender dimensions and perspective for policy making and effective implementation.

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Bioremediation: An effective Way of Environmental Sustainability

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Abstract

The quality of life depends greatly on the sustainability of quality environment. With the ever-growing awareness of the pollution causing from all aspects of manufacturing processes, use of petroleum, recalcitrant pesticides, and disposal of municipal and animal wastes etc., there is an increase in political pressure to mitigate the problem all over the world including Malaysia. The effects of environmental pollution and the methods of bioremediation of the contaminants have been studied from the available literature on the subject. Different aspects of environmental contamination with different organic compounds and toxic heavy metals and their general sources have been pointed out. Bioremediation as a means of environmental sustainability along with its mechanism, prospective pollution fighting organisms, and techniques and strategies has been explained. The bioremediation activity in Malaysia is still in infancy stage. The area of priority research with an emphasis on Malaysia have been identified as – detailed survey on the contaminated sites and their sources all over the country, development of bio-techniques for detection of environmental toxicity; search for new microorganism which can detoxify and destroy different contaminants easily; development of novel biocatalyst which can function under extreme conditions of acidity, salinity, temperature and pressure; creation of genetically engineered microorganisms which can degrade the difficult-to-control pollutants; development of low-cost and most effective in-situ and ex-situ bioremediation technologies, and the use of multiple processes i.e. use of plants and microorganism together, and other methods such as land farming, nutrient supplements etc. Multidisciplinary approach in cooperation and coordination with engineering, microbiology, ecology, geology and chemistry should be followed for successful bioremediation and thereby to sustain the environment of the globe.

Keywords: Mechanism of bioremediation, Recalcitrant, Techniques of bioremediation, Microbes for bioremediation

Introduction

The quality of living is largely regulated by the quality of the environment, where all living beings stay. Therefore, sustainability of the environment is of prime importance for healthy living. However, this environment is being impaired due to industrial manufacturing activities, petroleum and oil spills, leakage of underground sewage tanks, improper disposal of wastes etc. Through all these processes a number of toxic compounds (metals, organics, radionuclides etc.) are added to the environment. In USA, more than 32000 sites have been identified as potential contaminated sites (Baker & Henson, 1994). Gasoline spills including MTBE (methyl tertiary butyl ether), TBA (tertiary butyl alcohol) etc. are common causing water contamination with hydrocarbons (benzene, toluene, xylene etc.), dissolved in ground water and travel offsite in the aquifer. Arsenic occurs naturally and get concentrated to dangerous levels by mining, industrial water and ground water wells. Presence of small amount of this metal can cause cancer and damage of nervous system. Contamination from ground water is severe particularly in Bangladesh and the state West Bengal of India, where millions of peoples suffer from arsenic poisoning (Powell, 2002). Countries that use leaded gasoline find toxic level of lead in agricultural areas, which make it difficult to raise animals and crops. Military munitions are also major sources of ground water and soil contamination with heavy metals, which wind or rain can sometimes disperse to great distance from their point of use or disposal. Jabar (1993) stated that in USA, ground water is being contamination by leaking underground storage tanks, fertilizers and pesticides, uncontrolled hazardous waste sites, septic tanks, drainage wells and others sources threatening 50% of USA drinking water supplies for half of this nation's populations. In Malaysia, different industries produce wastes more than 59.39 ton/day with an increase rate of 4% per year. Moreover, the toxic and hazardous waste production recorded in 1996 amounted to 632,521.31 metric ton annually (DOE, 1996). The most toxic and hazardous wastes in Malaysia are coming from chemical and related industries, which produce plastic, detergents, fertilizers, pesticides, cosmetics and medicine (Mokhtar et al. 2002). The existing capacity of 161 landfills in the country is not enough to handle the increasing volume of waste annually (Mohamed et al. 2002). Norulaini et al. (2003) pointed out that more than 350 Palm Oil Mills in Malaysia are also releasing a huge amount of wastes (fibrous debris, palm shell, palm oil mill effluent etc.) to the environment. The waste may contain toxic chemicals, which may threat human life and other useful fauna and flora in the environment. The incinerator used to burn the empty fruit bunches produce dark and white smokes, which is polluting the air environment. Sanitation and sewerage have been a real problem for the country. Only 17% of more than 5409 treatment plants are run by IWK (Indah Water Consortium Plant). Moreover, the wastes are being discharged directly to the rivers and thereby impairing the water quality affected the growth of aquatic fauna (Weng, 2002). Although in Malaysia, complete surveys for identification of polluted sites have not been done yet, it is a matter of fact that with the increase of industrialization in the country the environmental pollutions are also increasing day by day. With the ever-growing awareness of the pollution emanating from all aspects of our use of petroleum, recalcitrant pesticides and disposal of animal wastes, there is an increase in political pressure to ameliorate the problem. To sustain the environment it is therefore, necessary to remediate the contaminated sites with appropriate technology. Bioremediation is a unique way to solve the environmental problem.

Importance of Bioremediation

At the early years different conventional methods were used to remediate the contamination. The conventional approach to solve the land contamination was to excavate the land and remove it to the landfill, which is simply transfer of contamination from one site to other. Moreover, this method is expensive and risky, especially during handling and transport of the hazardous materials. The high temperature incineration is a method of remediation in which risk of exposure to contaminants for the workers at the sites may increase. New improved technologies, which can detoxify and destroy the contaminants, are therefore, necessary in order to sustain the environment.

In nature, there is no waste because everything gets recycled. The waste products of one organism become the food for others, providing nutrients and energy while breaking down the waste organic matters. Some organic materials break down more faster than others but all eventually decay. This phenomenon can be used to destroy contaminants from the environment. Bioremediation, the use of microorganism or microbial process to detoxify and degrade contaminants, is the appropriate technology, which cleans up the contaminated environment more easily and rapidly (Vidali, 2001). The use of this bioremediation technology is now gaining popularity. The last ten years have been an increase especially in USA and UK, in the bioremediation of solvents, polychlorinated aromatic hydrocarbons (PAHs) and polychlorinated biphenyls (PCBs). Recent approaches are also going towards cleaning up of radioactive contaminants (cesium, plutonium, strontium, uranium etc) and metallic contaminants (lead, mercury, iron, zinc, arsenic etc.), the most recalcitrant components of hazardous wastes (Source: <http://www.er.doe.gov/>; http://www.esd.ibl.gov/CEB/Best/ann_rpt99/inter_9story.html). Table 1 shows the types of contaminants liable to bioremediation. Therefore, bioremediation is a safe, effective and economic way adjunct to other clean-up procedures.

Mechanism of Bioremediation

Microorganisms, like humans eat and digest organic substance for nutrients and energy. Organic compounds contain carbon and hydrogen atoms, which are consumed by the microorganisms. Some microbes can digest organic substances such fuel or solvents that are hazardous to human. Bioremediation works by either transforming or degrading contaminants to non-hazardous or less hazardous chemicals. Biotransformation is the process where alternation of the molecular or atomic structure of the compounds takes place by microorganisms through various metabolic reactions. Biodegradation is the breaking down of organic substances by microorganism into smaller organics or inorganic components thus making them non-toxic or less toxic. In some cases the solubility of the altered species increases thus causing mobility of the contaminants and allowing it to more easily be flushed from the environment. The contaminants are also immobilized in the place thus reducing the risk to human and the environment. The microorganisms break down the organic contaminants into harmless products, mainly CO₂ or H₂O (Source: <http://www.ela-iet.com>). Some bacteria thrive on the chemical components of the waste products. After the bacteria consume the waste materials, they die off or return to their normal population levels in the environment. The byproducts of the pollution-fighting microorganisms are themselves useful. Methane, for example, can be derived from a form of bacteria that degrade sulfur liquor, and waste products of paper manufacturing industry (Baker & Herson, 1994).

