

# ADVANCES IN SOCIAL SCIENCES RESEARCH JOURNAL

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## Gender Pattern in Participation and Performance at Mathematics Olympiads

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### ABSTRACT

Rating of schools, regions and countries in mathematics performance is often based on olympiad results. International Mathematics Olympiad (IMO) was male-dominated with < 10% contestants being females from 1959 to 2012. Study analyzed math olympiad results for 6769 female (47.1%) and 7595 male (52.9%) Nigerian students. More males (3137/7595; 41.3%) than females (2677/6769; 39.5%) had scores above average total scores (Mantel-Haenszel =4.578, OR 0.92 (95% CI: 0.86 to 0.99;  $p < 0.001$ ). Scores in objective question were better for males than females (Kruskal-Wallis =16.80;  $p < 0.0001$ ). Females had higher scores in theory question (KW- H test=14.96,  $p < 0.001$ ). Gender differences in participation and performance was marginal in the Nigerian contest. Implications of findings for gender inequity in mathematics olympiads is discussed.

**Key words:** Gender, Mathematics, Olympiad, Inequity, students

### INTRODUCTION

The third Millennium Development Goal is an expression of the international commitment to promote gender equality and empower women. Education in science and technology is a key strategy to empower women. Since mathematics occupies a central place in all disciplines related to science and technology, improving the participation of girls in mathematics is crucial to strategies to empower women. It is widely acknowledged that women have been under-represented in mathematics, science and technology. Global and national efforts to improve gender equality and empower women has led to remarkable improvement in the situation of women in several fields sectors and disciplines including the sciences.

The rating of students, schools, regions and countries in mathematics has often been based on the results of competition and Olympiads. Track the performance the participation of girls in Olympiads provides an initiatives that promise to improve the motivation and participation of girls in mathematics education. Examining trends in the participation and performance of women in mathematics Olympiad may not be the best approach to determine the magnitude of improvements in the participation and performance of girls in mathematics but give an indication of the direction of change.

Studies into the processes and factors that hinder the interest, confidence and participation of girls in mathenatics have led to some understanding of these factors (Mulhem, 1999), but the longstanding contention that discrimination, intimidation and taunting of girls contributes to the under-representation of girls in mathematics especially situations where they have to compete with boys remains to be confirmed by consistent empirical evidence. Reward and recognition are key feature of competitions including mathematics Olympiads. Using achievement-based rewards for the purpose of improving students' motivation, participation and performance in mathematics is a key reason for national and international mathematics olympiads but achievement-based rewards have merits and demerits.(Cameron et al. 2005).

Cognitive evaluation theory (CET) provides a framework for better understanding of the extent to which Olympiads and other competitive mathematics events motivate students to learn mathematics.

Cognitive evaluation theory (CET) explains how rewards tied to achievement affects intrinsic motivation. The theory proposes that the critical process that mediates the effects of performance-based rewards on intrinsic motivation are perceived autonomy and perceived competence. It posits that (Deci et al, 1999). When rewards are perceived to be controlling perception of autonomy decreases, leading to lower intrinsic motivation. The proponents of CET therefore hypothesized that because reward always has a controlling aspect, achievement-based reward will invariably decrease intrinsic motivation. A review of several studies that assessed the effect of rewards on autonomy and intrinsic motivation showed that rewards increase self-perception of autonomy and intrinsic motivation (Eisenberger, Pierce and Cameron, 1999). This dominant school of thought essentially validates the usefulness of mathematics competitions and Olympiads.

International Mathematics Olympiad (IMO) is the most prominent event brings boys and girls into contest for the purpose of encouraging improvement in participation and performance in mathematics. This paper seeks to illustrate gender patterns in participation and performance mathematics Olympiads.

## METHODS

The research design is analysis of data available on participation of male and female high school students who have participated in the International Mathematics Olympiads from its inception in 1959 to 2012. Data available from the first stage of a recent (2012) nationwide mathematics competition involving male and female high school students in Nigeria were analysed to assess the current gender pattern in participation and performance in competitive mathematics tests in Nigeria. Mean scores were compared using the Kruskal-Wallis H Test. Proportions of male and female contestants whom performed above the composite average scores objective and theory tests were compared using Mantel-Haenszel chi-squared test and odds ratio with 95% confidence intervals.

## RESULTS

### Participation

Information on participation was available for the International Mathematics Olympiad (IMO) data set and the Nigerian nationwide mathematics competition data.

A total of 14,546 high school students had recorded to have participated in the IMO from 1959 to 2012 but data on gender classification were available for 12,531. There were a total of 11,587 (92%) male contestants and 944 (8%) female contestants. A sensitivity analysis assuming that 50% of the participant with missing gender data were females gave an assumed cumulative total of 1952 (13%) female contestant's in the IMO to date. Figures 1, 2 and 3 show that the number of female and female contestants in IMO has increased over time but with female students remaining grossly under-represented from inception of IMO to date.

Data on the first stage of the 2013 national junior high school mathematics competition in Nigeria shows that there were a total 14,364 contestants , 6769 (47.1%) were female and 7595 (52.9%) were male. This suggests that an early stage of mathematics competition at national level, the participation of girls is much higher than is suggested by the gross under-representation shown by IMO participation data.



### Performance

Information on performance in theory and objective mathematics tests were available for the Nigerian junior high school competition data set and not for IMO data. Table 1 shows the comparison of the mean scores of female and male contestants. The performance of male students was significantly better in the objective and combined scores while the female performed significantly better in the theory test.

Table 2 shows the proportion of male contestants that scored above the mean objective test and combined test scores were significantly higher than the females. On the other hand, the proportion of female students with scores above the average theory test score was significantly higher than the males.

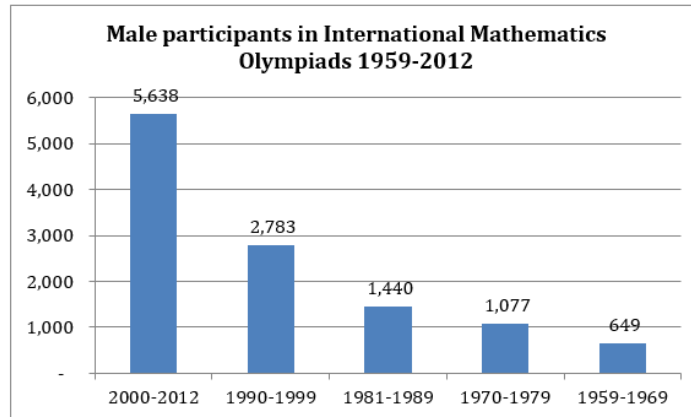


Figure 1: Numbers of Male Contestants in International Mathematics Olympiads (1959-2012)

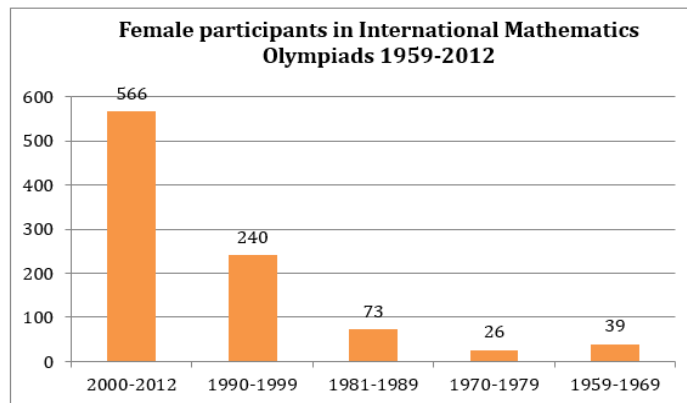


Figure 2: Numbers of Female Contestants in International Mathematics Olympiads (1959-2012)

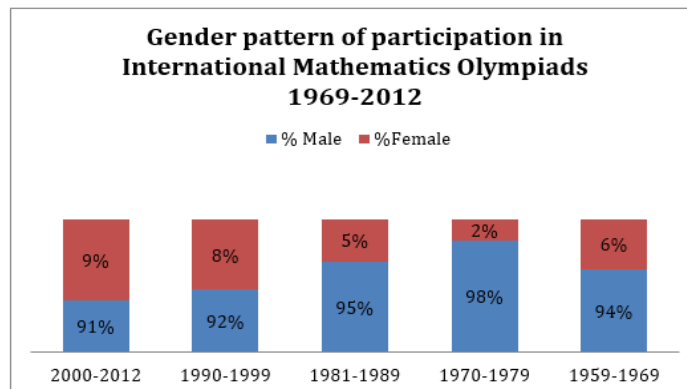


Figure 3: Percentage of Male and Female Contestants in Mathematics Olympiads (1959-2012)

**Table 1: Comparison of mean scores of male and female contestants in high school mathematics national Olympiad in Nigeria**

Question type	Mean score (SD)		Kruskal-Wallis H Test	P-value	Remarks
	Female N=6769	Male N=7595			
<b>Objective</b>	20.09 (9.99)	20.98 (11.0)	16.80	0.000	Male significantly higher
<b>Theory</b>	3.326 (2.949)	3.119 (2.832)	14.967	0.0001	Female significantly higher
<b>Combined scores</b>	23.409 (12.474)	24.082 (11.554)	5.618	0.0178	Male significantly higher

**Table 2: Proportion of male and female contestants above mean score**

Question type	Number (%) above average score		Mantel-Haenszel X <sup>2</sup>	P-value	MLE Odds Ratio (95% confidence interval)
	Female N (%)	Male N (%)			
<b>Combined score</b>	2677 (39.5)	3137 (41.3)	4.578	0.000	0.92 (0.86 to 0.99)
<b>Objective</b>	2515 (37.1)	2989 (39.3)	7.329	0.0067	0.91 (0.85 to 0.97)
<b>Theory</b>	2598 (38.4)	2690 (35.4)	13.505	0.0002	1.13 (1.06 to 1.21)

## DISCUSSION

The results show that although females performed better in one aspect of the competition (theory questions) compared to the males, the males achieved higher scores in the combined test scores (objective plus theory) and therefore more likely to be selected for the next stage of the competition. This shows that while female students show keen interest in competitive mathematics tests they were more likely to be eliminated at an early stage and therefore become under-represented in national level final competitions and the International Mathematics Olympiads.

The view that boys always out-perform girls in mathematics and science is widely held. The current study showed that female contestants in the Nigerian junior high school Olympiad performed significantly better than the males in theoretical mathematics tests. The influence of gender on mathematics achievement has been well studied. The dominant view in published literature is that gender significantly influences mathematics achievement but a study of Nigerian primary school pupils found out that in different settings, differences in mathematics achievement may vary significantly in favour of either males or females, showing a tendency for co-educational settings to favour male students more than the females (Meremikwu, 2002). Other studies have also shown that in some settings and topic areas girls do better than boys. For instance, Havinghurst (1974) should that there could be significant sex differences in favour of girls on numbers, word fluency, reasoning and memory sub-texts. Also McCensland and Stewart (1974) in their study of college students showed that females obtained higher grades than males because females study more effectively and accepted standards more willingly. Pelfier (1986) also noted that more girls graduated from high school than boys probably partly because of better achievement on the part of girls.

## CONCLUSION AND RECOMMENDATION

Despite the fact that female students have the potential to perform as well or better than their male counterparts, the gross underrepresentation of girls in national and international competitions has gone on for decades apparently unnoticed nor given the required attention. We recommend multi-country studies to understand the mechanisms and factors that influence the low representation of girls in international and national mathematics competition. The results of these studies will provide useful information for planning and implementation of interventions to improve participation and performance of girls in mathematics competition. .

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## Canonical Relations of Sensomotoric Reactions to Light and Sound Stimulus

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### ABSTRACT

The sample subjects for this research list 20 subjects, of male gender, ranging from 20 to 22 years of age, a research of sensomotor reactions of multilateral and unilateral body parts was conducted. The process of collecting data and setting parameters was conducted using an instrument called the KINESIOMETER (M. Dodig, 1987), hooked up to an electronic computer, with an adequate periphery, with application of program support for analogue – digital conversion in the programming language SIMON'S BASIC. The basic reason for variability and covariability within the reaction time to light and sound signal incurred as the answer to efficient functioning of the perceptive system, channel permeability, efficiency of data decoding device and efficiency of data transmission and the efficient functioning of commissural connections between hemispheres represents the basic reason for obtained results. The obtained result incurred as the answer to a joint mechanism for structuring and speed of transmission impulse through afferent and efferent channels. In addition, the sensomotor reaction of multilateral parts to light and sound stimulus, due to its own preference of lateralization which manifest itself through curving of space towards the upper limbs, probably incurred as the answer to a larger direct autonomous and automatic use of the channels capacities and high-level organization of active effectors.

**Keywords:** canonical relations, sensomotor reactions, multilateral body parts, light and sound stimulus.

### INTRODUCTION

In the realization of motor motion a broad range of activating various factors is integrated, where sensomotor reactions play a significant role. Sensomotor reactions present an indicator of the state of which an organism is in before, during, and after a reaction [6], [8], [12], [15]. Every sensomotor reaction of an organism in a certain time starts with one receptor reaction and ends with a muscle response. This fact partly determines the course, circumference and rate of success of a unit in interaction with the outside world. The reaction of the organism is caused by the action of a certain stimulus on sensory receptors. Transference of that stimulus to the effector which reacts to the stimulus, represents the reaction time, which is defined as a temporal interval between the appearance of the stimulus and the first sign of a response [5], [7], [9], [13], [14]. In the regulation of the sensomotor reactions of multilateral body parts to light and sound stimulus, an very broad-spectre integration of including various regulative mechanisms is carried out, thus presenting a prerequisite of execution and determining the phenomenon of sensomotor reactions. As the basic communication and interaction is conducted between cerebral hemispheres characterized by a certain amount of autonomy and relative specialization, it is possible to differentiate them according to the types of data they convey, the pace they convey it at, as well as according to the precision of the conveyed data [1], [2], [3], [11].

The set research proceeds from the assumption that in presenting certain stimuli for sensomotor reactions to light and sound stimulus, it is possible to ensure the analysis of said data with one hemisphere (left or right), that is with both hemispheres simultaneously. All the while, depending on the complexity of the task, attempting to determine i.e. compare what analysis is more effective. It is presumed that a simple task requires one hemisphere for data analysis, considering that we “force” both hemispheres to activate themselves when dealing with a multilateral presentation, a relative efficiency of bilateral presentation stimulus is expected. On the other hand, in regard to multilateral motion, both hemispheres must be involved in solving the problem, and this collaboration with a bilateral presentation makes it easier. Since sensomotor reactions of multilateral body parts represent the source of a part of joint variability on light and sound stimulus, this research study was conducted to affirm the relations of these fields. Considering that the morphological – functional structure establishes a dependency of sensomotor reactions, this research study was developed with the aim to affirm a part of the entire variability separated by sensomotor reactions of multilateral body parts to light and sound stimulus.