Table 1. Examples of contaminants liable to bioremediation

Types of contaminants	Examples	Technology needed
Polyaromatic hydrocarbons (PAHs)	Naphthalene Pyrene Creosote Fluorene	Aerobic Engineered microorganism with addition of nutrients
Aromatic hydrocarbons (BTEX)	Benzene Ethyl benzene Toluene Xylene	Aerobic and anaerobic Engineered bioremediation and vacuum extraction, Methanogenic
Aliphatic hydrocarbons	Trichloroethane (TCA) Dichloromethane (DCM)	Aerobic Denitrifying enrichment, sulphate reducing enrichment, Methanogenic
Polychlorinated biphenyls (PCBs)	4-Chloro biphenyl 4,4-Dichloro biphenyl	Anaerobic
Chlorinated solvents	Trichloroethylene (TCE) Perchloroethylene (PCE)	Anaerobic Engineered bioremediation and vacuum extraction, Methanogenic
Petroleum hydrocarbons	Fuel oils	Aerobic Addition of nitrates, using engineered bioremediation
Pesticides	Atrazine Diazinon Glyphosate 2,4 – D Parathion	Aerobic and anaerobic
Heavy metals	Mercury Aluminium Iron Lead Arsenic	Aerobic
Radionuclides	Uranium Chromium Technetium Cadmium	Aerobic and anaerobic

(Adapted from Baker and Herson, 1994; Pavlostathis, 1998; Vidali, 2001)

Some more advanced systems using genetically modified microorganisms are being tested in waste treatments and pollution control to remove difficult-to-degrade materials. Using molecular biology techniques, it is possible to splice pieces of DNA containing genes for specific degradative pathways into plasmids. These plasmids can then be introduced into a host organism, resulting in a recombinant or genetically engineered microorganism with new degradative capabilities (Brand et al. 1992). These organisms are used in bioremediation of contaminated sites

either as organism for bioaugmentation or in bioreactors (Phillips et al. 1989). The scientists of the University of Georgia, Athens, USA created a plant by inserting two bacterial genes into a thalecress, *Arabidopsis thaliana*, which can suck up the toxins of arsenic. The gene from the bacteria, *Escherichia coli* make enzymes that digest arsenic compounds, which was finally stored in the leaves of the plant (Dhanker et al. 2002; Powell, 2002). When the plant was grown on arsenic contaminated soil, it accumulated 4 to 17 times more fresh weights of shoot and accumulated 2 to 3 times more arsenic per gram of tissue than non-engineered plants (Powell, 2002).

The remarkable ability of microbes to break down chemicals is proving useful not only in pollution remediation but also in pollution detection. The scientists of Los Alamos National Laboratory, USA worked with bacteria that degraded the phenolic compounds, a class of organic chemicals in the soil contamination. When the bacteria ingested phenolic compound, the phenols attached to a receptor. The phenol-receptor-complex then bound to DNA, activating the genes involved in degrading phenols. They added a reporter gene, that when triggered by a phenol-receptor-complex produced an easily detectable protein, thus indicating the presence of phenolic compounds in the environment. The methods have also been developed for detecting a number of harmful organic pollutants in the soil using monoclonal antibodies and the polymerase chain reaction. Antibody-based biosensors have been produced in USA, which can detect explosive at old munition sites. This method is portable, cheaper and faster than the conventional laboratory methods, which require large and expensive instruments. Instead of collecting samples and sending to a laboratory for analysis scientist can measure the level of contamination on site and know the results immediately (Source: <http://www.nal.usda.gov/bic/bioremed/bioremed.html>).

Microorganism can physically remove heavy metals and radionuclides from solutions through either bioaccumulation or biosorption. Bioaccumulation is the retention and concentration of a pollutant by an organism. In this process, the metals are transformed from the outside of the microbial cells, through the cellular membrane and into the cell cytoplasm, where the metals are sequestered and therefore immobile. In biosorption, the positively charged metal ions are sequestered primarily through the adsorption of metals to the negative ionic groups on cell surface. The polysaccharide coating found on most forms of bacteria or extra-cellular structures such as capsules or slime layers. Binding sites on microbial cell surface usually are carboxyl residues, phosphate residues, S-H groups or hydroxyl groups

(Source: <http://www.deh.au/ssd/uranium-mining/research/protect/bioaccumulation.html>)

Metal reducing microorganisms such as *Shewanella putrefaciens*, can reduce a wide variety of multi valent metals that pose severe environmental problems. The heavy metals and radionuclides such as uranium (U), chromium (Cr), technetium (Tc), are subjected to enzymatic reduction by microbes, where the oxidized forms of these contaminants are used as alternate electron acceptors. The oxidized form of these metals are highly soluble in aqueous media and are the mobile species in aerobic ground water, while the reduce species are highly insoluble and precipitate from the solution. A number of Cr (VI) reducing microbial strains (e.g. *Oscillatoria sp.*, *Agrobacter sp.*, *Pseudomonas aeruginosa* S128, *Clamydomonas sp.* (algae), *Chlorella vulgaris* (algae) etc.) have recently been isolated from chromate-contaminated water, soils and sediments. (Source: <http://www.er.doe.gov/production/ober/restopic.html>)

Prospective microorganism for bioremediation

A number of microorganisms (bacteria, fungi, algae, yeast etc.) have been isolated and identified as effective pollution fighting organisms. The bacteria *Geobacter sulfurreducens* and *Shewanella oneidensis* have the potential metal and radionuclide reducing capabilities in bioremediation. The micros can reduce a variety of electron acceptors including fumarate, iron (III), manganese (IV), uranium (VI), cobalts (III) and technetium (VIII) (Source: <http://www.ProteomeWeb.anl.gov>). Genome analysis of this bacterium *S. oneidensis* revealed 39 c-type cytochromes and a novel periplasmic [Fe] hydrogenase, which are integral members of the electron transport system and carries out the job of metal reduction at pollutant contaminated sites (Heidelberg et al. 2002).

The fungus, *Chlamydosporium sp.* has high metal uptake capability. In presence of heavy metals the production of melanin is accelerated in the fungus and the melanized cell form fungus is capable of uptaking heavy metals being located in the cell wall (Mowll and Gadd, 1984). Melanin from *Aureobasium pullulans* can bind significant amount of metals like Cu^{2+} and Fe^{3+} (Senesi et al. 1987) as well as organometallic compounds e.g. tributyltin chloride (Gadd et al. 1990). Pethkar et al. (2001) observed that a non-pathogenic fungal culture of *Cladosporium cladosporoides*, a biosorbent, isolated from soil removed lead (Pb) and cadmium (Cd) from aqueous extract of the medicinal plants *Nordostachys jatamansi* and *Vitis vinifera* with high efficiency.

Zosim et al. (1983) studied the application of emulsifying agent, emulsan extracted from bacteria such as *Arthrobacter*, *Pseudomonas* and *Acinetobacter spp.*, in the uptake of uranium from contaminated water. When emulsan was sonicated and dispersed in water/hexadecane 'emulsanosol' was produced, which bound more than 800 mg uranium per gram of water. The bacteria *Escherichia coli* can make enzymes, which digest arsenic compounds. By inserting two bacterial genes into thale cress *Arabidopsis thaliana*, a genetically engineered plant was created by the researchers of the University of Georgia, USA that sucked up the toxins and stored in the leaves and stems of the plants (Powell, 2002).

Lee et al. (2003) and Li et al. (1996) observed that certain yeast such as *Saccharomyces cerevisiae*, possess the 'yeast cadmium factor 1' (YCF1) protein, which can pump cadmium (Cd (II)) into vacuoles. She confirmed that YCF1 gene expression permitted *S. cerevisiae* to withstand the toxic effects of 3 mM lead (Pb (II)) and 0.1 mM cadmium (Cd (II)) concentration in growth media. In activated sludge, the bacterium *Zoogloea ramigera* can play an important role in metal binding. This bacterium extensively produces exopolysaccharide, which helps in flocculation process. Norberg and Rydin (1984) observed that the pre-grown *Z. ramigera* removed approximately 3 mmol (g dry wt.)⁻¹ copper at a concentration of < 1 g dry wt⁻¹.