### METHODS

The sample subjects for this research list 20 subjects, male, ranging from 20 to 22 years of age. The planned sample ensures a reliability factor of 0.95, that every correlational coefficient is equal to or larger than 0.42, considers different from zero. The process of collecting data and setting parameters was conducted using an instrument called the KINESIOMETER (M. Dodig, 1987), hooked up to an electronic computer, with an adequate periphery, with application of program support for analogue – digital conversion in the programming language SIMON'S BASIC. The instrumentarium uses 8 important analogue – digital converters (ADC) to which the kinesiometer and signal system were directly plugged into and synchronized with the measuring system.

Measuring is carried out through a determined program. The subject is in an adequate position with an attached instrumentarium and exerts a certain reaction through motion. The kinesiometer latched to body joints ensured transference of analogue sizes of body part reactions, which transform from electrical signals to digital impulses via an analogue-digital converter. The signal light system is directly connected to the converter which is synchronized with the measurement system that has a maximum precision measurement of  $2^{-8}$ , i.e. 256 parts of basic value. In this way obtaining significant data about Sensomotoric reactions to light and sound stimulus of individual body parts simultaneously is made possible. Measuring is carried out via an applied system for measuring in certain positions with solving certain tasks:

- (1) The subject is set on a background in a lying position on his back, with spread legs and arms next to his body to which kinesiometers are attached,
- (2) On a certain signal (light or sound) the subject exerts motion (flexion and extension – contractions and extending) of arms and legs simultaneously (Figure 1).

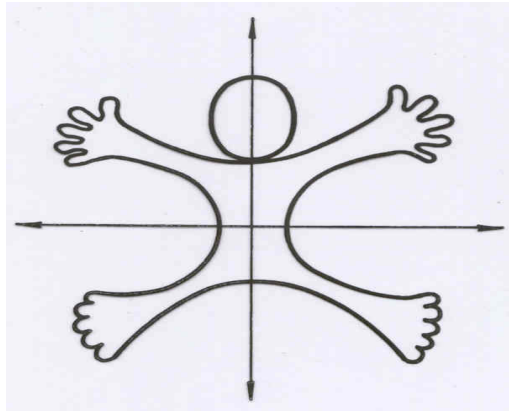


Figure 1. Schematic overview of determinateness of sensomotor reactions of multilateral (D. Ruka, L. Ruka, D. Noga, L. Noga) body parts to light and sound stimulus.

In this way variable groups are isolated which were previously data carriers about Sensomotoric reactions to multilateral body parts on light and sound stimulus. Tests marked with distinct codes where the first letter marks the sensomotor space (S), the second letter marks the type of stimulus, light (S) or sound (Z), the third and fourth letter the body part by which the reaction is realized, left leg (NL), left arm (RL), right leg (ND), right arm (RD) and the sixth letter marks the measured object, multilaterally (M)

(1) Variables for evaluation of sensomotor reactions multilateral (simultaneous reaction for all body parts – left leg, left arm, right leg, and right arm) body parts on light stimulus: 1. (SSNLM), 2. (SSRLM), 3. (SSNDM), 4. (SSRDM)

(2) Variables for evaluation of sensomotor reactions multilateral (simultaneous reaction for all body parts - left leg, left arm, right leg, and right arm) body parts on sound stimulus: 1. (SZNLM), 2. (SZRLM), 3. (SZNDM), 4. (SZRDM)

The relations between sensomotor reactions of multilateral body parts to light and sound stimulus have been analysed by the technique of canonical correlational analysis. For identifying significant canonical dimensions, in addition to the transformational coefficient vector, correlational variable and canonical dimension vectors were also used. The standards of those vectors were treated as a circumference measure for certain canonical dimensions. The number of significant dimensions is determined with the Bartlett method, where all connected canonical correlations different than zero with a reliability factor of 0.95 were considered significant. A canonical correlational analysis (Cooley i Lohnes, 1971) was conducted in terms of analysing data for affirming relations between the sensomotor reactions of multilateral body parts to light and sound stimulus. Coefficients of canonical correlation, vectors of transformational coefficients and correlations between variables and canonical dimensions isolated from both groups were analysed. The significance of the coefficient of canonical analysis was tested with Bartlett's method (Bartlett, 1947), with a 0.05 margin of error.

## RESULTS

Characteristics of variables were determined via routine descriptive procedures. The results were presented as per the requirements of the data. The interpretation was carried out according to stated spaces displayed in the tables. A group of variables of multilateral body parts to light and sound stimulus (table 1), indicates that all magnitudes of central and dispersive parameters do not vary significantly from the normal distribution.

**Table 1. Central and dispersive parameters of sensomotor reactions of multilateral body parts to light and sound stimulus**

Variables:	XA	SIG	MIN	MAX
1. SSNLM	0.2842	0.0419	0.1918	0.3495
2. SSRLM	0.2995	0.0407	0.2383	0.4065
3. SSNDM	0.2807	0.0472	0.2172	0.3775
4. SSRDM	0.2564	0.0487	0.1589	0.3364
5. SZNLM	0.3298	0.0669	0.2383	0.4916
6. SZRLM	0.3322	0.0733	0.1934	0.5022
7. SZNDM	0.3233	0.0756	0.2102	0.4613
8. SZRDM	0.2965	0.0696	0.1496	0.4345

Key: SSNLM – sensomotor reaction to light left leg multilaterally, SSRLM – sensomotor reaction to light left arm multilaterally, SSNDM – sensomotor reaction to light right leg multilaterally, SSRDM – sensomotor reaction to light right arm multilaterally, SZNLM – sensomotor reaction to sound left leg multilaterally, SZRLM – sensomotor reaction to sound left arm multilaterally, SZNDM – sensomotor reaction to sound right leg multilaterally, SZRDM – sensomotor reaction to sound right arm multilaterally,  
 XA – arithmetic mean  
 SIG – standard deviation  
 MIN – minimum  
 MAX – maximum

The obtained results were presented as per the analysis’ requirements. First the matrix was analysed, containing intercorrelations of variables in analysed groups (table 2). The basic characteristics of the inter-correlational original variables’ matrix are as follows:

- all mutual connections within the variable group that measured reactions of multilateral parts to light and sound stimulus are considerably large, and that particularly refers to the SZRDM variable, which measured the sensomotor reaction to the sound stimulus – right arm.
- Substantially higher mutual connections exist within variable groups that measured the reaction of multilateral body parts to light stimulus, and somewhat weaker yet high in the variable group that measured reactions of multilateral parts to sound stimulus.

Inspecting the inter-correlation matrix, a perception is obtained of a partially morphological determination of obtained connections rotated in the direction of diagonal structures (right arm – left leg). This indicates towards a significantly larger cohesion within the context of morphological determination than towards the type of stimulus.

**Table 2. The matrix of correlational coefficients of velocity of multilateral body parts in relation to light and sound stimulus**

VARIABLES	1	2	3	4	5	6	7	8
1. SSNLM	1.00							
2. SSRLM	.71	1.00						
3. SSNDM	.71	.54	1.00					
4. SSRDM	.67	.84	.58	1.00				
5. SZNLM	.20	.37	.49	.34	1.00			
6. SZRLM	.69	.73	.42	.66	.37	1.00		
7. SZNDM	.33	.41	.74	.42	.91	.45	1.00	
8. SZRDM	.53	.68	.53	.75	.69	.85	.72	1.00

Key (see Table 1)

It is significant to emphasize that a process which begins as light affects any given receptor (twigs and skittles) thus coming to highly complex processes which decompose photo-chemistry substance that impacts the membrane of the outer receptor segment, thus creating

receptor potential (signal hyperpolarisation). Its size is tantamount to the logarithm of light energy as opposed to other transformations that tend to be linear. Ganglionic cells continuously convey signals through optic nerve fibres to the brain in the form of action potential. Optic fibres re-plug within the corpus geniculatum laterale, from where they proceed as geniculocalcarine fibres through optic radiation or the geniculocalcarine tract to the primary optic shell in the calcarial area of the occipital lobe. The fibres of the optic nerve leave towards other cerebral areas (the suprachiasmatic nucleus, motor nucleus of the cerebral trunk, the hypothalamus, pretectal nucleus, upper colliculus, pulvinal, the thalamus area and the cerebral trunk).

The acoustic sensitivity is the basis of the sound perception as motivated by the mechanical vibration that transfers to the eardrum via airwaves and to endolymph fluid labyrinth through sound pits, and across it to sensory cells (Organ of Corti) situated in the cochlea, where mechanical vibrations are transformed into nervous excitement. Nervous excitement is carried out as a series of electrical impulses in one branch of the sound nerve into the elongated marrow, and from there through relay centres into the thalamus in the main auditory centres, which are located in the temple region of the cerebral cortex.

Starting out from the realization that the sensory receptor receives stimulus and conveys data in a minimal time interval between sequential answers, only a part of that time goes towards refractor time in central processes. That part of time is spent by the operator on deciding and organizing answers, which will immediately upon installing an adequate network be carried out without further participation of the willing operation. Actually, from the moment the answer is initiated, the operator can no longer stop it. The efficiency of that reaction time, or rather, the time of initiating an answer, is such that the time lag that significantly contributes towards the duration of creating an efferent signal and its transference to the effector is logged in the system. Thus, it is rational that these processes make up the basics for obtaining canonical correlation where the biggest contributor is the multilateral sensomotor reaction (the reaction of all parts combined). The stated process of transmission of impulse through afferent and efferent channels represents the functional basis for obtaining correlative relations within the space of sensomotor reactions.

Taken as a whole, the obtained results confirm the expected assumptions. That which in a way surprises are the low coefficients within the variable groups of multilateral body parts' reactions to sound stimulus. However, satisfactory and significant cohesion is noticeable within the variable group of multilateral body parts' reactions to light stimulus, and partly between two groups of treated variables. Significant cohesion within the group of multivariate body parts probably incurred as a result of simultaneous reactions of all default parts and mutual cerebral processes. The connection between the two stated spaces probably incurred as a result of the coherence process of separate and cooperative functions of cerebral hemispheres, which can produce multivariate reactions and clearly differentiated reactions. The results indicate that initiating stimulus for individual body segments, undoubtedly indicate the significance of clear preference of the lateralization of hemispheres. In addition, a larger, more direct, autonomous and automatic opportunity of utilizing the capacity of the canal is present, along with high efficacy of active effectors (what is provoked by completing the task with the presented right lateral structures). That incurred as the result of a life of right-handedness.

The cohesion between sensomotor reactions of multilateral body parts to light and sound stimulus is satisfactory. Sensomotor reactions of multilateral body parts towards light and sound stimulus can be explained by canonical relations with two canonical roots (table 3). The first canonical variable exhausts a considerably larger quantity of co-variabilities of analysed variable groups. The cohesion of the first latent variable of (0.96) which explains 92.20 % of



the variance of corresponding latent structures. A significant connection was affirmed at the P=0.00 level. The second canonical correlation that belongs to the second canonical factor has a somewhat lesser cohesion (0.79) with 62 % joint variance, at the level of significance P = 0.00.

**Table 3. Canon correlations, roots of the canonical equation and significance tests of canonical roots within the space of multilateral body parts at the light and sound stimulus**

	C2	C	L	X2	DF	P
1	.9220	.9602	.0129	63.079	16	.0000
2	.6156	.7846	.1653	26.097	9	.0020
3	.5276	.7264	.4301	12.234	4	.1157
4	.0895	.2992	.9105	1.360	1	.2435

Key C2 – eigenvalue; C – canonical correlation; L – Wilks lambda; X2 – Chi – square; DF – D. F.; P – sing. level

In the area of sensomotor reactions of multilateral body parts to light and sound stimulus that form the first pair of canonical variables, it can be noticed that the factor of reactions for multilateral body parts to sound stimulus is dominant, and that it represents the main generator of the joint variance. All variables of that space have significantly high projections, even though a slight curve is noticed towards the upper limbs (table 4).

**Table 4. Vectors of transformation into canonical variables (W) and canonical factors (F) isolated in the area of sensomotor reactions of multilateral body parts to light and sound stimulus**

VARIJABLE	W1	W2	F1	F2
1. SSNLM	-0.9097	0.1827	0.6670	-1.2731
2. SSRLM	-0.1565	0.0154	1.0787	1.6763
3. SSNDM	1.4198	-0.1040	0.2594	0.1429
4. SSRDM	0.0024	0.9179	-1.5740	-0.5946
1. SZNLM	-1.1546	-0.4905	0.5041	2.1363
2. SZRLM	-0.7563	0.0160	2.0819	0.0049
3. SZNDM	1.9609	0.0202	0.7179	-1.3607
4. SZRDM	0.1930	1.2459	-2.5687	-0.1930

Key (see Table 1); W1 - canonical variables; F1 -canonical factors

However, a group of variables of sensomotor reactions of multilateral body parts to light stimulus has significantly smaller orthogonal projections towards an isolated canonical dimension. Significant projections towards the isolated canonical dimension have reactions of the right hand, left arm and the largest left leg. A certain curve of the area of sensomotor reactions of multilateral body parts towards the upper extremities is significantly discernable.

The sensory impulse leads to a strong excitation of the reticular formation or the bulboreticular facilitating area (mesencephalic and upper pontine regions of the reticular formation). Although this is about different levels of cohesion within these two regions, the main generator of joint variance are probably those regulative mechanisms from which structuring and impulse conveyance through nerve channels is dependent on, when there is a reaction to various external stimuli, simultaneously with all body parts. That means that the organism reacts to the external stimulus as a whole regardless if it is only a reaction of an individual body part or the whole body.

### DISCUSSION

Sensomotor reactions incur under the influence of stimulus to sensors in the body, which reach their stimulus threshold and provoke a series of functional processes which give a certain physical answer. The sample subjects for this research list 20 subjects, of male gender, ranging from 20 to 22 years of age, a research of sensomotor reactions of multilateral and unilateral

body parts was conducted. The process of collecting data and setting parameters was conducted using an instrument called the KINESIOMETER (M. Dodig, 1987), hooked up to an electronic computer, with an adequate periphery, with application of program support for analogue – digital conversion in the programming language SIMON'S BASIC. In the space of sensomotor reactions of multilateral body parts to light and sound stimulus, it is discerned that the reaction factor of multilateral body parts to sound stimulus is dominant, and that it represents the main generator of the joint variance of the first pair of isolated canonical dimension. All variables of this space have significantly high projections, although a slight curve towards the upper limbs is discerned. The second pair of isolated canonical dimension for the most part belongs to the space of reactions of multilateral body parts to light stimulus. Efficient functioning of the perceptive system towards sound and light stimulus, emission signal speed from the receptor (channel permeability, efficiency of data decoding device and efficiency of data transmission), speed of synaptic signal transmission (number of synaptic connections and flow through synaptic barriers) as well as efficient functioning of commissural connections between hemispheres represents the basic reason for obtained results. The basic reason for variability and covariability within the reaction time to light and sound signal probably incurred as the answer to a joint mechanism for structuring and speed of transmission impulse through afferent and efferent channels. Thus, organism's sensomotor reactions aren't either the simple or elementary characteristic of the organism, regardless of the nature of simplicity. This ability is, firstly, just a special mode of functioning of the entire system of reaction regulation and control.