Hyashi et al. (1988) observed that *Schizosaccharomyces pombe* can make at least seven different homologous γ -glutamyl peptides in response to metals exposure. A variety of metals including Cd, Cu, Pb, Zn and Ag are effective. The γ -glutamyl peptides are involved in metal detoxification in algae and plants. Reese et al. (1988) marked that on exposure to Cu^{+2} , a Cu^{+2} - γ -glutamyl peptide complex was produced in *S. pombe* with the metal bound as Cu (I). The chromate (CrO_4^{2-})-reducing bacterium, *Enterobacter cloacae* is resistant to high levels of chromium (10 mM) and can anaerobically reduce CrO_4^{2-} to Cr (III), which is precipitated (Fujii et al. 1990).

Beside these, a number of microorganisms have been isolated which can degrade different pollutants, either aerobically or anaerobically. The “white-rot-fungi” are known to have extensive biodegradative capabilities which is accomplished with the production of enzymes involved in lignin bioremediation. The fungus, *Phanerochaete chrysosporium* produce the enzyme, ligni peroxidase or ligninase, which is capable of degradation of many of the polycyclic aromatic hydrocarbons (PAHs) found in anthracene oil, a coal tar derivative (Bumpus, 1989).

Nelson et al. (1988) isolated a strain of *Pseudomonas* (G-4), which can degrade trichloroethylene (TCE) in presence of aromatic compounds such as phenol. Vannelli et al. (1990) isolated an ammoniated oxidizing bacterium, *Nitrosomonas europaea*, which can degrade chlorinated aliphatic compounds, e.g. Vinyl chloride. Trichloroethane was also found to be reductively dehalogenated by a *Clostridium* species to dichloroethane (Galli & McCarty, 1989). Sander et al. (1991) isolated a *Pseudomonas* sp. strain PS14, which degraded monochlorobenzenes, all three isomers of dichlorobenzenes, trichlorobenzene and tetrachlorobenzene. Pentachlorophenol, a paddy field herbicide, was found to be degraded by aerobic bacterium, *Rhodococcus chlorophenicus* (Hagglom et al. 1989). Zeyer & Kocher (1988) purified an oxygenase from *Pseudomonas putida* B2, which converted *ortho*-nitrophenol to catechol and nitrite. The catechol was then degraded either by *ortho*- or *meta*-cleavage.

Trinadade et al. (2002) (http://www.ipec.utulsa.edu/lpec/Conf2002/trindade_soriano_21) studied the efficiency of oil degrading microorganisms, M4- *Nocardia nova*, M29- *Nocardia nova*, M31- *Pandoraea var. dairenesis* and M36- *Rhodotorula glutinus*, and the effect of nutrients ratio and inoculum size in Brazil. They observed that the best biodegradation efficiency (7.39%) was due to use of M4 and M36 strains in an inoculum size of 10^{-8} CFU/g of soil with the soil C:N:P of 100:1.25:1, which was 99.7% higher than the control i.e. without inoculums and nutrient adjustment.

Therefore, a big number of microorganisms are available for using in bioremediation. However, a particular organism suitable for one country may not be suitable for others. Re-isolation and re-characterization for the organism are, therefore, necessary in a new environment. It is to be borne in mind that the better performance of micro-organisms is the function of a number of environmental factors such as, temperature, pH, organic and inorganic nutrients, electron acceptors, redox potential, water potential, osmotic pressure, type and concentration of the contaminants (Pavlostathis, 1998).

Techniques and Strategies of Bioremediation

Bioremediation technologies can broadly be classified as i) *Ex-situ* and ii) *In-situ*. *Ex-situ* means in a position or location other than the natural or original one. It usually refers to aboveground bioremediation. *Ex-situ* technologies are those treatment techniques in which physical removal of the contaminated material either by excavation (soil) or pumping out (water) to another area for treatment is required. Landfarming, composting, bioreactors, biopiles etc. are the examples of *ex-situ* treatment techniques (Table 2).

In-situ, on the other hand, refers to belowground method applied at the site of contamination. This method offers a way of treating contaminants that are widely dispersed in the environment, present in dilute concentrations or otherwise inaccessible. *In-situ* bioremediation is cost-effective, less disturbed in the area and non-risky method, since no exposure to the

contaminant during treatment takes place. Bioventing, biosparging, airstripping etc. are the examples of *in-situ* bioremediation (Table 3).

Two basic ways may be followed for a successful bioremediation strategy. One way is to encourage the native microbial flora to degrade the pollutants more rapidly and is known as biostimulation. Biostimulation is done by addition of nutrients, oxygen or other electron donors and acceptors to increase the number or activity of the organism. The components can be added either in liquid (soil washing) or gas (Soil venting) form.

Table 2. *Ex-situ* bioremediation technologies with their definition and application

Technology	Definition and application
Landfarming	Excavation of contaminated soil and spread over a prepared bed, with periodical tilling May be done in constructed soil treatment cell Low monitoring and maintenance cost Limited to 10-35 cm soil depth
Composting	Aerobic, thermophilic treatment process, where contaminated soil are combined with non-hazardous organic amendants such as manure or agricultural waste Can be done in static piles, aerated plies or continuously fed reactors Organic wastes are converted to valuable resource i.e. humas
Biopiles	Combination of landfarming and composting Engineered cells are constructed as aerated and composted piles Provides more favourable environment for aerobic or anaerobic microorganisms
Bioreactors	Biodegradation in an engineered containment system, where the environment is more controllable and predictable Solid waste, soil, liquid or slurry contaminants can be treated Rate and extent of biodegradation are greater

(Adapted from Baker and Herson, 1994; Pavlostathis, 1998; Vidali, 2001)

Table 3. *In-situ* bioremediation technologies with their definition and application

Technology	Definition and application
Bioventing	Addition of air or oxygen through direct air injection to the contaminated soil Low-flow ventilation and gas exchange favour biological activity Volatile compounds move slowly through biologically active soil where the vapours are biodegraded
Biosparging	Injection of compressed air at controlled pressures and volumes into water saturated soil, sediment or water to increase the oxygen supply to the naturally occurring microorganisms Low airflow (0.5-3 cfm/injection) Soil should have sufficient permeability, is more effective in sandy or gravelly soils Low-cost technique

Biofilter	Passing air through compost or soil containing microorganisms capable of degrading the gases Used to remove volatile organic compounds from air
Air stripping	Combination of air sparging, horizontal wells and soil vapour extraction. Uses horizontal wells to inject air into ground water Volatile compounds rise through soil sediments and then extracted by soil-vapour extraction

(Adapted from Baker and Herson, 1994; Pavlostathis, 1998; Vidali, 2001)

Jones & Greenfield (1991) tested the addition of nutrients and bacteria to soil contaminated by a number of fuel oil in Florida, USA. They found that addition of nutrients (ammonia and phosphate) markedly stimulated bioremediation, but no additional benefit from addition of bacterial culture was observed. Another way is to add effective microorganism where there is not an effective indigenous flora and is called bioaugmentation. Bioaugmentation is usually not very effective in subsurface environment. However, bioremediation can be enhanced by the continuous addition of microorganism to the bioreactors for the aboveground treatments of contaminated water. Organisms produced in on-site bioreactors may also be added to *ex-situ* treatments such as engineered soil piles or may be injected into the subsurface for *in-situ* treatment. *Ex-situ* bioremediation is a common technology for treating municipal wastewater, contaminated soil and sediments (<http://www.nal.usda.gov/bic/Bioem/bioem.htm>; <http://www.ie.cornell.edu/biodeg/>).