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# Canonical Relations of Sensomotor Reactions of Bilateral Body Parts

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## ABSTRACT

The research study was carried out on a sample of 20 subjects, of male gender, from 20 to 22 years of age. An analysis was carried out in the space of sensomotor reactions of bilateral (parallel, transversal, diagonal) body parts. The measuring of sensomotor reactions in bilateral body structures was developed through an especially constructed instrumentarium (Kinesiometer, M. Dodig, 1987). The obtained results have been processed by application of canonical correlational analysis (Cooley and Lohnes, 1971). Based on maximum cohesion between the pair of linear functions of variable groups that measured sensomotor reactions (transversal, parallel, diagonal) body parts, characteristic canonical roots were extracted. In the field of transversal - parallel reactions of body parts, one pair of characteristic canonical roots, which explained 85% of joint variance. In the field of parallel and diagonal body parts, two characteristic canonical roots were extracted, the first explaining 86%, while the second one 61% of joint variance. In the field of diagonal and transversal body parts, two characteristic canonical roots were extracted, the first explaining 90%, the second 72% of joint variance. The obtained results indicate a topological and functional dependency of sensomotor reactions of bilateral (transversal, parallel, and parallel) body parts. An efficiency of functioning of the emission signal speed and the speed of the synaptic transmission (the number of synaptic ties and flow through synaptic barriers), efficient functioning of commissural relations between the hemispheres and the efficiency of afferent and efferent paths directed towards sensomotor reactions of bilateral (transversal, parallel, and diagonal) body parts can probably be found at the basis of these indicators.

**Keywords:** *canonical correlational analysis, canonical relations, sensomotor reactions, bilateral (transversal, parallel, and diagonal) body parts*

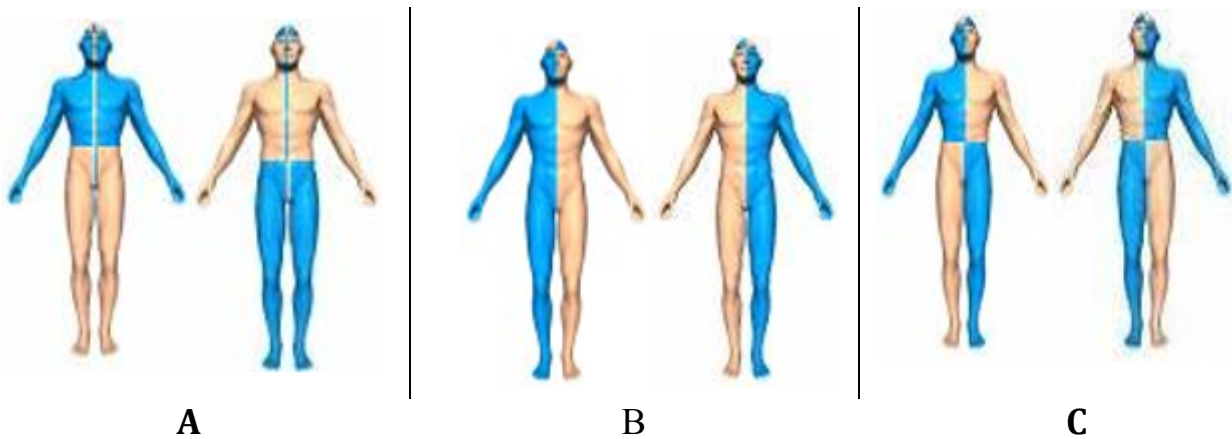
## INTRODUCTION

The diversity of human motion and motor tasks, which he solves with any given body part as well as with the whole body are realized through various sensomotor reactions. The sensomotor reaction of the organism in a set time frame starts with one receptor reaction and ends with a muscle response directed at overcoming a certain path [7],[14],[15]. Motor processes and constructions, such as the sensomotor reaction, velocity, and motion coordination and others can be tied to the functioning of certain cerebral parts [8],[9],[10]. Sensomotor reactions vary in space and time with different modalities of displayed motor reactions, what enables identification of different sensomotor reactions of bilateral body parts [13]. The central nervous system plays a significant role within this. It consists of hundreds and thousands of separate neuron groups, within the scope of interactions of two hemispheres and collaboration among the hemispheres determines one of the basic mechanisms which enables continuity and complexity [1],[2],[3],[6]. Namely, with simple tasks, the resources of one hemisphere are for the most part sufficient for its analysis, thus the dominant mode of analysis here is within the hemispheres [16]. Data transfer from one hemisphere to the other requires a certain time and energy, the hemispheric asymmetry uses unilateral presentation of

stimulus, while studies that utilize bilateral presentations can be used for a broader spectre of research [19]. In the case of unilateral stimulus, the stimulus incurs in just one field, that is, in one hemisphere, while the situation is somewhat more complex in the case of bilateral stimulus where stimuli incur simultaneously in two fields, that is, in two hemispheres. Namely, it is possible that differences in success of the two hemispheres reflect the differences in the efficacy of the hemispheres for analysis of certain data, but the effects of relations between hemispheres can also influence them. The functional feature of the bilateralization of sensomotor reactions allows for intermittent specialized cerebral mechanisms to develop, which often allow the selection of either left or right functions [4]. The human species separates this bilateral symmetry not only morphologically but functionally as well, what enables the application of a clearly differentiated evolved potential for solving sensomotor reactions by bilateral – transversal, parallel and diagonal body parts [17], [18], [20]. Numerous detached groups of fibres (afferent fibres) enter into these groups, while efferent fibres leave them [11]. Thus, the stimulus impulses are driven away from the senses via afferent neurons into different nerve centres, where transformation occurs and shifting to efferent neurons, which in turn come to the effector (muscle). Since sensomotor reactions of bilateral – transversal, parallel and diagonal body parts present a source of partial joint variability, and considering the explanation of the phenomenon of sensomotor reactions of bilateral body parts, a study was projected with the objective to research sensomotor reactions of bilateral – transversal, parallel and diagonal body parts.

## METHODS

The sample subjects for this research list 20 subjects, male, ranging from 20 to 22 years of age. The planned sample ensures a reliability factor of 0.95, that every correlational coefficient is equal to or larger than 0.42, considers different from zero. The process of collecting data and setting parameters was conducted using an instrument called the KINESIOMETER (M. Dodig, 1987), hooked up to an electronic computer, with an adequate periphery, with application of program support for analogue – digital conversion in the programming language SIMON'S BASIC. The instrumentarium uses 8 important analogue – digital converters (ADC) to which the kinesiometer and signal system were directly plugged into and synchronized with the measuring system. The kinesiometer latched to body joints ensured transference of analogue sizes of body part reactions, which transform from electrical signals to digital impulses via an analogue-digital converter. The signal light system is directly connected to the converter, which is synchronized with the measurement system that has a maximum precision measurement of  $2^{-8}$ , i.e. 256 parts of basic value. Measuring was conducted according to a specific program. The subject was situated in an adequate position with the attached instrumentarium and carried out certain reactions with motion. In this way obtaining significant data about the velocity of bilateral body parts is enabled. Measuring is conducted by way of an applied system for measuring in certain positions alongside solving various problems: (1) the subject is set on a background in a lying position on his back, with spread legs and arms next to his body to which kinesiometers are attached, (2) on a certain signal the subject exerts motion of arms and/or legs via transversal, parallel and diagonal body parts (picture 1).



**Picture 1. Schematic overview of determinateness of bilateral body parts (A - transversal, B - parallel, C - diagonal).**

In this way, groups of variables – data carriers of sensomotor reactions of bilateral (transversal, parallel, and diagonal) body parts – were isolated. Tests were marked with distinctive codes where the first two letters mark the space of sensomotor reaction (SR), the third letter marks the type of bilateral structure – transversal (T), parallel (P), and diagonal (D), the fourth and fifth letters the body part where the motion is realized, left leg (NL), left arm (RL), right leg (ND), right arm (RD).

- (1) The variables for sensomotor reaction evaluation of transversal body parts (left leg – right leg, left arm – right arm); 1. (SRTNL), 2. (SRTND), 3. (SRTRL), 4. (SRTRD)
- (2) The variables for sensomotor reaction evaluation of parallel body parts (left leg –left arm, right leg – right arm); 1. (SRPNL), 2. (SRPRL), 3. (SRPND), 4.(SRPRD)
- (3) The variables for sensomotor reaction evaluation of diagonal body parts (left leg – right arm, right leg – left arm); 1. (SRDNL), 2. (SRDRD), 3. (SRDND), 4. (SRDRL)

The relations between the sensomotor reactions of bilateral (transversal, parallel, and diagonal) body parts are analysed through the technique of canonical correlational analysis (Cooily and Lohnes, 1971). For identification of significant canonical dimensions in addition to the transformational coefficient vectors, vectors of correlational variables and canonical dimensions were also used. The standards pertaining to these vectors were treated as a measure of canonical dimensions. The number of significant dimensions was determined with the Bartlett method (Bartlett, 1974), where all those linked canonical correlations varying from zero with an inference reliability of 0.95 were considered significant.

## RESULTS

Based on obtained values of fundamental central and dispersive parameters of variables of sensomotor reactions of bilateral (transversal, parallel and diagonal) body parts. It can be confirmed that distribution of results in almost all variables does not significantly deviate from normal distribution. The results are displayed in Table 1. The dispersion of results in terms of arithmetic means indicates that derogation is lesser in all those variables of sensomotor reactions of bilateral body parts that tracked diagonal and transversal body reactions.

**Table 1. The central and dispersive parameters of the sensomotor reactions of bilateral (transversal, parallel, and diagonal) body parts.**

Variables:	XA	SIG	MIN	MAX
1. SRTNL	0.3083	0.0524	0.2237	0.3868
2. SRTND	0.3296	0.0676	0.2243	0.5103
3. SRTRL	0.2997	0.0573	0.1892	0.4054
4. SRTRD	0.2900	0.0737	0.1752	0.4776
5. SRPNL	0.3009	0.0571	0.2027	0.3971
6. SRPRL	0.3227	0.0497	0.2383	0.4205
7. SRPND	0.2939	0.0695	0.1425	0.3994
8. SRPRD	0.3048	0.0718	0.1612	0.4355
9. SRDNL	0.3004	0.0506	0.2149	0.3961
10. SRDRD	0.3180	0.0447	0.2359	0.4392
11. SRDND	0.2888	0.0460	0.1892	0.3621
12. SRDRL	0.2919	0.0603	0.1724	0.4124

Key: SRTNL-sensomotor reaction transversally left leg, SRTRL - sensomotor reaction transversally left arm, SRTND - sensomotor reaction transversally right leg, SRTRD - sensomotor reaction transversally right arm, SRPNL - sensomotor reaction parallel left leg, SRPRL - sensomotor reaction parallel left arm, SRPND - sensomotor reaction parallel right leg, SRPRD - sensomotor reaction parallel right arm, SRDNL - sensomotor reaction diagonal left leg, SRDRL - sensomotor reaction diagonal left arm, SRDND - sensomotor reaction diagonal right leg  
 XA - arithmetic mean  
 SIG - standard deviation  
 MIN - minimum  
 MAX - maximum

Cohesion of variables intended for measuring sensomotor reactions of bilateral (transversal, parallel and diagonal) body parts emit data that the area is homogeneous, what is an undoubted indicator of solid cohesion within the area. That is primarily in regard to sensomotor reactions that measured parallel and transversal structures, while the correlation coefficients within the context of sensomotor reactions of diagonal body parts are smaller (table 2).

**Table 2. The matrix of correlational coefficients of the sensomotor reactions of bilateral (transversal, parallel, and diagonal) body parts**

	1	2	3	4	5	6
1. SRTNL	1.00					
2. SRTND	.50	1.00				
3. SRTRL	.74	.44	1.00			
4. SRTRD	.51	.93	.51	1.00		
5. SRPNL	.59	.06	.31	.20	1.00	
6. SRPRL	.32	.22	.15	.26	.68	1.00
7. SRPND	.39	.11	.64	.24	.51	.45
8. SRPRD	.58	.27	.62	.44	.63	.65
9. SRDNL	.75	.16	.49	.23	.65	.37
10. SRDRD	.48	.36	.26	.32	.31	.55
11. SRDND	.39	.18	.71	.30	.36	.14
12. SRDRL	.59	.29	.60	.48	.43	.36
7. SRPND	1.00					
8. SRPRD	.84	1.00				
9. SRDNL	.37	.49	1.00			
10. SRDRD	.13	.41	.24	1.00		
11. SRDND	.66	.49	.17	.28	1.00	
12. SRDRL	.42	.65	.79	.20	.22	1.00

Key (see Table 1)

In general terms, the structure of the matrix of inter-correlation of variables indicates that the variables within the context of parallel and transversal body parts assemble within their groups, while it is somewhat weaker in the space of variables of diagonal body parts. A stronger cohesion in the space of parallel and transversal body parts, where the sensomotor reaction momentarily discriminates at the level of two cerebral processes that simultaneously occur in parallel and transversal body structures. While in the area of diagonal body parts, the sensomotor reaction discriminates in the moment at the level of two cerebral processes that occur in diagonal body structures. Thus, cerebral answers that simultaneously facilitate from the same stimulus represent the main reason of occurred connections within these spaces. Taking into consideration, the obtained results confirm the expected assumptions, what comes as a surprise, as these are low correlation coefficients within the group of variables of diagonal body part reactions. However, within the group of variables, which measured parallel, transversal and diagonal reactions, satisfactory and significant cohesion is discernable. A stronger cohesion is clearly visible within the group of variables that measured diagonal reactions with a group of variables that measured parallel and transversal reactions, as opposed to within their own variable group.

Significant cohesion within a group of bilateral body parts probably incurred as a result of simultaneous reactions of all set parts and mutual cerebral processes. The cohesion between the stated space probably incurred as a result of the process of coherence of separate and cooperative functions of the cerebral hemispheres, which can produce multivariant reactions. The results indicate that low cohesion within the context of diagonal reactions where initiating diagonal stimuli for certain body segments is dominant, undoubtedly indicating the importance of a clear preference for hemisphere lateralization. In addition, also present is a larger direct, autonomous and automatic possibility of utilizing parallel and transversal channels and good organization of active effectors (what is provoked by completing the task presented by the right lateral structures). This incurred as a consequence of life determination to right-handedness.

**Canonical Relations of Sensomotor Reactions of Transversal and Parallel Body Parts**

The canonical correlational analysis of the variable group of sensomotor reactions of transversal and parallel body parts indicates that out of four canonical roots, one is sufficient to explain the relations between the stated groupations (table 3). The canonical correlation of the first pair of canonical dimensions isolated from the variable groupation amounts to 0.92 with 85 % extracted joint variance. The obtained results indicate a significance level of P = 0.00.

**Table 3. The canonical correlations, the roots of the canonical equation and tests of significance of canonical roots in areas of sensomotor reactions of parallel and transversal body parts**

	C2	C	L	X2	DF	P
1	.8531	.9236	.0547	42.136	16	.0004
2	.5476	.7400	.3724	14.322	9	.1113
3	.1632	.4040	.8232	2.820	4	.5883
4	.0162	.1273	.9838	.237	1	.6264

Legend: C2 – eigenvalue; C – canonical correlation; L – Wilks lambda; X2 – Chi – square; DF – D. F.; P – sing. level

In the space of sensomotor reactions of transversal body parts the first canonical dimension is defined in the space of sensomotor reactions by the right arm and right leg, with a negative algebraic sign (table 4).



**Table 4. The vectors of transformation into canonical variables (W) and canonical factors (F) are isolated in the area of sensomotor reactions of transversal and parallel and body parts**

	W1	F1
1. SRTNL	1.04996	-0.46182
2. SRTRL	-1.73657 0.21883	
3. SRTND	-0.36976-0.13316	
4. SRTRD	1.65400	0.97839
5. SRPNL	0.87879	-1.06422
6. SRPRL	-0.69019 0.53783	
7. SRPND	-0.77681-0.96536	
8. SRPRD	1.24233	1.48241

Key (see Table 1), W1 - canonical variables, F1 - canonical factors

While it is in the area of sensomotor reactions of parallel body parts, the first canonical dimension is defined by the left and right arm and left and right leg with a negative algebraic sign.

**Canonical Relations of Sensomotor Reactions of Parallel and Diagonal Body Parts**

The canonical correlation analysis of the variable group of sensomotor reactions of parallel and diagonal body parts, indicates that out of four canonical roots, two are sufficient to explain the relations between the stated groupations (table 5). The canonical correlation of the first pair of canonical dimensions isolated from the variable groupation amounts to 0.93 with 86% extracted joint variance. The second canonical correlation that belongs to the second canonical factor has a somewhat lesser cohesion (0.85) with 72 % of joint variance. The second canonical correlation that belongs to the second canonical factor has a somewhat lesser cohesion (0.78) with 61% of joint variance, at a significance level of P = 0.01.

**Table 5. Canonical correlations, roots of the canonical equation and significance tests of canonical roots in the area of sensomotor reactions of parallel and diagonal body parts**

	C2	C	L	X2	DF	P
1	.8647	.9299	.0311	50.329	16	.0000
2	.6104	.7813	.2298	21.325	9	.0113
3	.3701	.6084	.5897	7.657	4	.1050
4	.0637	.2524	.9363	.955	1	.3285

Legend (see Table 3)

The first canonical dimension in the area of sensomotor reactions of parallel body parts is defined by the left and right leg, with a negative algebraic sign. In the area of sensomotor reactions with diagonal body parts, the first canonical dimension is defined by the left leg and right hand, with a negative algebraic sign (table 6).

**Table 6. The vectors of transformation into canonical variables (W) and canonical factors (F) are isolated in the area of sensomotor reactions of parallel and diagonal body parts**

	W1	W2	F1	F2
1. SRPNL	0.8669	-0.2398	0.9721	0.6089
2. SRPRL	-0.6211	0.2779	0.3713	-1.3121
3. SRPND	1.2948	0.1467	-0.5445	-1.2445
4. SRPRD	-1.3128	-1.1301	-0.4471	1.3262
5. SRDNL	0.9666	-0.0183	1.3074	0.1694
6. SRDRL	-0.7120	-0.1961	0.4271	-0.6343
7. SRDND	0.7075	-0.4368	-0.4251	-0.4980
8. SRDRD	-0.9374	-0.7126	-0.9739	0.5800

Key (see Table 1, 4)

The second canonical dimension in the area of sensomotor reactions of parallel body parts is defined by all body parts, from which the left arm and right leg have a negative algebraic sign.

In the area of sensomotor reactions with diagonal body parts, significant projections towards the second canonical dimension has reactions with the right arm and left arm, and left arm and left leg with a negative algebraic sign.

**Canonical Relations of Sensomotor Reactions of Diagonal and Transversal Body Parts**

The canonical correlation analysis of the variable group of sensomotor reactions of transversal and parallel body parts, indicates that out of four canonical roots, two are sufficient to explain the relations between the stated groupations (table 7). The canonical correlation of the first pair of canonical dimensions isolated from the variable group amounts to 0.95 with 90% of extracted joint variance. Obtained results display a significance level of P = 0.00. The second canonical dimension that belongs to the second factor has a somewhat weaker cohesion (0.85) with 72% of joint variance on a significance level of P = 0.01.

**Table 7. Canonical correlations, roots of canonical equation and significance tests of canonical roots in the area of sensomotor reactions of diagonal and transversal body parts**

	C2	C	L	X2	DF	P
1	.9032	.9504	.0199	56.783	16	.0000
2	.7217	.8495	.2058	22.920	9	.0064
3	.2043	.4520	.7397	4.372	4	.3580
4	.0704	.2653	.9296	1.059	1	.3035

Key (see Table 3)

In the area of sensomotor reactions of diagonal body parts the first canonical dimension is defined by the sensomotor reactions of all body parts, from which the left leg and right leg have a negative algebraic sign. In the area of sensomotor reactions with transversal body parts, the first canonical dimension is defined by the right arm and right leg and left arm with a negative algebraic sign (table 8).

**Table 8. Vectors of transformation in canonical variables (W) and canonical factors (F) isolated in the area of sensomotor reactions of diagonal and transversal body parts**

	W1	W2	F1	F2
1. SRDNL	-0.7553	1.1590	-0.7987	0.3479
2. SRDRL	-0.2505	0.2996	0.6336	-0.7591
3. SRDND	0.6720	0.1131	-0.7076	-0.3939
4. SRDRD	1.0857	-0.4315	1.0884	0.3490
5. SRTNL	-0.6274	1.2639	0.3531	0.5082
6. SRTRL	-1.2855	-0.0988	-0.5221	-2.3753
7. SRTND	0.9747	-0.2100	-0.9914	-0.6377
8. SRTRD	1.5125	-0.2313	1.5304	1.8361

Key (see Table 1, 4)

The second canonical dimension in the area of sensomotor reactions of diagonal body parts is defined only by the left arm. In the area of sensomotor reactions of transversal body parts, reactions of the right arm and left leg and left arm and right leg with a negative algebraic sign have significant projections on the second canonical dimension. The obtained canonical dimensions undoubtedly indicate the significance of the process of coherence of separate and cooperative functions of bilateral cerebral determinations that can produce clearly differentiated sensomotor reactions of bilateral body parts. In addition to certain similarities within sensomotor reactions of bilateral body parts, a clear preference of transversal and parallel body parts is manifest as well as the prevalence of upper limbs. Starting out from the realization that the sensory receptor receives stimulus and conveys data in a minimal time interval between sequential answers, only a part of that time goes towards refractor time in central processes. The operator spends this time on deciding and organizing answers, which

will immediately upon installing an adequate network be carried out without further participation of the willing operation. Actually, from the moment the answer is initiated, the operator can no longer stop it. The efficiency of that reaction time, or rather, the time of initiating an answer, is such that the time lag that significantly contributes towards the duration of creating an efferent signal and its transference to the effector is logged in the system. According to the obtained correlation coefficients, it seems that the mechanism of commissural connections between the cerebrum hemisphere cortex and the contractions of the agonist, antagonist and synergic tonus regulation are more pronounced within diagonal body parts, than within transversal and parallel body where the process is more effective. Thus, for the sensomotor reactions of bilateral body parts, for whose variability and covariability the responsibility is borne by a mechanism for regulation of stimuli that are led away from the sensor by way of sensory afferent neurons into adequate centres, where transformation occurs as well as transposition to efferent neurons. Stimuli that come to the integration effector of bilateral reactions form ideomotorical structures and control of the processes of refferentation and alternative muscle innervation. Thus, it is logical that these processes comprise the basis for obtaining canonical correlations to which sensomotor reactions of bilateral body parts contribute the most. The stated processes of impulse transmission through afferent and efferent channels represents the functional basis for obtaining correlative relations within the field of sensomotor reactions of bilateral body parts.

### DISCUSSION

The research was carried out with the goal to affirm a part of the entire variability separated by the sensomotor reactions of bilateral (transversal, parallel, diagonal) body parts. The research study was conducted on a sample of 20 subjects, of male gender, ranging from 20 to 22 years of age. The process of collecting data and setting parameters was conducted by using an instrument called the KINESIOMETER (M. Dodig, 1987.), hooked up to an electronic computer, with an adequate periphery, with application of program support for analogue – digital conversion in the programming language SIMON'S BASIC, which enabled an analogue – digital conversion of results. Data about sensomotor reactions of bilateral (transversal, parallel, diagonal) body parts was obtained through measuring. The relations between the velocity of bilateral body parts were analysed and affirmed via the technique of canonical correlational analysis (Coolly and Lohnes, 1971). Based on maximum cohesion between the pair of linear functions two groups of variables that are in the are of sensomotor reactions of transversal and parallel body parts, one characteristic canonical root was extracted which explained 85% of the joint variance. Two pairs of characteristic canonical roots were extracted in the area of parallel lateralization, the first explaining 90%, the second 72% of joint variance. In the area of sensomotor reactions of diagonal and transversal and parallel body parts, two pairs of characteristic canonical roots were extracted, the first explaining 86%, the second 61% of joint variance. The obtained results indicate a topological and functional dependency of sensomotor reactions of bilateral (transversal, parallel, and parallel) body parts. An efficiency of functioning of the emission signal speed and the speed of the synaptic transmission (the number of synaptic ties and flow through synaptic barriers), efficient functioning of commissural relations between the hemispheres and the efficiency of afferent and efferent paths directed towards sensomotor reactions of bilateral (transversal, parallel, and diagonal) body parts can probably be found at the basis of these indicators. Thus, a mechanism for bilateral impulse regulation, forming ideomotor structures and the control of the refferentation process and alternative muscle innervation, is responsible for the variability and co-variability of sensomotor reactions of bilateral body parts.

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# Art and Design Pedagogy for Tomorrow's Lifelong Learners

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## ABSTRACT

Globalisation, the knowledge economy, and advances in technologies have changed the way we live and work. They demand a new generation of graduates who can adapt to the new and constantly changing environment and yet remain competitive. This paper argues that educators need to examine the traditional ways of teaching and of producing knowledge expertise. The urgent demand now is for knowledge inquirers and creators, and self-directed lifelong learners. Using case studies of two art and design general electives, this paper examines the pedagogical role of art and design in nurturing lifelong learning skills. Based on student responses to learning and teacher observations, the result is positive. The pedagogical approaches described in this study can serve as a model for general studies education to nurture lifelong learning skills and to raise the standard of design literacy in nondesign students.

**Keywords:** *Lifelong learning skills, art and design pedagogy, collaborative learning, general education.*

## INTRODUCTION

Globalisation, the knowledge economy, and advances in technologies have changed the way we live and work. They demand a new generation of graduates who can adapt to the new and constantly changing environment and yet remain competitive. Today's graduates are increasingly tasked with solving tomorrow's problems that are multifaceted in nature. These problems also need new skills and knowledge beyond their traditional areas of competence. To be successful and sustain value in the global community, graduates need to continue to learn throughout their lifetime [1], [2]. Educators need to examine their traditional way of teaching [3], [4] and of producing knowledge expertise. The urgent demand now is for knowledge inquirers and creators, and self-directed lifelong learners. Education today is about "preparing students for the test of life, not a life of tests" [5]. This paper examines effective pedagogical practices that nurture lifelong learners for the twenty-first century's global community. In particular, art and design based approaches to teaching and learning were used in this study to encourage and gain essential life skills. Lessons were drawn from two art and design courses offered as general studies electives at Nanyang Technological University (NTU), Singapore.

## LITERATURE REVIEW

Globalisation and advances in new technologies have created a competitive world. They have caused many nations to value and invest in their intellectual capital to sustain their knowledge economy. Traditional education that stresses creating knowledge expertise is no longer sufficient to meet the challenges of the fast changing environment. Often, when the students graduate, much of their knowledge learned has become obsolete. In the fast changing world, graduates are often tasked with solving tomorrow's problems. These problems are multifaceted in nature and require multidisciplinary approaches [6]. This calls for adaptation, lifelong learning of knowledge and new skills, and new ways of creative thinking [7] for graduates to remain competitive and to break new ground. The urgent task facing educators

today is to re-examine and re-evaluate their pedagogical approaches to teaching and learning to nurture lifelong learning skills for tomorrow's self-directed lifelong learners, knowledge inquirers and creators. As far back as in 1916, Dewey's *Democracy and Education* called for a curriculum centred on lifelong learning with the goal of personal, intellectual, and social development of each child in preparation for a successful life [8]. Jean Piaget (1963) described intellectual development as a continuing construction of knowledge, the process being one of continual adaptation [9]. Like Piaget, Merryl Goldberg (2012) believed that "intellectual development is a non-ending, continuous, and lifelong process" [9]. Contemporary studies in education, psychology, and economics have done much to address the need to help children become lifelong learners to live productive lives in the twenty-first century. One common link among these researches is the call for change in education because of globalisation [8]. Other studies that supported the need to nurture our students to be lifelong learners in the rapidly changing global world are also evident [10]-[12].

Contemporary lifelong learning theory which has its roots in the constructivist theory of learning, describes learning as continuous throughout life. This includes informal and formal education, is self-directed, intentional, relational, and transformative [2]. Dewey, Piaget and Vygotsky believed lifelong learners construct knowledge for themselves both as individuals and in social contexts and that making meaning is learning [8]. Researchers at University of Bristol in England identified seven dimensions of learning called the Effective Lifelong Learning Inventory (ELLI). These are: (a) changing and learning; (b) meaning making; (c) critical curiosity; (d) creativity; (e) learning relationships; (f) strategic awareness; and (g) resilience [13]. These are dispositions, values and attitudes necessary for lifelong learning and require learners to be self-directed and to take responsibility for their own learning [2]. Tony Wagner (2008), co-director of the Change Leadership Group at Harvard Graduate School of Education, urged educators to help student master seven survival skills to enable them to become productive citizens in the twenty-first century. They are: (a) critical thinking and problem solving; (b) collaboration and leadership; (c) agility and adaptability; (d) initiative and entrepreneurialism; (e) effective oral and written communication; (f) accessing and analysing information; and (g) curiosity and imagination [14]. Though the terms used by the two studies are different, much common ground can be observed. Examples include: (a) critical curiosity and creativity versus curiosity and imagination; (b) learning relationships versus collaboration; (c) changing and learning, and resilience versus agility and adaptability; (d) meaning making versus accessing and analysing information. Similar skills are highlighted as competencies in the P21 Framework for 21st Century Learning. There is already movement towards incorporating such attributes nationwide as college and career readiness in the United States. They are critical thinking, communication, collaboration and creativity, listed under learning and innovation skills [15]. Other skills highlighted are flexibility and adaptability; and initiative and self-direction.