Bioremediation can also be grouped on the basis of kind of microorganism used in the process as – I) Intrinsic bioremediation and II) Engineered bioremediation. In case of intrinsic bioremediation, the biodegradative capacity of the indigenous microbial community, without any engineering steps to enhance the process, is used. It is also known as Natural attenuation. It is feasible when the naturally occurring contaminants bioremediation rate is faster than the rate of contaminant migration. Therefore, thorough documentation and monitoring are necessary to measure the plume size and metabolic activity. To have better results in intrinsic bioremediation in ground water treatment, consistent ground water flow, presence of minerals to buffer pH, high concentration of electron acceptors and presence of inorganic nutrients are necessary (Pavlostathis, 1998). This technique is mainly accepted for petroleum hydrocarbons such as TCE. However, promising results have also been obtained in bioremediation of selenium polluted agricultural drainage water in marshland in U.K. In engineered bioremediation, enhancement or acceleration of microbial activity is done by using engineered procedure to isolate and control the contaminated sites. It can be combined with other remedial technologies e.g. air sparging (in saturated zone), soil vapour extraction, bioventing (in vadose zone). To have the better results the subsurface medium should be uniform, the hydraulic conductivity of water should be $> 10^{-4}$ cm/s and the air permeability should be $> 10^{-9}$ cm² (Pavlostathis, 1998).

Different authors have suggested some altered technologies to have better biodegradative effects. Codisposal of industrial wastes and ground water in well-prepared sanitary landfills may be followed for treating hazardous wastes requiring disposal. The landfills can act as multimillion cubic meter anaerobic bioreactors, where the microbial activity can easily be persisted in a wide range of temperature (Watson-Craik, 1990). Coupling aerobic and anaerobic processes to degrade mixed wastes or recalcitrant compounds offers considerable potential. This technique may be used for waste water treatment (Zitomer & Speece, 1993) and/or for subsurface clean up (Anid et al.

1991). In this approach, the halogenated compounds such as PCBs, PCE, PCP etc. are subjected to an anaerobic environment to promote dechlorination, followed by aerobic environment, where the degradation of less chlorinated products takes place.

Norulaini et al. (2003) studied the bioremediation of mixed industrial wastewater in Malaysia using a combination of biological treatment with granular activated carbon (GAC) under two levels of dissolved oxygen, in bench scale activated sludge (BSAS) suspended growth and BSAS suspended-fixed system i.e. where GAC was added. They found that the removal of biochemical oxygen demand (BOD), chemical oxygen demand (COD), suspended solid (SS), nitrate (NO_3^-) and nitrate nitrogen (NO_3N) from the wastewater was greater under BSAS suspended-fixed growth system. With higher level of dissolved oxygen, the removal of all the parameters tested was higher except for BOD.

Combination of different techniques can also be practiced to get enhancement in bioremediation, which expand the matrix (soil, water and air) capability of the main technology (Table 4).

Conclusions and Recommendations

The bioremediation activity in Malaysia is still in infancy stage. Detailed study on treatment of pollutants has not been sufficiently done yet. Although some institutions and organizations of Malaysia (e.g. Universiti Putra Malaysia, Universiti Kebangsaan Malaysia, Universiti Sains Malaysia, Universiti Malaya, Universiti Teknologi Malaysia, International Islamic University Malaysia and UNIMAS) have started their research in managing the hazardous and toxic substances, their initiatives are still in preliminary investigation stages. There is need to research and develop a sound chemical management system to ensure good controls on the pollutants.

Table 4. Combination of technologies and techniques for enhanced bioremediation of soil and ground water contaminated with gasoline

Technology	Techniques for enhancement	Vadose or Unsaturated zone	Ground water or Saturated zone
A. In-situ bioremediation			
	Aeration, biosparging	X	X
	Dissolved oxygen injection	--	X
	Oxygen diffusion	--	X
	Oxygen Release Compounds	--	X
	Denitrifying	--	X
	Nutrient gas injection	X	X
	Monitored natural attenuation	X	X
	Enhanced natural attenuation	X	X
B. Surface ventilation			
	Soil vapour extraction (SVE)	X	--
	Bioventing	X	--
	SVE with thermal enhancement	--	X
	Air sparging (AS)	X	X

	SVE and AS/air injection	X	X
	In-situ Air Stripping	X	X
	Biosparging	X	X
C. Pump and Treatment			
	Pump and treat	--	X
	Pulse pumping	--	X
	Reverse flow pumping	--	X
	In-situ flushing, surfactants	X	X
	Single phase cvacuum extraction	X	--
	Multiphase vacuum extraction (MPE)	X	X
	MPE thermal enhancement	--	X

X = useful, -- = not useful

Notes: Pump and Treatment operates by pumping ground water containing dissolved or non-aqueous phase liquid (NAPL) hydrocarbons etc. to the surface. This technique is influenced by the solubility and adsorption/partition coefficient of the contaminants, characteristics of site geology and hydrology, and extraction system design.

Subsurface Ventilation is done through different techniques e.g. Bioventing, biosparging etc. as described in In-situ bioremediation.

Single-phase Vacuum Extraction (SPVE) and Multiple-phase Vacuum Extraction (MPVE) increase the captured zone and reduce the number of recovery wells, and accelerate the recovery of both liquid and residual contaminants.

(Adapted from website at <http://www.ela-iet.com/>)

Hazardous substances management must shift from burying and burning to well plan biologically degradation along with other processes. To solve the over increasing problem of environmental pollution the following steps to be followed -

1. Careful investigation and survey should be carried out throughout the country to identify and characterize the environmental contaminations.
2. Effective biotechniques for detection and identification of environmental toxicity, especially for soil and water, to be developed.
3. Since fewer than 1% microorganisms in the nature have been cultured and characterized, continuous search for appropriate microorganism against different pollutants to be carried out.
4. The novel catalysts, which can function optimally in relatively extreme levels of acidity, salinity, temperature and pressure to be searched out.
5. Genetically engineered microorganisms to be created so that the pollutants can be degraded rapidly and/or the difficult-to-degrade pollutants can be degraded.

6. The selected organisms should be produced in cell cultures with reasonable shelf-life for commercial use.
7. Low-cost and most effective in-situ and ex-situ bioremediation technologies should be developed.
8. Multiple processes i.e. using plants and microbes together, use of plant growth promoting rhizo-bacteria (PGPR) and other methods such as landfarming and nutrient supplements etc. should be used for remediating more complex contamination, especially polycyclic aromatic hydrocarbons and heavy metals from the environment.

Finally, multidisciplinary approach involving engineering, microbiology, ecology, geology and chemistry should be followed to have successful bioremediation and thereby to sustain the environment of the globe.

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The Erosion of Traditional Values and Moral Decadence in Contemporary Nigerian Society

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Abstract

The paper seeks to bring to limelight through vivid description, how the gradual destruction of traditional values has led to the increasing moral laxity in the contemporary Nigerian society. It employs descriptive research method for the study and recalls how life used to be in the pristine traditional society and how it is now in the contemporary Nigerian society. It was observed that in the pristine traditional society there was relative peace; crime rate was low and moral conducts were high. The paper recommends that healthy cultural values which are our essence as a nation be revived. It postulates that overreliance on western culture and tendencies over our traditional ways of life are major factors responsible for the increasing moral decadence in the contemporary Nigerian society.