### **Art Education as Pedagogical Role**

In several studies on art education as a pedagogical role to help teaching and learning across disciplines, art was proposed as a form of inquiry for discovery, creation and enlargement of knowledge [16]-[18]. According to the constructivist theory of learning, knowledge is dependent on finding meaning through the experience of the learner or community of learners [8]. Similarly, making meaning from art experience has long been acknowledged as a principle premise in art education [19]. When individuals explore and engage in a group in art making, multiple forms of meaning making can result when thoughts and actions are expressed visually [19]. In using the arts for intellectual development, Merryl Goldberg (2012), author of *Arts Integration*, aimed to engage students in thoughtful inquiry and reflective questioning. To that end, she was convinced that "the art form provides a method that enables each student to

represent and translate an idea...The act of translating requires students to work with ideas as opposed to absorbing them" [9]. She believed "what the artist does through artistic activity is what emancipatory educators encourage: critical, reflective, and creative thinking in the context of society, coupled with expression" [9]. To Sullivan, the action to reflect visually and verbally during art making allows one to learn to think, feel and form skills that are central to sustained learning [19]. Barkan (1960) in his book, *Through Art to Creativity*, recorded conversations of effective teachers. They showed how teacher could play a dominant role as questioner and guide to encourage students to think, visualise, talk and reflect on what was learned. At the same time, teacher also influenced students' artistic development and creativity [20]. Studies in art classroom as a community of discourse have found that it is not much different from that of other disciplines [21]. Theoretically, the arts may place more emphasis on weaning students away from teacher control and towards independent thinking [20]. As one shares one's reflection in class, this forms a personal critique that enriches one's art learning experiences. When the whole class and community engage in critical discourse, the multiple perspectives brought in strengthen deeper learning. Deeper meaning is also generated through discourse [22]. Art learning done collaboratively would allow unique contribution from each learner to the learning community, especially if the learners come from different disciplines and background [6].

The realization that art education can nurture creativity has been around for a century. In 1982, Timberlake provided fifteen ways to cultivate creativity in the classroom and steps toward implementation of art education for creativity [23]. Goldberg (2012) in her book *Arts Integration*, wrote "When creativity takes centre stage in a classroom, members of the learning community can be transformed and inspired to develop many wonderful ideas, inventions, and solutions" [9]. Research by Anna Reid and Ian Solomonides (2007) on design students' experience of engagement and creativity showed that design students were better able to engage with their studies and to work creatively when they developed a robust "Sense of Being". This "Sense of Being" underlined their confidence, happiness, imagination and self-knowledge [24]. It was central to their other experiences like ability to solve design problems; capacity to change their way of thinking and working when the context changed; and became personally transformed into designers [24]. This transformative learning, being the highest learning, is "deeply engaging and touches and changes deep levels of values and belief through a process of realization and re-cognition...It is essential for lifelong learning" [2].

### **ART AND DESIGN PEDAGOGICAL APPROACHES TO LIFELONG LEARNING SKILLS**

This paper studies two of the visual art and design courses offered by the School of Art, Design Media at NTU as general studies electives for all the undergraduates at the University. One of these is a lecture-cum-tutorial based course with a maximum enrolment of 50 students. The course objective was to introduce visual literacy to the students. The other is a studio-based course with a maximum enrolment of 21 students. The course objective was to introduce creative thinking to solve design problems. Students in these courses had little or no background in art and design. They came from different disciplines including Engineering, Science, Business, Humanities, and Communication. The students met once a week for three hours during a 13-week semester. The courses were designed to nurture student-centred lifelong learning skills while learning the media of visual art and design. The teacher played a major role in creating a conducive learner-centric environment. Using collaborative learning, the teacher encouraged meaning making, knowledge construction, critical thinking and creative problem solving. Students were guided to communicate effectively, and to reflect on their learning. In both courses, the teacher (who is also the author of this paper) first introduced the theories and principles of design. After which students formed into small groups to solve design problems in class exercises and group projects, followed by



presentations and class critiques. Students in the studio-based course had more time and space to make use of the different ways to think creatively to unlock visual imagination. At the end of four semesters, a random sample of 90 reports of student feedback on teaching and learning, typical comments from students' reflections on learning and teacher observations were collated. The aim was to understand student responses to learning and to enable improvement on the pedagogical approaches used to nurture student-centred lifelong learning.

## Method

Students in these courses were first introduced the theories and principles of design. They learned to perceive the design elements and were guided to make their own meaning and interpretation. This was done by the teacher framing quality questions to engage students [25] to probe students' perceptions while scaffolding student's thinking and understanding according to their responses to the questions. As David Perkins (1992) put it, "...quality questioning is the primary catalyst for student thinking and learning" [26]. The classroom environment was created to be conducive to nurture learners' interests and deep learning. It was intended to be safe and friendly where meaning making was shared and multiple perspectives were valued and encouraged. Every student in the classroom was encouraged and motivated to contribute as a member of a learning community in constructing knowledge. The aim was to build student ownership and responsibility in learning – "a shift from teacher control of student learning to a partnership approach..." [26]. This learner-centric pedagogical approach was again stressed and further developed when students collaborated in group projects and in class critique.

When students collaborated in small groups (5 in a group in the class of 50; 3 in a group in the class of 21), they were given the opportunity to work with students from different disciplines, backgrounds and experiences. They were also given a glimpse of the real world by having to work with people who have different working styles, personalities and talents. They learned how to use their interpersonal communication skills effectively to help them negotiate ideas, support or lead members to reach a common goal. They had much opportunity to apply the various group brainstorming and creative thinking techniques they learned to produce multiple creative ideas. They learned to analyse these ideas, and to explore, evaluate and arrive at the best idea as a group [27]. This facilitated group creativity from multiple perspectives.

Collaborative group work promoted students' interdependence. Each student was responsible to contribute to the group while also being dependent on the contributions of other members for the group's overall success. There was individual as well as group accountability [28]. Students were also required to do research and to come up with a topic for their group project. This further increased their group responsibility as they took responsibility and control in learning that was self-directed [29], [2].

Bosworth (1994) identified five basic skills needed for learners to engage effectively in collaborative learning. They are interpersonal skills, group management skills, inquiry skills, conflict resolution skills, synthesis and presentation skills [30]. To increase the benefits of collaborative learning, students were briefed on group etiquette. They were also reminded them to uphold a positive mood constantly to avoid conflicts and chaos which could hamper the creative process. They were encouraged to socialise, interact and get to know one another before they started their group work. Most importantly, they were encouraged to have fun while they worked. This helped to generate and sustain students' interest in their learning. Also, it is often when students have fun and enjoy one another's company that crazy ideas emerge. These crazy ideas are often the seeds that flourish into creative fruitful solutions later.

During this creative process of collaborative learning, students learned how they could benefit

from each other's talent, and improve their own skills in critical and creative thinking, problem-solving, adaptability, and design. At the same time, they learned to have fun and make new friends. Meanwhile, the teacher provided space and guidance while encouraging them to take responsibility in their own learning and in their creative endeavours [31], [32]. Students were encouraged to be resilient in exploring their creative solutions and not to settle for the first good idea they arrived at. The teacher made known to the students the learning objectives with emphasis on the learning process [33], [32]. The assessment criteria were also made known so students understood the path to achieve their learning goal [28]. The assessment included individual performance, individual contribution to the group and the result of the group work to encourage maximum participation. During the learning and creative process, the teacher provided timely feedback and evaluation to help students further their learning [33]. These interactions between the teacher and students, and between peers in a group opened opportunities to nurture adaptability and to learn to view from others' perspectives [34]. This helped to further strengthen individual creativity and group creativity.

During project presentations and class critiques, students learned better ways to communicate visually and verbally. As they assessed, evaluated and reflected on the works of their own group and their peers' in a constructive manner, learning and self-improvement often took place (Weimer, 2002). Each student was also responsible to give a written individual report on the group project and self-reflection on learning. This aimed at improving their lifelong learning skills in written communication.

## **DATA AND ANALYSIS**

At the end of four semesters, a random sample of 90 reports of student feedback on teaching and learning, typical comments from students' reflections on learning and teacher observations were collated. The aim is to gain further insights into the learning process and learning results of the students in these two courses. Please refer to Appendix A for the results of student feedback. Summary of student feedback results and typical self-reflections are categorised under the following headings to understand the students' experience in the courses.

### **Meaning Making and Construction of Knowledge in a Community of Learners**

Based on their feedback, 92% of the students expressed positive learning experiences both in a class of learners and in small groups. Examples of their comments are:

"This course has taught me various design elements I can now apply to my work. The brainstorming and creative thinking techniques provide me a firm foundation to build my design on." "My background is in Business and Engineering. Almost everything I did in this course has been a new experience for me. It has taught me how to think more freely and creatively. The new knowledge gained will definitely help me in the future. I now also understand how designers think and solve design problems." "This course has opened my eyes to a whole new world of graphic art where I begin to notice things I never noticed before. Weekly exercises reinforced the lectures and helped me apply what I learned." "Our teacher invokes critical thinking by asking the class questions and interpretations of the graphics." "Our teacher engages the class in discussion, welcomes all our opinions, and asks us questions throughout the lecture to make sure we can all learn from one another."

### **Collaborative Learning**

When students collaborated, nearly 80% reported positive experiences. The challenges some of them faced turned out to be beneficial to them.

### **Self and group learning accountability.**

Nearly 90% learned from each other and contributed to the group. Some of their comments are:

*"I taught my group members some basic techniques on Adobe Illustrator. It was a great experience to teach them because I never thought I was good enough to teach others. In the end, we complement one another well... It turns out even if I were the "expert" in the beginning, I ended learning a lot from them too. .. Everyone contributed equally in different ways, making it possible for us to improve constantly our sketches and finally, producing work that we are all extremely satisfied with." "From the start, we had a shared desire to achieve a high standard result... our main strength was our commitment to working in close collaboration. We scheduled regular meetings, conversed online and mobile application continuously throughout the project. We critiqued each other's inputs, and further developed each other's ideas and work."*

### **Interpersonal communication skills.**

68% perceived improvement in expressing themselves and understanding others. One of their comments is:

*"As a junior, I was trying to make my voice heard in the group. It was a struggle for me to break past my early shyness and the intimidation of the other senior members in the group who seemed hesitant initially to consider the opinions of others. However, I am proud to say I have overcome this problem, learning to put my foot down and making sure my views were not drowned out. I daresay this is a valuable lesson that I have taken away from this project."*

### **Group management, conflict resolution skills, adaptability, and empathy.**

Nearly 80% self-managed their group so that the project could progress as scheduled. They also resolved conflict in the process. Some of their comments are:

*"We have different working styles and knowledge in design. Germaine studies Psychology and Georgina Accountancy. We got a huge variety of ideas and different viewpoints. This led us to improve our design because we have different views and experience...felt like a real design team in a professional setting." "We had trouble coordinating meetings as we had different schedules and multiple deadlines due at the same time. We tried our best to comply with one another and by the end of the semester, I felt I was better at time management." "We have been friends and felt comfortable working together. However, creative differences still arose. .. These differences were solved through compromise and placing ourselves in the other person's shoes." "When we had conflict in our ideas, we tried to resolve them, and came up with even better ideas to further improve our works. Working with my teammates helped me learn from them and as soon as I familiarised myself with their working styles, it was a breeze. This course not only taught me creative ways of thinking in design, but also allowed me to meet new friends and forge new friendships!"*

### **Critical and creative thinking problem solving skills.**

82% learned to be critical in solving design problems and used the critical thinking skills during group work. Examples of their comments are:

*"I appreciate my team for being so open to ideas regardless how absurd they may sound. The final design would not have been possible if the team did not work collaboratively." "We were so comfortable around one another that we spoke our mind, without fear of looking 'stupid'. It is through this openness that most of our once 'stupid' ideas were transformed into 'awesome' ideas."*

## **Visual, Verbal, and Written Communication Skills**

Based on the students' comments and teacher assessment, improvement in these areas could be noticed. Some of the students' comments are:

*"It was a challenge to communicate my ideas during group discussion especially when I disagreed with the others. But I gradually learned to respond to the ideas of others and put across my comments in a diplomatic way in order not to discourage my teammates." "Working with someone not strong in the language gave me a unique challenge. Despite the language barrier, we managed to communicate and even exchanged ideas through drawing and sometimes even hand signs."*

## **Resilience**

The majority worked hard and continued their effort in improving their designs. Examples of their comments are:

*"As a group, I would say we have progressed a lot within a short period of 13 weeks. We went through awkward meetings in the beginning, to being disappointed for not able to come up with a design proper even after weeks of effort. In the end, we finally got the hang of working together, coming up with great ideas and constantly improving our designs together." "All 5 of us are not familiar with designing. We put in much effort and improved our designs again, again and again. Looking at our final product, working all-night just worth it."*

## **Reflection and Self-improvement**

Examples of some students' overall experiences are as follows:

*"This learning journey has motivated me to want to know more about art and design. Attending class was always fun as there was no right or wrong answer and ideas had no limit. Teacher encouraged me to think out of the box and link unrelated ideas together which thrilled me. I now have a sense of confidence that I can solve design problems." "When I go back to my country, I'll push myself to achieve more - like how people work here." "Tree gifting is a very novel idea and there are endless possibilities to market this product. After we graduate, we may consider venturing into this market." "... Enjoyable experience ... explored my creative side that I didn't know I had." "...To be creative can change life and even world."*

## **Teacher (Author) Observations**

When students collaborated in small groups, there was good sharing of ideas when members clicked well and had fun working together. They self-managed their own group for a common goal and made use of the different talents in the group. Most explored their ideas and improved their designs tirelessly until they were satisfied with their results. Most would apply what they learned and gain better perspective in viewing and evaluating designs. When the occasional conflict occurred, such as differences in opinions, working styles and communication problems, there were "high levels of tensions and frustrations". Usually, the group would try to resolve these on their own. In rare occasions, they seek teacher's help. Through these challenges, most recognised the contributions of others and realised the "final product would not have been possible without any of the three of us." They also realised if one member disengaged, the morale of the group was affected. The opposite applies. If one member was strongly motivated, the others would be 'pushed' to achieve the goal.

During critique, students realised their design solutions could be further improved after receiving critical comments from others. They also learned a design problem has multiple possible solutions. They understood having curiosity to learn, thinking critically and creatively as well as continuous exploration enabled them to get the best result. With encouragement

and guidance from the teacher, students became more vocal and critical in analysing their own design works as well as those of others. The majority enjoyed their learning and believed their experience in the course had enriched them for their future careers and in their lifelong learning approaches. Their ignited interest in art and design can also motivate them to continue learning and creating.

## CONCLUSION

This paper calls for an urgent need for educators to examine their conventional way of teaching. With the rapid pace of globalisation, the arrival of the knowledge economy as well as advances in technology, there is urgent need for today's graduates to be ready to solve tomorrow's problems. These problems are multifaceted in nature and need multidisciplinary approaches. Graduates need to have inquiring minds and have the interest and motivation to continue to learn as knowledge will change even more rapidly in future. This paper presents the results of pedagogical practices which have been found through students' experience to be effective in nurturing lifelong learners. In particular, two art and design general studies elective courses that encouraged and inculcated essential life skills were used as case studies. These lifelong learning skills incorporated into the pedagogical approaches were:

- (a) *Meaning making and construction of knowledge in a community of learners;*
- (b) *Visual, verbal, and written communication skills; and*
- (c) *Resilience.*

In addition, collaborative learning to encourage – (a) self and group learning accountability, (b) interpersonal communication skills, (c) group management, (d) conflict resolution skills, (e) adaptability, (f) empathy, (g) critical and creative thinking problem solving skills were also employed. Finally, skills on reflection and self-improvement were inculcated.

Based on the students' feedback, their self-reflection reports and teacher observations, the findings are positive and encouraging. Most learned to construct knowledge through discourse in class and in small groups. While collaborating, the majority learned to think creatively and critically in problem solving. At the same time, they benefited from one another's talent and learned to recognize and appreciate the diversity of views and experiences others brought in. Although some admitted that it needed effort to resolve differences like conflicts in ideas, communication problems, and different working styles, nearly all benefited from their experience. The students felt that they have learned to adapt, to have empathy, and resilience. They also have improved their communication skills. To achieve a common goal, most learned to understand that everyone in the group must contribute, encourage and help one another. The majority enjoyed their learning which most felt had ignited an interest in them, in particular, to solve art and design problems. This interest and the satisfaction they had from their creation of design works would likely motivate them to continue to learn in future. A few felt being transformed into designers as they went through the design stages creatively. These two case studies show that an art and design pedagogical approach can be well suited to nurture lifelong learning skills even in non-design students. With the positive results obtained, these two courses can serve as a model for general studies education to nurture lifelong learning skills and to raise the standard of design literacy in non-design students. Follow-up studies on how these students apply their new skills in their future careers will be valuable.

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## APPENDIX A

### Student feedback on teaching and collaborative learning

	<b>Meaning Making &amp; Construction of Knowledge in a Community of Learners</b> <b>Criteria for consideration</b>	<b>Total Responses</b>	<b>Mean</b>	<b>Strongly Agree (5)</b>	<b>Agree (4)</b>	<b>Neutral (3)</b>	<b>Disagree (2)</b>	<b>Strongly Disagree (1)</b>
1	<b>Encouraged engagement in the course</b> As a result of the teaching approaches taken by this faculty member, I was involved & interested in the course.	90	45.8 (91.6%)	52	38	0	0	0
2	<b>Communicated clearly</b> This faculty member was easy to understand in all forms of communication.	90	45.4 (90.8%)	49	41	0	0	0
3	<b>Was approachable</b> This faculty member created opportunities, either in classes, or outside classes, for students to ask questions & seek help.	90	44.6 (89.2%)	51	29	10	0	0
4	<b>Helped students understand important concepts</b> This faculty member took steps to ensure that I understood how the subject matter of the course is framed by principles or concepts, or how the details fit together into concepts.	90	46.7 (93.4%)	60	30	0	0	0
5	<b>Encouraged critical thinking in the subject area</b> The teaching approaches of this faculty member encouraged me to think deeply and analytically about the knowledge and concepts in the course.	90	46.6 (93.2%)	59	31	0	0	0
6	<b>Presented the subject matter in a methodical and logical way</b> The way this faculty member designed & conducted classes helped to build my knowledge & understanding in a systemic way.	90	46.3 (92.6%)	57	33	0	0	0
7	<b>Encouraged creative thinking in the subject matter</b> This faculty member's teaching invited me to think about the subject matter in innovative & inventive ways.	90	46.8 (93.6%)	61	29	0	0	0
	<b>Overall</b>		92%					
	<b>Collaborative Learning</b> <b>Criteria for consideration</b>							
8	<b>Self &amp; group learning accountability</b> I have learned much myself & from others in my group. We all contributed to the group.	90	44.8 (89.6%)	51	31	8	0	0
9	<b>Interpersonal communication skills</b> I have improved expressing myself & understanding others in my group.	90	33.8 (67.6%)	17	42	23	0	0
10	<b>Group management, conflict resolution skills,</b> We self- managed our group to keep our schedule & resolve conflict.	90	40.1 (80.2%)	35	31	14	10	0
11	<b>Group adaptability &amp; empathy</b> We adapted others' ideas & saw from others' viewpoints.	90	39.4 (78.8%)	29	38	12	11	0
12	<b>Critical &amp; creative thinking problem solving skills in the group</b> I have learned to be critical in solving design problems & used my creative thinking skills.	90	41.1 (82.2%)	32	36	22	8	0





## Advocacy for Monitoring and Evaluation in Community Development Projects in Africa

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### ABSTRACT

Much of retrospection and reassessment of past undertakings and activities is necessary so to gain confidence in future tasks and ensure success. Review is mandatory and important in development projects. Many projects and programs suffer losses because of lack of or inefficient and ineffective monitoring and evaluation. Monitoring and evaluation helps in identifying the problem before hand or in time, hence, taking precautionary and even corrective measures in time. To win the favour of the donors and creditors, the evidence that the projects and programmes initiated are succeeding is inevitable. The type of evaluation depends on the object being evaluated and the purpose of the evaluation. Monitoring and evaluation should be incorporated in the planning of a project or programme. The monitoring and evaluation process may be presented in several phases. Methodology adopted was review of literature and the conclusions were made based on arguments elicited in the paper.

**Key Words:** *monitoring, evaluation, community, development, project, Africa*

### THE CONCEPTS OF MONITORING AND EVALUATION

Most African countries like a new site for construction, a lot of activities are taking place at the same time. Just like an amateur in any vocation much of retrospection and reassessment of past undertakings and activities is necessary so to gain confidence in future tasks. Even with the most experienced practitioner re-examination of the applied intervention is essential for provision of insight on the best alternative to be used in future. Omission of monitoring and evaluation in a project is like driving a car without checking petro, oil and water; the car has high chance of halting on the way and never to move again because, may be one or more of its driving component has either gotten exhausted or malfunctioned or demanded replenishing. Hence, a project without monitoring and evaluation may stall any time without warning. Many projects undertaken in Africa are new in the African context though they may be a replica of the same from their land of origin. An inexperienced person needs frequent and intense verification of his/ her workmanship than the experienced, though review is mandatory and equally important to all, however, it is less urgent to the experienced than to the inexperienced.

Many projects and programs in Africa have suffered tremendous loses because of lack of or inefficient and ineffective monitoring and evaluation. Monitoring and evaluation serves as a cautionary measure for eminent disaster in project and programme management. Monitoring and evaluation helps in identifying the problem before hand or in time, hence, taking precautionary and even corrective measures in time.

In monitoring and evaluation the project and programme progress and success are measured. Most countries in Africa depend on donor and loan driven economy. To win the favour of the donors and creditors, the evidence that the projects and programmes initiated are succeeding is inevitable. Such evidence may only be provided through the feedback process gained through monitoring and evaluation.

Monitoring entails ardent observation of the progress of the project or programme as per the initial plan. Evaluation on the other hand ascertains the degree to which the project or programme activities are leading to achieving the original goals and objectives; culminating to value judgment of the worth of the interventions, and hence, the entire project or programme. Monitoring and evaluation focus on project or programme specific goals and stages. The object of monitoring and evaluation must be specific and measurable. Rossi, Freeman and Lipsey (1999:20) define programme evaluation research as “the use of social research procedures to systematically investigate the effectiveness of social intervention programs that is adapted to their political and organizational environments and designed to inform social action in ways that improve social conditions.” Monitoring and evaluation complement each other; hence it is not easy to put a clear demarcation between the two. Nuguti (2009), summarize the explanation of monitoring and evaluation by emphasizing the role played by monitoring and evaluation which includes collecting and canalizing information to be used by policy makers and others in planning and management (Nuguti, 2009, p5).

Monitoring and Evaluation unlike basic research, it is applied research and it is expected that the solutions obtained through the process are utilized for the benefit of the project or programme concerned. Monitoring and evaluation data should help in making informed decisions regarding the project or programme. Monitoring is a nonstop process from the inception of a project throughout all its stages and processes. Similarly evaluation is carried throughout the phases of a project, though at various stages or for diverse motives.

Monitoring and evaluation provides a flat form for understanding a project or a programme, thus, the likelihood of its success. Monitoring and evaluation will identify project or programme success or failure, the reasons for the state of affairs, suggestions for the course of action to be taken or elucidation and consequently, the probable success.

Monitoring and evaluation should be incorporated in the planning of a project or programme. For the success of the monitoring and evaluation resources need to be provided for the same; which may include: personnel, materials, time, funds etc.

### **TYPES OF EVALUATION**

Evaluation may be classified in types depending on the object being evaluated and the purpose of the evaluation. There are two main types of evaluation, that is, formative and summative evaluations. The purpose of formative evaluation is to monitor the project progress to provide ongoing feedback that can be used by project staff to improve interventions delivery. Formative evaluations seek to improve the aspect being examined. The formative evaluation looks at the entirety of the project implementation, which includes the inputs, context and processes in relation to project or programme realization.

Summative evaluations focus on the results of the project or programme processes. It assesses the outcome or impact of project or programme. Summative evaluation examines the short term and long term effects of the project interventions.

### **CONCEPTUALIZATION, INITIATION AND ACTUALIZATION OF PROJECT MONITORING AND EVALUATION**

Monitoring and evaluation are part and parcel of the project hence they should be part of the project design. Monitoring and evaluation takes place in all stage of project cycle, hence, the need for their planning in advance and utilization of the information gained thereof. The nature of monitoring and evaluation to be carried on the project need to be identified in advance together with the method to be utilized in data collection and analysis. At the stage of conceptualizing the project, the need assessment data is used to evaluation the necessity of the

project culminating in formulation of the project objectives. It is on the basis of the objectives the project is designed, implemented and eventually monitored and evaluated.

The clear link between project design and monitoring and evaluation is the project logical framework matrix (log frame matrix) (Ogula, 2002, p8-9). The project log frame matrix summarizes systematically the long term and short term objectives, the immediate results, the necessary actions, the resources required, the favourable conditions to yield the results, the pointers to success and ways of ascertaining the success. The matrix connects the project conceptualization, initiation, actualization and finally monitoring and evaluation. The following table (Table1) demonstrates the elements of a log frame matrix.

**Table1. A Logical Framework on the Implementation of Tree Planting Project**

<b>Narrative Summary</b>	<b>Performance Indicators</b>	<b>Means of Verification</b>	<b>Critical Assumption</b>
<b>Goal</b> To improve the tree cover at Nairobi Hills	Number of number of trees planted Number of trained people on tree planting Number of people being trained on tree planting Minimize logging	Observation of the site Discussion with stakeholders Interview the project officials	The government is committed in supporting the tree planting The neighbouring community is concerned with tree planting The project management and the neighbouring community cooperate
<b>Objective</b> To equip the concerned community with the relevant knowledge, skills and attitudes necessary for effective tree planting and preservation	Improved tree cover on the area The area covered by trees More people trained on tree planting More trees planted	Review the documents on the project Interview with subject teachers Observations	The neighbouring community cooperate The government support the project
<b>Output</b> Increased tree cover	Get 100% tree cover Reduction of logging by 90%	Observation of the site Project documents	The planted and existing trees are preserved
<b>Activities</b> Train people on tree planting, monitor tree planting activities undertaken, carry out evaluations, plant more trees, preserve existing trees	Number of people trained on tree planting Monitoring activities carried out per year	Training reports People enrolment for training records Monitoring reports Evaluation reports on the project activities	Financial and material resources are provided in time There is cooperation between the project management and concerned communities People are willing to learn on tree planting and preservation
<b>Input</b> Personnel, materials, funds	Number of people available for training on tree planting Number of people enrolled for the training on tree planting Amount of money allocated for training personnel The cost for training one person Amounts facilities and equipment's for the project	Applicants records Enrolments records The budget Accounts records Facilities and equipment inventory	People are available for training Adequate funds availed Financial, human and material resources provided on time

The monitoring and evaluation fit well within the logical framework matrix. Monitoring and evaluation should ascertain the appropriateness of the inputs in addressing the project identified needs; they should determine whether the planned activities are leading to the desired outputs. And finally the monitoring and evaluation processes should establish the extent to which the project is achieving its long term goals and objectives.

### **PROCESS OF PROJECT MONITORING AND EVALUATION**

The monitoring and evaluation process may be presented in several phases. The following are the phases:

- i) Identifying the basis on which project was designed: Understanding the project first forms the basis for monitoring and evaluation. Evaluating the need, necessity, situations and circumstances surrounding the inception of the project forms the basis for future monitoring and evaluation. Getting the background information of the project, that is, the baseline information is mandatory for monitoring and evaluation. This does not matter whether a baseline survey was carried out prior to the establishment of the project or not.
- ii) Stating the purpose for carrying out the monitoring and evaluation: The purpose for monitoring and evaluation could be for improving the implementation process or for value judgment and determination on the future of the project. The purpose is implied by the type of the evaluation to be carried out, that is, either formative or summative evaluation.
- iii) Establishing the design and methodology: Choose the appropriate design and approach for the monitoring and evaluation. The design and approach or model will determine the procedures for sampling participants, instruments selection, method for data collection and analysis.
- iv) Selecting the instruments for data collection: The selection of the instruments to be used will be determined by the design and methodology adopted. The instruments may include among others: questionnaires, interview guide, observation schedule/ check list, document analysis guide among others. The instruments should be prepared and administered in line with the information needed and conformity to ethics of monitoring and evaluation process. Where possible triangulation of instruments should be encouraged.
- v) Procedures for collecting data: At this stage the determined methods and instruments are applied to obtain the needed information or data.
- vi) Processing the collected data: The data collected is classified or coded to enable interpretation.
- vii) Analysing the collected data: The processed data is manipulated to respond to the monitoring and evaluation purpose.
- viii) Interpreting the findings: Alternative ways of understanding the results are presented and their implications.