Keywords: Erosion, Traditional, Values, Decadence, Contemporary, Nigerian, Society

Introduction

There is no contradiction to the fact that the transition from traditional to modern society has brought huge benefits to mankind, ranging from ease of transportation, ease of communication, access to orthodox medicine which has demystified certain ailments that were hitherto posed as mysteries. However, this transition is not without its dark side. Like most societies the world over, the contemporary Nigerian society has witnessed an unprecedented increase in crime rate. The paradox is that, with the proliferation of churches and other allied institutions which is supposed to be a mark of greater spiritual enlightenment and godliness in the contemporary Nigerian society, one would have expected social vices to be on the decrease; but it is rather on the increase and really so alarming.

The contemporary Nigerian society has experienced diverse and perverse inhumanities and brutalities as vices perpetrated by man against his fellow man, such as children against parents, parents against children, siblings against siblings, husbands against wives, wives against husbands, and between non kin. Such ills range from murder, kidnap, bomb blast, rape, armed robbery, armed conflict, domestic violence, human trafficking, misappropriation and embezzlement of public funds, cultism, alcoholism and what-have-you. The hypothesis is that the root of these vices is not far from overreliance on western culture over our traditional ways of life and values which were transmitted through songs, proverbs, folklore and organised societies like age grades among others.

From Value for Life to Almost Sheer Disregard for Human Life

Life is the highest value. Without it, every other thing related to man is meaningless. In the traditional society there was a common belief that life was worth much more than what was used to preserve it. Hence the value placed on life ranked higher than any material thing. In Ibibio Traditional Society in particular, the most important thing in the world of man was life. Human existence was believed to be of prime value and any other thing was expected to serve its realisation.¹ Nwala agrees with Udoidem when he observes that to the traditional Igbo the highest value was life. Hence the Igbo say *ndubuisi* – life is of supreme importance.² This observation is also true of the Ibibio where it is said *uwem ado imo*, meaning life is wealth.

Ezeanya corroborates the high value placed on life by traditional Africans. According to him, African religious philosophy is life-centred. Nearly all the prayers offered to God, the divinities and ancestors can be summarised in one way or another as prayers geared towards obtaining life, for resolving it, or for preserving it from countless dangers that threaten it.³ Life was so valuable in the traditional society that almost anything could be done to preserve or sustain it. As the most important value in the society, anything could be done to gain, preserve or secure life. This explains why all African philosophies are pragmatic and the people's worldview evidently anthropocentric.⁴ Man is at the centre of the community because, the community exists on the basis that man exists, and without life man is doomed and by extension the community. Hence the traditional society placed a high value on the lives of its members and established such values that enhanced the preservation of life.⁵

The value the traditional society placed on life is evident in some Ibibio names, such as *Uwem* – life; *Uwemedimo* – life is wealth, and proverb: *Itong amadu uwem aye kongho nkwa* – when there is life there is hope. The traditional society placed high premium on life and considered it sacred. The sanctity of life is derived from its source, God. According to Emenanjo,

in the age of innocence the rural dwellers had very great respect for life because it comes from God. It was valued greater than any other thing. It could not be brought about by the blacksmith. All things were only useful if they had life.⁶

In their daily reflections and prayers, allusions were made to life. The main theme of their prayers was centred on life: *Abasi, dip uwem mmi* (God, preserve my life); *Abasi, dip itong uwem mmi* (God, preserve the root of my life); *Abasi, kpeme uwem mmi* (God, protect my life); *Abasi, mkpeme mien* (God, guard me). Some Igbo examples are: *Chineke, nyem ndu* (God, give me life); *Chineke, chebe ndum* (God, protect my life); *Chineke, nyem ogologo ndu na ahu ike* (God, give me long life and good health). These are some of the ways the people expressed their high value for life. The people took great care to preserve life; because according to Iwe, traditional ethics set very high value on the sanctity and dignity of human life. In the traditional society, human life was the basis of all good and the necessary source of all human activities and societies.⁷ Therefore murder in the traditional society attracted death penalty. Murder was a taboo, especially when a fellow kinsman or woman was involved. This taboo aimed at protecting the sanctity of human life was extended to suicide. Just as one was not permitted to take another person's life, he was not also permitted to take his own life. These prohibitions were primarily aimed at preserving the sanctity of life.

The primary ingredient for the preservation of life in the traditional society was to live a good life. The good life, as opposed to bad life, is essential in the preservation of life and the maintenance of ethical order and stability. To live a good life therefore, one was expected to live according to the norms of the society. This included the observance of all the values of the society and the avoidance of all actions that infringed on healthy relationship with God, the divinities and the ancestors who were the custodians of public norms and morality. The maintenance of a healthy relationship between man and the spirit beings was very essential towards the preservation of life.

According to Ilogu, life is a very important value to be conserved. Hence all the rigorous ways by which the moral code was observed; because a breach of the harmony between man, nature and the spirit beings could lead to possible destruction of many lives. The ultimate reason, therefore, for religious rituals, customs, ethical codes and rules that guided socio-political and cultural relations in the traditional society was to preserve life.⁸ But the same cannot be said of the contemporary Nigerian society where there seems to be complete disregard for human life, resulting in the rise in incidences of bomb blast, kidnap, murder, suicide and human trafficking reported in many local and international news headlines on daily basis. Some of the headlines, 50 Feared Dead and 50 Others Wounded in a Blast in Sabon Gari;⁹ Man Beheads Father;¹⁰ Man Beheads Mother;¹¹ Man Beheads Brother;¹² Man Beheads Wife;¹³ Man Gave Girlfriend Acid-bath;¹⁴ Woman Stabs Husband to Death,¹⁵ etc., are really so outrageous that one cannot even imagine them.

From Justice to Impunity

Justice means fairness or rationality in the way people are treated. Impunity, on the other hand, refers to exemption or freedom from punishment. As a value system, justice contributed immensely to the maintenance of peace and order in the traditional society. It is a fundamental ethical order which enhances the preservation of life and good human relations. According to Iwe, justice was to the ethical culture of Africans what love is to the Christians. One who could not lay claim to justice was, in the eyes of the community, either a mischievous villain or an abominable

hypocrite, worthy of neither trust nor respect.¹⁶ Justice was the basis of moral life in the traditional society and the measure of moral goodness. Hence unjust men and acts were condemned and viewed with disdain. Justice formulates principles that restrain evil, the evildoer and all unethical conducts that impinge on the life of an individual and the community at large. It also prescribes acts which engender the ethical order and stability of the community. Every aspect of the social life and custom of the people was ranked or evaluated based on justice. The principles of justice determine the just and unjust nature of human action and interaction in the community. Hence justice is the means between right and wrong and between equality and inequality.

Justice regulates the relationship between men and between men and the spirit beings. Bribery and corruption had no place in the traditional society; for to indulge in such act was to incur the wrath of the gods. No one committed an offence and got away with it as the watchful eyes of the spirit beings – the custodians of public morality – would definitely fish him out if he was able to hide such deed from the sight of men. Cases were treated based on their merits according to the customs and traditions of the people and punishments meted out on the same basis. The judge, usually the family, village or clan head, was expected to be impartial and transparent in his judgment because the spirit beings – the Supreme Being, the divinities and ancestors – were believed to be present.¹⁷ Hence the judge was invariably expected to give a just and fair judgment. This was based on the belief that injustice attracted the wrath of the spiritual witnesses.

The contemporary Nigerian society is an antithesis of the pristine traditional society in regards to justice. Crimes are committed on daily basis in Nigeria with impunity. Many have been denied of justice merely because they could not meet police demands or hire the services of a lawyer to advocate their cause in the court of law. Some who could afford to seek justice were denied of it because of the social status of the people they were contending with, whereas in the pristine traditional society the law was no respecter of person. It is no longer news, therefore, that some Nigerian judges pervert justice and take bribe.¹⁸ This accounts a great deal for the increasing moral laxity in the country.