## CONCLUSIONS

- i. Project monitoring and evaluation is necessary for the success of the project.
- ii. Failure is eminent to projects without monitoring and evaluation.
- iii. Monitoring and evaluation ensure timely interventions to projects and programmes.
- iv. Monitoring and evaluation reports help donors and sponsors to make informed decisions.

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## Trend and Rate of Household and Government Contribution to Secondary Education Unit Cost in Kenya: A Case Study of Siaya District

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### ABSTRACT

Unit cost of secondary education has continued to rise both direct and indirect jeopardizing access to basic education. The debate has concentrated on whom is carrying the burden of secondary education. The descriptive and causal comparative designs were used in this study. The study sample comprised 85 headteachers', 765 teachers', 3349 students and one DEO. The findings of the study indicate that on average households and government contribution to secondary education grew by 3.45 and 4.3 times in absolute terms respectively while under constant terms, the household contribution was 23 times and 25 times for day and boarding schools respectively. The government contribution was 15 times over the same time period. It was concluded that the household carry heavy responsibility compared to the government and hence acquisition of secondary education is still a problem to most household.

**Key Words:** *Unit cost, Households, Trends, Rate*

### INTRODUCTION

Unit cost can be described as unit expenditure. Statistics on unit cost are an important guide to policy makers. The challenges facing policy makers is whether they should seek to hold unit cost constant, decrease them, or increase them (Mingat, 2003). The central question confronting educators in every society is how to provide quality secondary education when unit cost has continued to rise and resources are scarce. In recent years, stakeholders in education in both industrialized and developing countries increasingly demand effective secondary schooling for their disadvantaged youth (Watkins, Watt & Buston, 2001). Yet providing quality secondary education at lower unit cost is an overwhelming challenge to most governments, particularly those in developing countries (Atcharena & Hite, 2001).

Most stakeholders in education readily believe that adding more money to schools will improve the quality of education and thereby, schools' performance. However, production function studies in both industrialized and developing countries have produced findings that are inconsistent and mixed. Hanushek (1999) reported that in 12 studies on per pupil expenditure in developing countries, half were statistically significant, and the other half were found to be statistically insignificant. Whether secondary schools with greater access to more financial resources outperform others is still an issue demanding exploration in developing countries.

Different regions have used different models for investing in secondary schooling. In contrast to the investment in secondary education in developed and then developing countries, investment in secondary education in Sub-Saharan Africa continues to focus largely on

expanding enrolment rather than on higher per student spending, and the pupil teacher ratio, which had been declining, is now up to 40 pupils per teacher (UNESCO, 2002).

Falling revenues of secondary schools in many African countries led to the introduction of user fees as an ad hoc response to expenditure cuts-either imposed by falling government revenues. Throughout the 1980s and much of the 1990s the world bank especially pushed user fees on the grounds that low demand for poor quality services, rather than cost, was the principal barrier to expanding access. Poor parents often find it difficult to make a projection of the payoff of their children's education and cannot capture all the benefits of schooling, since these accrue across a child's lifetime and are difficult to access in the immediate or short term (Herz and Sperling, 2005).

According to World Bank (2005), eliminating user fees requires major front-end capital investment. These investments have highly significant implications for recurrent costs. In the medium term, expanding access in secondary will rise. It thus follows that governments will need to implement a cluster of policies which create an enabling environment for the expansion of secondary education. The financing of universal secondary education for low-income countries would not be possible without an immediate steep-change in the volume and quality of donor support. Whatever is done to mobilize internal resources at the country level, better quality, as well as more aid is urgently needed to achieve free primary and secondary education.

According to Ngware et al. (2006b), since the late 1980s household's investment to secondary education has risen considerably. Given that household contribution to physical facilities and instructional materials was meant to be optional, a growing proportion of households are making contributions below what is needed or are opting out of secondary education for their children - if they cannot afford the needed levies. Largely as a consequence, the majority of schools lack facilities (particularly for learning science) and instructional materials, and are thus, low quality institutions. A related development is the observable facts that the more affluent household strive to have their children enrolled in the few older and established schools that have managed to maintain a measure of quality. Consequently, there are too many primary school leavers chasing a few quality secondary schools, leaving the not so popular poor quality schools under-enrolled.

According to Manda, Mwabu and Kimanyi (2002), the government should always be the principal investor in education. Such a role cannot be left entirely to the private sectors because human resources development involves long-term planning and substantial financial resources mobilization. On the other hand, education, particularly post-primary education, can be treated as a profitable investment for individual graduates, who earn more than they would otherwise, and for the society, which is enriched not only by the knowledge of the educated people but also by the higher taxes paid by educated individuals. This benefit extends from the students present household, future household and to the economy as a whole.

Despite the relatively high expenditure on education in Kenya, the GER in secondary education was 31 percent in 2006 (UNESCO, 2008). Lewin (2007b) suggest that to achieve GERs 100 percent in primary, 100 percent in lower secondary and 50 percent in upper secondary, approximately 8.6 percent of GNP would be required for spending on education without any cost saving reforms; or 6.3 percent of GNP with cost savings reforms. With cost saving reforms, cost per pupils as a percentage of GNP per capita are calculated as 12 percent in primary, 20 percent in lower secondary education and 40 percent in upper secondary education, as compared with without cost saving reforms of 12 percent in primary, 30 percent in lower secondary and 60 percent in upper secondary education.

Di Gropello (2006) observes that low-income countries spent US\$289 for each enrolled student, and their total secondary education expenditure amounted to only 13 percent of the per capita income. A typical lower-middle-income country spent US\$1,038 per pupil, or 17 percent of its per capita income. Among upper-middle and high income countries, domestic education expenditure per pupil averaged US\$2,537, or almost a quarter of the GDP per capita. In regard to resource allocation, although middle and high income countries have significantly more success than the poorer countries in Latin America and East Asia, their secondary education sectors are still fairly underfunded compared to the OECD, in which each secondary school student on average received a quarter of personal income, or US\$ 6,688.

The unit cost burden of secondary schools in Kenya is borne by the government and household. Such cost target salaries for teaching and non-teaching staff, bursary allocation, capital investments, school fees, tuition and transport, among others. In 2003/04, estimated total recurrent unit cost for primary, secondary, technical and university education were Ksh.5,438, Ksh.22,381, Ksh.35,932 and Ksh.136,882, respectively (Ngware et al, 2006a) Secondary education received 4.1 times per student than the public unit cost of primary pupil, 1.6 times and 6.1 times public technical and university education unit expenditure, respectively. These ratios are high, especially considering that the figures do not include the fees charges. In absolute terms, secondary education unit cost increased from Ksh.14,262 in 1997/8 to Ksh.21,106 in 2004/5 an increase of 48 percent (Ngware et al, 2006a). Parents whose children were attending secondary schools were responsible for meeting up to Ksh.8,500 (US\$136) of charges in annum in national requirements. In addition, 'caution money' for new students, development funds' charges and 'lunch fees' could be charged to parents. In total, the guidelines suggest the maximum charges be Ksh.11,000 (US\$175).

Finding stable and reliable funds to close the gap in unit cost requires thinking carefully about means for funding, the budgeting process, the expenditure items, and the design of the fiscal system (Ngware et al, 2006a; Onsomu et al, 2006). The question is what financial mechanism reforms should Kenya adopt to enhance attainment of quality education in Kenya observed by good grades at the end of form four levels? This remains vital important question and is the gap that this study also seeks to fill. This is why this study set out to do an objective analysis of the trend and rate of household and government contribution to secondary education expenditure in Siaya district from 1997 to 2007. The following objectives guided the study:

- Determine the trends at which the government and households have been contributing to secondary education expenditure.
- Perform deviation analysis to determine the rate at which Household and Government have been contributing to secondary school expenditure.

## **RESEARCH METHODOLOGY AND THEORETICAL FRAMEWORK**

The study was guided by arguments by Ranis and Stewart (2001) who clearly notes that education is important public good. The allocation of resources for human development is partly a function of relative size of public expenditure. The proportion of these expenditure flow to the human development sector is partly a function of how they allocated within each sector. This may be argued as a proof why the government and household invest in education. This study adopted descriptive (survey) and causal-comparative (ex-post facto) designs. In this study, stratified, systematic and purposive sampling methods were used. Systematic sampling was used in the selected schools to determine the teachers and students who would be given questionnaires and who would participate in the interview. To administer the questionnaires effectively a personal visit to all the schools selected in the sample was made. The study was carried out in Siaya District, Nyanza Province in Kenya. The district lies between latitude 00 26'



to 00 18' North and Latitude 330 58' East and 340 33' West (Republic of Kenya, 2003e). The population of the study comprised 85 head teachers', 749 teachers', 3210 form 4 students and one DEO. The data was coded for analysis.

## RESEARCH FINDINGS

### Unit Cost from Government Sources

Table 1 shows unit cost derived from remuneration of teachers per annum, bursary per student and grants per student per annum giving overall unit government expenditure per student in Siaya district.

**Table 1: Unit Government Expenditure per Student (in Ksh.)**

Year	Teacher salary per student	Bursary per student	Grants per student	Unit government expenditure
2007	13,628	1,106	98	14,822
2006	13,183	996	167	14,346
2005	13,460	979	172	14,511
2004	12,494	655	96	13,149
2003	11,314	280	159	11,753
2002	11,029	265	-	11,294
2001	7,829	260	-	8,089
2000	6,459	246	-	6,704
1999	5,420	247	-	5,667
1998	4,900	232	-	5,132
1997	4,328	230	-	4,568

*Authors' Derivation*

Table 1 shows that in 1997, the unit cost was Ksh. 4,568 per student. It doubled to Ksh.8,089 in 2001 before tripling in 2004/05 period. It reached Ksh.14,822 in 2007. The graph shows an upward trend from a minimum of Ksh.4,568 in 1997 to Ksh.8,089 in 2001 before reaching Ksh.14,822 in 2007.

### Unit Cost from Household Sources

Table 2 shows fees parents paid to secondary schools in Siaya district. The fees represent unit cost levied on students annually for day scholars and borders.

**Table 2: Unit Cost Paid by Parents (in Ksh.)**

Year	Form 1		Form 2		Form 3		Form 4	
	Day	Board	Day	Board	Day	Board	Day	Board
2007	20,015	33,115	19,515	32,615	19,515	32,615	24,215	36,615
2006	19,450	31,450	18,950	30,950	18,950	30,950	23,650	34,950
2005	18,300	29,400	17,800	28,900	17,800	28,900	22,500	32,900
2004	17,800	28,000	17,300	27,500	17,300	27,500	22,000	31,500
2003	17,400	26,500	16,900	26,000	16,900	26,000	21,600	30,000
2002	16,475	24,475	15,975	23,975	15,975	23,975	20,675	27,975
2001	16,225	23,925	15,725	23,425	15,725	23,425	20,425	27,425
2000	15,325	22,825	14,825	22,325	14,825	22,325	19,525	26,325
1999	15,250	22,650	14,750	22,150	14,750	22,150	19,450	26,150
1998	14,950	21,950	14,450	21,450	14,450	21,450	19,150	25,450
1997	14,900	21,600	14,400	21,100	14,400	21,100	19,100	25,100

*Authors' Derivation*

### User Charges per Class

Table 3 shows consolidated unit cost paid by Form 1's in the period under review. It shows fees paid by day scholars and boarders. In 1997, day scholars unit cost was Ksh. 19,468 while boarders paid Ksh.26,168. It doubled in 2003 to Ksh.29,153 for days scholars and Ksh.38,253. In 2007, day scholars paid Ksh.34,837 while boarders paid Ksh.47,937.

**Table 3: Form 1 Consolidated Unit Cost (in Ksh.)**

Year	Category	Households	Government	Unit Cost
2007	Day	20,015	14,822	34,837
	Board	33,115	14,822	47,937
2006	Day	19,450	14,346	33,796
	Board	31,450	14,346	45,796
2005	Day	18,300	14,511	32,811
	Board	29,400	14,511	43,911
2004	Day	17,800	13,149	30,949
	Board	28,000	13,149	41,149
2003	Day	17,400	11,753	29,153
	Board	26,500	11,753	38,253
2002	Day	16,475	11,294	27,769
	Board	24,475	11,294	35,769
2001	Day	16,225	8,089	24,314
	Board	23,975	8,089	32,064
2000	Day	15,325	6,704	22,029
	Board	22,825	6,704	29,529
1999	Day	15,250	5,667	20,917
	Board	22,650	5,667	28,317
1998	Day	14,950	5,132	20,082
	Board	21,950	5,132	27,082
1997	Day	14,900	4,568	19,468
	Board	21,600	4,568	26,168

*Authors' Derivation*

Table 4 shows consolidated unit cost paid by Form 2's and 3's in the period under review for both day scholars and boarders. In 1997, day scholars paid Ksh.18,968 while boarders paid Ksh.25,668. The fees went up to Ksh.37,753 for boarders and Ksh.28,653 for day scholars in 2003. In 2007, day scholars paid Ksh.34,337 while boarders paid Ksh.47,437. In either case, the fees never doubled but were rising steadily.

**Table 4: Form 2&3 Consolidated Unit Cost (in Ksh.)**

Year	Category	Households	Government	Unit Cost
2007	day	19,515	14,822	34,337
	Board	32,615	14,822	47,437
2006	Day	18,950	14,346	33,296
	Board	30,950	14,346	45,296
2005	Day	17,800	14,511	32,311
	Board	28,900	14,511	43,411
2004	Day	17,300	13,149	30,449
	Board	27,500	13,149	40,649
2003	Day	16,900	11,753	28,653
	Board	26,000	11,753	37,753
2002	Day	15,975	11,294	27,269
	Board	23,975	11,294	35,269
2001	Day	15,725	8,089	23,814
	Board	23,325	8,089	31,414
2000	Day	14,825	6,704	21,529
	Board	22,325	6,704	29,029
1999	Day	14,750	5,667	20,417
	Board	22,150	5,677	27,827
1998	Day	14,450	5,132	19,582
	Board	21,450	5,132	26,582
1997	Day	14,400	4,568	18,968
	Board	21,100	4,568	25,668

*Authors' Derivation*

Table 5 shows consolidated unit cost paid by Form 4 students. It shows fees paid by day scholars and boarders. In 1997, the consolidated fees paid by day scholars was Ksh. 23,668 while boarders paid Ksh. 29,668. The amount charged increased steadily to Ksh.33,353 and Ksh.41,753 respectively in 2003. In 2007, day scholars paid Ksh.39,037 while boarders paid Ksh.51,437.