From Honesty to Dishonesty

Honesty was an important value in the traditional society. One who told the truth was described as an honest person. *Tang akpan iko* – say the truth – was a constant admonition to the Ibibio. This is because honesty was an essential virtue of a good and transparent life. Liars, secretive, unfaithful and dishonest people were often rebuked, while honest people were often complimented. A good man in Ibibio was a man who lived a life characterised by transparency, truth and honesty. One notable and age-long means of coercing the truth out of a person in Ibibio was through *mbiam* – oath-taking, which had disastrous consequences for culprits.¹⁹

Traditional Ibibio Society frowned at people who knew the truth but concealed it. Distortion of fact constituted an offence in Ibibio. To conceal truth was tantamount to abetting crime. Truth and honesty are marks of moral rectitude. Truth, honesty and integrity are moral qualities which a person should possess. A person given to falsehood had no regard in the society but always treated with contempt. The value placed on truth, honesty and transparent humane living accounted for why the traditional society had a store of old men and women who were noted for moral rectitude. For such elders, their words were their bond and their integrity shone

like the stars. Honesty and truth are, therefore, strong moral principles which upheld the stability of the traditional society.

According to Uchendu, good citizenship demanded transparent living, which was one of the preconditions for attaining the status of an ancestor. Hence a gentleman was one who lived a transparent life of honesty and respected the customs and traditions of the community. Such a person was usually honoured with a title.²⁰ The same cannot be said of the contemporary Nigerian society where people play politics on virtually everything in the society; even the most essential sectors of the country such as health and education are not left out. If government is quick at making policies, it would be slow at implementing them. Often times it takes industrial action for labour union to compel government to implement an agreement it made with the union. Of course, strike is the only language the government understands. These days people make empty promises even in sacred places without fear. Vows and promises are made and broken at will. Hence verbal agreements are no longer valid in any serious transaction; people now insist on written agreement. What is more, misappropriation and embezzlement of public funds is fast becoming a norm. Dishonesty, deceit and scam are now the order of the day.

From Respect for Parents and Elders to Rude and Arrogant Behaviour

Another value, which was of primary importance to the traditional society, was respect for parents and elders. Elders were regarded as repository of knowledge and the handmaids of the divinities and ancestors. *Se ekambawo atie kisonk akid, etok ayin adoro ke enyong ikidte* – what an elder sees sitting, a child on a tree top does not see; *etok ayin amakpono ekambawo anyayung ado ekambawo* – a child who respects an elder will also live long to become an elder. These are Ibibio sayings that illustrate the value placed on elders because of their wealth of experience in life.

In the traditional society, it was the duty of young people to run errands for their elders and to greet them first wherever they saw them. Young people were also expected to seek counsels from their elders. It was a serious offence for the young to treat an elder with disrespect. This is evident in, *idoho etok ayin imia ekambawo asong nte ise danga abitua* – it is not a child beating up an elder that is difficult like watching the elder cry. This Ibibio proverb implies that a child who disrespects an elder brings a curse upon himself. The respect, honour and reverence given to the ancestors in the spiritual world are believed to be an extension of the respect that ought to be given to elders in the physical world.²¹

On the contrary, in the contemporary Nigerian society, many youths seem to have lost their sense of respect for elders. It is not uncommon these days to see a youth talking to an elder old enough to be his/her grandfather/grandmother as if he/she is talking to his/her mate, calling the elder names such as, witch, wizard, old-school, old-fool, among others, and at times may even threaten to beat up the poor old man/woman.

From Communal Spirit and Solidarity to Individuality and Disunity

African culture functioned more effectively on a communal rather than on an individual basis. The community held the customs and traditions of the people, and the individual functioned within the community. According to Olaniyan, the key concept in understanding African social organisation is that of the corporate group.²² Every individual did belong to several overlapping groups which provided the terms of reference for his daily life. The social order and stability

which the pristine traditional society enjoyed rested on the concept of the individual as part of a corporate group. The perception of belonging to a group, at the family, village, or clan, was always paramount over the sense of individuality. Individuals acted as members of a group to which they were responsible. Hence the group itself dealt with an offence against another member of its group. This was so because it was believed that what affected one, affected all and by implication, the entire community. Therefore everyone was a team-player.²³

The spirit of co-operation, love and solidarity characterised life in the pristine traditional society. Successes, failures, problems and responsibilities were collectively shared. One man was concerned in another's affairs. Resources were pooled for common good, such as the electrification of the community, supporting of an individual in school who would in turn become a pillar of enlightenment to the community. The former is still in vogue. The latter was one of the objectives of the Ibibio Union, a dynamic socio-cultural group in the former South Eastern Nigeria, and was predicated on the belief that a child was not owned by his biological parents alone but belonged to the entire community. That explains why any man or woman of age in the community could discipline any erring child and had the consent of the child's parents. People made reference more to "our" than "my". This is evident in the Ibibio sayings, *nkpo amanaam enyen anam iwooh* – what affects the eyes affects the nose; *eto isidaha ikpoong ikapa akai* – a tree does not make a forest; *edehe udim* – there is strength in multitude of people; *ubok mmum ubok mmum anye aben ekpat* – many hands put together would lift a fallen tree. These justify the belief that an individual cannot go beyond a certain limit without the help of others. Hence individuals willingly identified with the various groups in the society. The supportive role, solidarity and reciprocity inherent in communal spirit were, therefore, brought to bear.

The same cannot be said of the cotemporary Nigerian society where individualistic tendency and disunity among the various ethnic groups have threatened the corporate existence of the nation. Personal interests have preceded corporate interest. This accounts for the countless loot of our nation's resources by public officers at the detriment of the masses. This and many other injustices have resulted in series of unrests bedeviling the contemporary Nigerian society.

From Industry to Get-rich-quick Syndrome

Industry here refers to diligent hard work. Decent and rewarding labour was the only approved means through which life was sustained in the traditional society. To be alive was to be able to provide a means of livelihood. Laziness had no place in the traditional life of the people. Hard work and a sense of industry were the keys to self-realisation. Next to the morally depraved was the lazy man who could not justify his existence by honest hard work. Labour as a means of livelihood and self-realisation had always been held in high esteem with devotion and diligence. The true road to success in life was through resourcefulness and industry.²⁴

Taking of title depended on the sense of hard-work. Wealth was measured in terms of one's success in agricultural produce. The value placed on industry helped to check the incidences of stealing, laziness, jealousy and poverty. The sense of industry was, therefore, the economic life wire of the traditional society and it helped to reduce the rate of theft to the barest minimum. It must be noted that in the contemporary Nigerian society many are not hardworking and some are not even ready to work. Scores of Nigerian youths are roaming the street everyday in search of white collar jobs that are difficult to come by these days. Some have resorted to politics, many others to armed robbery, kidnapping, yahoo-yahoo, church planting, etc., to earn a living and get

rich quick, whereas a vital sector of the economy like agriculture is still in dire need of more hands.

Conclusion

From the foregoing, it is clear that life in the traditional society was relatively pleasant as moral standard was high and immorality was on the barest minimum. But with the transition from traditional to modern ways of life, which was greatly influenced by western civilisation, there has been a new social order and a new mode of life all together. Africans, and Nigerians in particular, had abandoned almost all their traditional ways of life and values for western culture, some of which have brought negative influence on the people.

Recommendations

The following are possible solutions to the problem under study:

- i. Let us start looking inward and avoid over relying on the western world for assistance.
- ii. Let us revive our cultural values, which are our essence as nation and uphold every healthy aspect of our culture.
- iii. We must stop adopting western culture blindly. The 7th National Assembly of Nigeria deserves commendation in this regard for refusing to legalise same sex marriage in Nigeria.
- iv. There should be stiffer penalties for lawbreakers.
- v. The law enforcement agents should live up to expectation.
- vi. Parents should live up to expectation in inculcating moral norms and values into their children.
- vii. The church and other faith-based organisations as agents of socialisation should preach morality as much as prosperity.
- viii. The rule of law should be observed strictly.
- ix. The judiciary should be strengthened and allowed an air of independence so that it can administer justice without fear or favour. Erring judges and magistrates should be duly sanctioned.
- x. Moral education should be taught in schools to our young ones.
- xi. Salaries and allowances of politicians should be reexamined so that politicians will stop seeing politics as an opportunity to enrich themselves and as a do-or-die affair, but rather as an opportunity to render meritorious service to the society.
- xii. Lawbreakers should be made to face the full weight of the law irrespective of who they are; so that it will serve as deterrent to others.
- xiii. There should be reward for hard-work and moral excellence by government and non-governmental organisations; even the man in the garden who does his job diligently should be handsomely rewarded and dignified.
- xiv. There should be campaign by well-meaning Nigerians against social vices.

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Women under Terrorism in Nigeria: The Emerging Rape Culture and Its Consequences

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Abstract

Rape as a non- consensual, forcible sexual relation has assumed a pandemic proportion in Nigeria recently due to many factors. These includes culture of silence associated with rape, fear of stigmatization, socio-economic reasons including gender-based violence in the context of political-religious insurgency like that of Boko Haram which has not hidden its institutional targets to include Jihad by the penis. This sect has deliberately targeted so-called Christian women and girls as sex slaves. Sexual violence and forcible impregnation of the women are considered new tactics of Jihadist warfare. This paper is largely library and Internet researched and contends that the pursuance of dual ideological pathways ie liberal democracy and Shariah law is to blame for the impunity with which the perpetrators go about their criminality while subjecting their victims to dehumanizing agonies and health dangers. The paper contends that under this present reality, society cannot continue to sleep at the cerebral wheel.

Key Words: Rape; Women; Conflict; Terrorism

Introduction

Rape constitutes one of the most commonest and heinous crimes in Nigeria today. News reports are littered with stories of new victims who are forcefully raped by untamed male predators who manifest some of the crudest animal instincts. Rape reflects the moral bankruptcy, decadence, ambivalence and godlessness of the Nigerian society. It is a crime in which the attacker uses sex to inflict pain, often times injuries to humiliate, exert power and control over his victim. This type of predatory sex is largely perpetrated by the males against females. While there seems to be no age limit regarding rape in Nigeria, as babies, children, adolescents, matured women, mothers, grandmothers and the aged are being defiled recklessly, adults and young adults who fall victims of this crime do not come forward because of stigmatization by the society and thus live with the horror of this abuse all their lives.

Towards A Definition

On a general term, sexual violence can be seen as

Any act, attempt to obtain a sexual act, unwanted sexual comments or advances, or acts to traffic, or otherwise directed, against a person's sexuality using coercion, by any person regardless of their relationship to the victim, in any setting including but not limited to home and work (Krug, 2002).

Force or coercion exerted on the victim may include physical and or psychological intimidation, blackmail or other forms of threat. It may also occur when the victim or the person aggressed is unable to give consent because she is incapable of understanding the situation or implication, is drugged, hypnotized or threatened with a weapon or captured.

Rape on the other hand is to be physically forced or otherwise coerced penetration, no matter how slight-of the vulva or anus, using a penis, other body parts or an object. It could include other forms of assault involving a sexual organ including the mouth and penis, vulva or anus. The attempt to do so is referred to as attempted rape while such an act by more than one person is called gang rape (Krug, 2002, p149).

Rape could take different shapes including marital rape or wife rape, rape by strangers, systematic rape during armed conflicts, unwanted sexual advances or sexual harassment, including demanding sex in return for favours, sexual abuse of mentally or physically disabled people, sexual abuse of children, forced marriage or cohabitation, including the marriage of children, violent acts against the integrity of women, forced prostitution and trafficking of people for the purpose of sexual exploitation.

Sexual traffickers adopt strategies such as coercion, deception, debt, slavery and imprisonment of victims. Victims are often lured with promises of greener pastures overseas etc and usually have their passports confiscated by their patrons/matrons until they indulge in prostitution long enough to pay back the cost of their transportation and visa (Krug, 2002, p150). From the above, rape can still be defined as having an unlawful sexual intercourse with someone with or without the use of force in order to achieve sexual gratification. This may include among other things, making a child to touch, caress or suck ones private parts to derive sexual pleasure (Chukwuma, 2013).

The Iceberg Principle

Rape, generally is an infringement on the rights of the victims and constitutes gross violation of human rights. Rape cases are on the increase all across the states of the Federation. The data on this growing evil comes from the police. The relationship between the statistics and the actual magnitude of the problem may be simply viewed as a corresponding to an iceberg floating on the ocean. Usually what is seen as an iceberg is just about a tenth of the actual mass of the ice block which is submerged in the water. The one tenth seen outside represents the cases reported to the police while the nine tenth represents the cases unreported.

Expressing his anger at this increasing evil, Chiedu recently lamented that:

There are several cases, which are very irritating. Now and then, it is reported that a teacher has raped a student. A religious leader has raped his flock. Robbers have raped a victim. A man has raped a sister in law or daughter in law. A master has raped a house maid. A security man has raped his master's wife. A boss has raped his staff. A father has raped his daughter. A young man has raped a grandmother. A minor has raped a fellow minor. A traditional ruler has raped a subject. An 80 year old man has raped an 8 year old girl (Chiedu, 2013).

Some have suggested that of the reported cases, the incidence of baby and child rape has reached 70% of the total cases in the country (Ejim, 2013). The statistics are disheartening, the Niger Delta Region, Nigeria's crude oil hub, the incidence of rape is said to be higher than the national average by 100% and the region is described as the rape capital of Nigeria (Mohammed, 2015). Kawu (2013) has argued that no fewer than 1200 girls were raped in Rivers State in 2012 as reported. The bulk of the victims were minors and adolescents.

There were more than 100 reported cases of rape between November and December 2013 in Kano courts, as many more of such cases were settled outside courtrooms within the same period apart from the multitudes that were not even reported because of stigmatization and the harshness of the judicial system (Umar, 2014). Stigmatization of rape victims keeps the numbers very low and is a further encouragement and armoury to the rapists.

These cases were largely reported because they were purely violation or reckless defilement of babies and minors. Earlier, particularly in 2008/9, the Police and Government Officials reported that there was a serious upsurge in the incidences of rape in Kano and therefore declared the city unsafe for young girls (Salihi, 2014). The figures could even be higher with the young adults and the adults who, except on very rare occasions keep mute to avoid public stigmatization and ridicule. The total figure or number of reported cases across the 36 states and the FCT could be alarming. Statistics suggests that only about 18% of rape cases are reported in Nigeria (Peters and Oluowa, 2010, p271).

Recently, Edo state paraded 12 people who were held for rape and defilement of underage children. Among the suspects were men of over 65years old. Ibadan, the Oyo State capitals records a minimum of 20 new cases every month with only one out of 100% rape cases receiving any diligent prosecution (Ajibola, 2013).

Similarly, Lagos recorded 678 cases within one year according to the Lagos State Police Command. More alarming, the police lamented, the epidemic is claiming more victims among under age persons some as young as three months old (Vanguard, 2014, p1)

Nigeria and Rape Culture

Without any intention of joining issues in unnecessary and non-value added debates, this paper suggests that there exists a rape culture in Nigeria. Rape culture is an environment where rape is prevalent. It exists where and when a section of the society excuses it or its sanction under whatever guise. When and where it is normalized and excused by the society's social, visual or print media popular culture and when and where certain individuals and their predator sons are above the law. Jordan (2014) has further suggested that it is perpetuated through the use of misogynistic language, the objectification of women's bodies and the glamorization of sexual violence which consciously or unconsciously demeans women and disregards their rights and safety but sees them more as property and appendages.

All these conditions exist in Nigeria. There exist the culture of victim blaming, trivializing rape and sexual harassment under the guise of indecent dressing and teaching the girls how not to get raped instead of teaching the young men and other adult deviants not to rape or as Kano Police Command and Government Officials did recently by declaring the city unsafe for young girls as though the predators are spirits that are invincible.

Nigeria practices a dual system, liberal democracy and the shariah system. Ironically both systems are enshrined in the 1999 constitution which was imposed on the Nigerian people by a tiny Islamic section of the military. Under shariah system, the victim of rape is burdened with proving her lack of consent. To make matters even more difficult, a victim's rape accusation can only be backed by eye witnesses and no circumstantial evidence is tolerated. In some cases, Shariah law only gives a monetary punishment against a convicted rapist (if any has ever been convicted in a Shariah court) For example, a rapist might be obliged to pay the victim the amount she would normally receive as marriage payment, or if the rapist cannot be punished, he must pay the victim the amount equal to bride money (Brigneti and Egbonimali, 2015).

The story of Bariya Ibrahim, a teenage single mother who became pregnant as a result of a gang rape demonstrates that there exists rape culture in Nigeria. Bariya was gang raped by three men. Though she dragged the three before a Shariah court, in accordance with Shariah law, she was required to show proof that the men who raped her had indeed forced her to have sex with them. Her case was interpreted by the Shariah judges as fornication since she could not present witnesses to confirm the veracity of her claims. Thus, instead of getting justice for the crime committed against her, she was given 100 strokes or lashes for adultery while the rapists walked away free (Brigneti and Egbonimali, 2015). Rape victims are not customers who can exercise free choice. They are simply incapable of exercising whatever choices.

Causes of Rape

There are many and varied explanations that can be adduced as to the causes of rape. A study has suggested that the causes of rape can be categorized into four:

- Displaced aggression
- Impulse
- Sex aggression diffusion and
- Compensation.

According to the study, displaced aggression is the rape that is committed to harm the victim who is usually a stranger. They see this type of rape as ventilation of anger caused by his wife, mother or girlfriend (Peters and Oluowa, 2010, p270). According to them, impulse rape is not motivated by sexual hunger or feelings. The example of this type is rapes committed during robberies. Similarly, they see sex aggression diffusion as the result of aggressive thoughts because according to them, aggression and sexual components coexists. The major motive of compensation rape according to them is sex (Ngharen, 2016, p25).

The major issue with these categorizations is that they are farfetched and lack contextual and contemporary relevance to Africa and Nigeria in particular. Those theories describe some aspects of the western society but are weak in the face of contemporary reality. They fail to explain for example why parents and adults could rape three months old babies or grandmothers. This paper will discuss the factors increasing men's risk of committing rape under four categories. There are societal factors, community factors, relationship factors and personal or individual factors.

Under, societal factors, we can argue that globalization and modernization have fundamentally destroyed our cultural structure of reality and morality. We live in a sex soaked environment. From brand to basic household basics, sex is advertised on TV, radio, super markets, sport events etc. In the traditional African society, sex was considered sacred and private. Economic production and the general wellbeing of the community were all tied to morality. Sex outside marriage was forbidden and deviants were exiled or severely punished. Incest was a taboo, while pregnancy out of wedlock was considered a disgrace. Virginity was the pride of every community as it determined farm yields and the potency of traditional hunting portions and victories in conflicts and wars (Kawu, 2013).

Something is broken in the Nigerian society today and rape merely reflects and reinforces the desperate social situation. It is located in the pervasive system of inequality that perpetrate the domination of men and the subordination of women. It is the manifestation of historically unequal power relations between men and women which has led to domination over and discrimination and oppression against women by men to prevent the full advancement of women (Vlachova and Biason, 2005,p4).

Rape exposes the decaying soul of the society as it strangulates and damages the humanity of its victims and dehumanizes the human species. There is also importantly but unfortunately the breakdown of family life in most of our communities. Healthy sexual life in families is suffering as a result of distances or work pressure. Economic hardship has hamstrung individuals ability to marry.

In most societies in Nigeria, male chauvinism which has been bolstered by socio-cultural and religious beliefs and reinforced by declining economic fortunes has created a serious dilemma and crisis of virility and esteem which the men are falsely reclaiming through acts of violence. Rape itself is a manifestation of a false and fractured consciousness where men imagine themselves as exercising authority over women.

The community factors include poverty, lack of employment opportunities. Poverty compels many women and girls into trades that are high risk for sexual violence. Poor women and girls are more vulnerable to rape than those who are relatively financial stable. Most children who

are abused are those hawking items to help their families etch a living. Most of them are out of school and could wander far away from home in search of buyers of their items. Sometimes they are lured by rapists and abused.

Lack of institutional or legal framework to deal with this menace has strengthened its existence. Though rape is very common and is an everyday grievous crime, securing Convictions for the offence of rape, in Nigerian courts, in recent times, has become extremely herculean. This may be attributable to the arduous, archaic burden of proving the offence. This is made more difficult where there exist two different legal systems as we have in Nigeria.

There is also the absence of support from the Police authorities who only pay lip service to fighting this growing evil. They actually shield the sex offenders couple with religious support for perpetrators of rape which places the burden of proof on the aggressed or victim. This keeps this evil thriving.

The relationship factors largely deal with the fact that bad company does corrupt good manners. Most offenders under this category are those who either abuse drugs, are members of some secret cults or fraternities etc. They could also be members of religious or fundamentalist sects operating under the influence or power of some philosophy. They could express some of the beastly tendencies especially when they have religious colorations etc. This is the kind of collective criminality expressed by members of Boko Haram sect.

The last category is the individual factors. Most perpetrators who are influenced under this category are people who themselves may have suffered abuse as children or had witnessed violence as children.

Consequences of Rape

Rape of women includes threats, coercion or arbitrary deprivation of liberty as are common in situations of conflicts. Deaths associated with rape are known to occur. Rape also often leads to pregnancy and gynaecological complications. Rape at a tender age, reduces a woman's ability to see her sexuality as something which she has control over.

The rape victims suffer from mental health and behavioural problems in adolescence and adulthood. Most of them suffer depression and post- traumatic stress disorder. Some of them suffer sleep difficulties, depressive symptoms, emotional problems, low self-esteem, theft and truancy(Krug, 2002,p163).

Suicide tendencies are higher among rape victims than any other group. For the rest of their lives, most victims of rape live in an insecure world. Most of them live under stigmatization and mockery where their abusers taunt them daily. Others are socially ostracized and forced to marry men who defiled them as punishments.

The risk of contracting sexually transmitted disease, HIV and VVF in the case of minors is very high. It is not easy to ascertain the health status of a rapist. Most of the women and girls released by Nigerian army in Sambisa Forest in recent weeks were visibly pregnant and many tested positive to HIV. Sometimes the rapists in order to avoid prosecution or hide their identities even kill their victims or threaten them with death, acid bath etc to force them to remain quite.

It is evident that the major target of Boko Haram is to rid the North of Christians. The two major weapons used in waging the insurgency were the AK 47 and the penis. Virtually all

Christian women and girls that they came across were repeatedly raped and many killed. They also selectively destroyed all Christian shops and businesses. The trauma of victims can better be imagined than narrated.

Conclusion

Rape is a common and grave public health matter in Nigeria affecting multitudes every day of the year. It is caused by many factors operating under social, societal, community and personal contexts. Statistics on rape in Nigeria are near absent because only about 18% of rape cases are reported. The need to truly criminalize rape and bring perpetrators to book through legal and institutional reforms cannot be overemphasized. Rape, though can affect all social strata of the society is however more pronounced with the less privileged who scavenge and hawk around or go the farms alone. Government agencies at all levels, community leaders and the general public must divest parts of their service portfolios to the fight against this menace.

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