**Table 5: Form 4 Consolidated Unit Cost (in Ksh.)**

Year	Category	Households	Government	Unit Cost
2007	Day	24,215	14,822	39037
	Board	36,615	14,822	51,437
2006	Day	23,650	14,346	37,996
	Board	34,950	14,346	49,296
2005	Day	22,500	14,511	37,011
	Board	32,900	14,511	47,411
2004	Day	22,000	13,149	35,149
	Board	31,500	13,149	44,649
2003	Day	21,600	11,753	33,353
	Board	30,000	11,753	41,753
2002	Day	20,675	11,294	31,969
	Board	27,975	11,294	39,269
2001	Day	20,975	8,089	29,064
	Board	27,425	8,089	35,514
2000	Day	19,525	6,704	26,229
	Board	26,325	6,704	33,029
1999	Day	19,450	5,667	25,117
	Board	26,150	5,667	31,817
1998	Day	19,150	5,132	24,817
	Board	25,450	5,132	30,582
1997	Day	19,100	4,568	23,668
	Board	25,100	4,568	29,668

*Authors' Derivation*

**Consolidated Unit Cost**

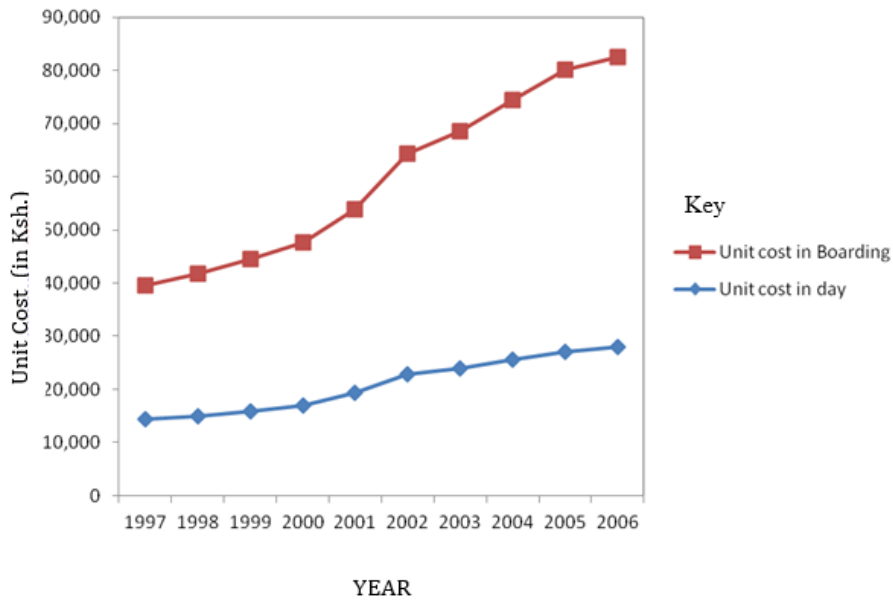
Table 6 shows average unit cost in day and boarding secondary schools in Siaya district. The table shows that day secondary schools were cheaper than boarding secondary schools. In 1997 boarding schools charges increased from Ksh.25,236 to Ksh.44,506 in 2003 and to Ksh.57,259 in 2007. In day secondary schools, fees increased from Ksh.14,358 in 1997 to Ksh.23,991 in 2003 and to Ksh.28,938 in 2007. In day and boarding secondary schools the charges in 2007 doubled the 1997.

**Table 6: Unit Cost in Day and Boarding Secondary Schools (in Ksh.)**

Year	Household – cost per student in day	Household- cost per student in boarding	Government- Cost per student	Unit cost in day	Unit cost in boarding
2007	27,837	42,437	14,822	28,938	57,259
2006	26,796	40,296	14,346	27,946	54,642
2005	25,811	38,411	14,511	27,154	52,922
2004	23,949	35,649	13,149	25,635	48,798
2003	22,153	32,753	11,753	23,991	44,506
2002	20,769	30,269	11,294	22,770	41,563
2001	17,314	26,414	8,089	19,314	34,503
2000	15,029	24,029	6,704	16,944	30,733
1999	13,917	22,827	5,667	15,921	28,494
1998	13,082	21,582	5,132	15,032	26,714
1997	12,468	20,668	4,568	14,358	25,236

*Authors' Derivation*

Figure 2 shows upward trend for both unit cost of day and boarding secondary schools. However, the boarding secondary schools enjoy higher upward trend than day secondary schools. The elasticity of day secondary school curve was 1536 units while boarding secondary schools was 2177 units. The implication was that boarding cost was rising faster than day secondary schools.



**Figure 2: Unit Cost of Day and Boarding Secondary Schools**

**Table 7: Absolute and Constant Analysis of Unit Cost (in Ksh.)**

Year	Absolute analysis unit cost (day)	Absolute analysis unit cost (board)	Constant analysis unit cost (day)	Constant analysis unit cost (board)
2007	992	2617	14580	32023
2006	792	1720	13588	29406
2005	1519	4124	12796	27686
2004	1644	4292	11277	23562
2003	1221	2943	9633	19270
2002	3456	7060	8412	16327
2001	2370	3770	4956	9267
2000	1023	2239	2586	5497
1999	889	1780	1563	3258
1998	674	1478	674	1478
1997	0	0	0	0

*Authors' Derivation*

### Deviation Analysis

Table 7 shows the deviation of unit cost in current and constant growth (index) over the time series period 1997/98 to 2006/07.

#### Absolute Deviation Analysis

The absolute deviation analysis in Table 7 shows that the unit cost in day secondary schools rose from 674 units in 1997 to 3456 in 2002 then dropped to 1,221 units in 2003 and dropped further to 992 units in 2007. In boarding secondary schools, the unit costs rose from 1478 in 1997 to 7,060 in 2002 before fluctuating between 2003 and 2007 where unit cost fell to 1,720 in 2006 and rose to 2,617 in 2007. The overall picture presented for the unit cost on absolute deviation analysis generally reflects fluctuations in overall allocation to secondary education as shown in Figure 3. The implication of such fluctuation is that unit cost can rise and fall depending on the prevailing market situation dictated by inflationary rates and therefore parents are faced with unpredictable fee regime dictated by the institutions and prevailing circumstances.

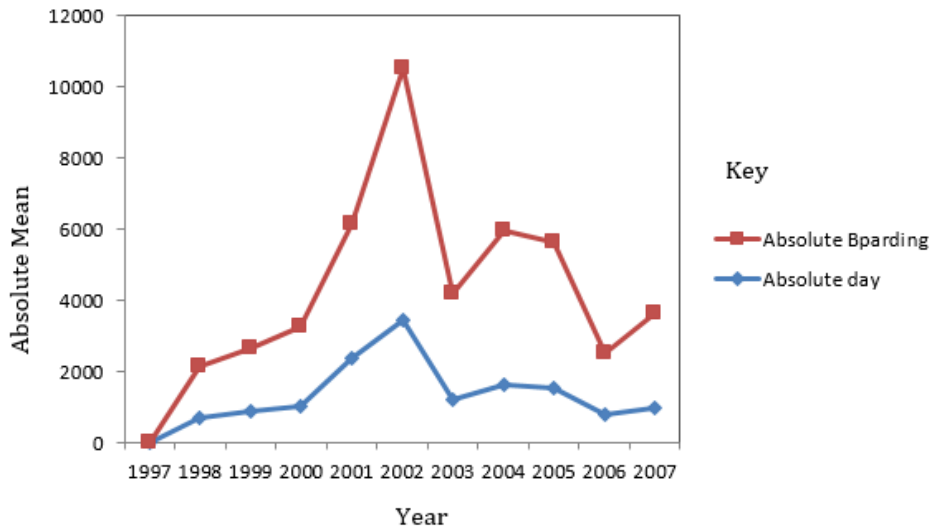


Figure 3: Absolute Analysis Graph

**Constant Deviation Analysis**

The base year for the constant analysis was the year 1997. The base year was chosen for it was the beginning of study period.

**Unit Cost**

In terms of constant analysis and using 1997 as the base year, the unit cost in day secondary show an upward trend from 674 units in 1998 to a maximum of 14,580 units in 2007. In boarding secondary schools the unit cost rose from 1,478 in 1998 to 32,023 in 2007. The Figure 4 shows the nature of average unit cost curve over the period 1997 to 2007.

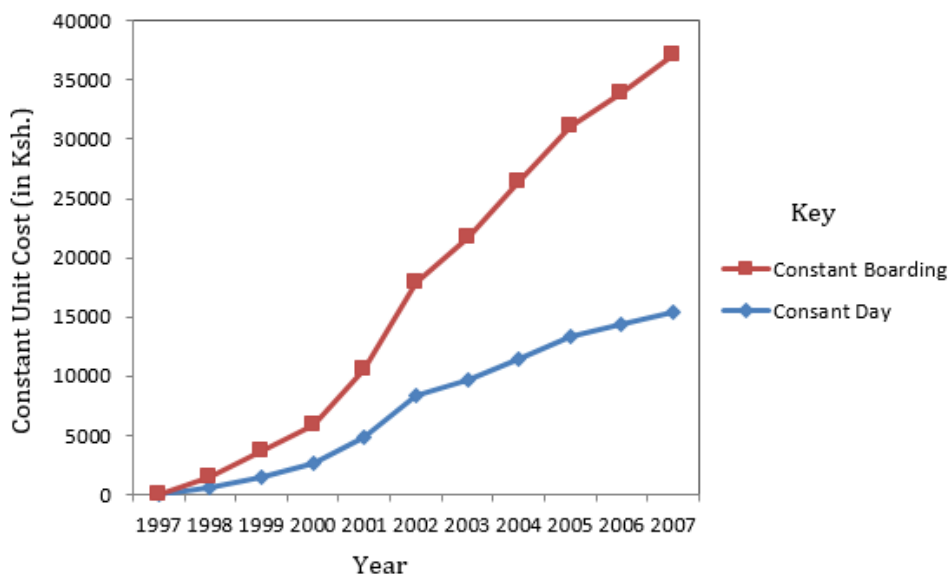


Figure 4: Constant Unit Cost Analysis

The constant analysis show that unit cost has been rising steadily for both day and boarding secondary schools. The absolute deviation analysis in Figure 3 shows fluctuations and therefore constant analysis in Figure 4 is a better measure of the trend of unit cost.

## SUMMARY OF RESEARCH FINDINGS

The results of the findings show that:

- Remuneration of teachers in various grades reflects that by 2003 secondary teacher's salary had doubled the 1997 figures and by 2008, it had tripled the 1997 figures.
- Bursary and grants to secondary schools in the district picked up in 2003. The period 2004 to 2007 indicated a dramatic rise of the government funding at the constituency level to the tune of Ksh.12,570,102 from Ksh. 8,717,730. Bursary per student averaged Ksh.248 in the period 1997/2003 and Ksh.693 in the period 2004/2007. The implication is that bursary per student is on the rise in the district. However, the amount allocated per student is insufficient to sustain students in school.
- Grants showed a marked increase from Ksh. 1,859,757 in 2003/04 to Ksh. 2,021,830. The implication is that government allocation to laboratory and equipment grant is on the rise. This is attributed to the government resolve to strengthen mathematics and sciences in secondary education in line with sessional paper No. 1 of 2005 (Republic of Kenya, 2005).
- The household expenditure on fees is on upward trend with elasticity of Ksh. 1,537 per year in day schools, while in boarding schools the elasticity is Ksh.2,177 per annum. The average annual household contribution is Ksh.19,920 for day secondary schools and Ksh.30,920 for boarding schools
- The government contribution to unit cost of secondary education is on upward trend with elasticity of Ksh. 1,025 per annum. Increasing from Ksh.4,458 in 1997 to over Ksh.11,294 in 2002 before reaching Ksh.14,822 in 2007. The rate of government contribution averages Ksh. 10,003 per annum.
- Households contribution grew equally with the government in absolute terms at about 5.6 between 1997 to 2002. Fluctuations dominated the period between 2003 and 2007 with household averaging 1.3 times while government averaging 3times.

## CONCLUSION

The average contribution of household grew by 3.45 in absolute terms in the period 1997 to 2007 while the government contribution averaged 4.3 times. Considering 1997 as the base year, the households contribution to secondary school expenditure is 23 times and 25 times for day and boarding respectively while the government contribution is 15 times. Therefore households have genuine concerns.

## RECOMMENDATION

Financing secondary education remains a threat to accessibility and enrolment. From the study, household contribute a high amount in comparison to the government and hence bear heavy responsibility towards secondary education financing. To reduce the burden on household, there is need to find stable and reliable sources of funds to close the gap in unit cost. Careful thinking is required to find means for funding, the budgeting process, the expenditure items, and the design of the fiscal system. To fund secondary education, the government could expand public funds, exchange contribution from the private sector, or ask the international community for assistance.

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## Counter Discourse of Power in Indonesian narrative texts

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### ABSTRACT

This study aims to examine and develop an investigation method for language data from a discourse found in a previous study. The object of research is in the form of Indonesian narrative text dated early 20th century. First of all, the method of obtaining discourse language data focusing on "power" Nodal Point (NP) was examined. When the results revealed some similarities and a few differences, several questions investigating language data were developed by focusing on slightly different NP, that is "counter discourse of power". After discussing the context and describes what is contained in the Indonesian narrative texts, the results reveal that power discourse in Indonesian narrative texts was still a continuity of power discourse in colonial texts, with a little difference in emphasis. Furthermore, language data investigated from "counter discourse of power" show that the Indonesian narrative texts contained criticism toward tradition and people who followed the western way of life.

**Keywords:** *investigation method, counter discourse of power, context, criticism on custom*

### INTRODUCTION

This article aims to explain the results of the discourse analysis of Indonesian early twentieth century narrative texts. Previous research has been conducted on the Dutch text, the texts of stories that have occurred in the Dutch East Indies. The study identifies the language data obtained from the analysis of the discourse of power in colonial texts, the method used to obtain the data is the method of Laclau and Mouffe on Nodal Point which has been expanded (see Latjuba, 2013a: 42-50). Why Indonesian narrative texts of the early twentieth century was chosen to be the object of current research? That's because these texts are assumed to be voiced "counter-discourse of power".

In these texts was found the relation among the Indonesian people which containing shades of "power" which seems a little different than the relationship that has been found in the Dutch colonial texts. In colonial texts, the relation between the "ruler" and "ruled" tend to explicitly show the inequality, and this controls the entire colonial texts. While in the Indonesian narrative texts, foreigners (Dutch and Indo) just a bit described directly, but indirectly they are in the minds of those particular Indonesian.

The presence of foreigners who only a minority in Indonesian narrative texts, the same as the native people who also constitute a minority in the Dutch colonial texts. Both of these,, Indonesian narrative texts and the texts of the Dutch colonial narrative equally indicate "power". The "power" shown in Indonesian narrative texts in the hands of certain individuals and not on the particular nation. Therefore the use of language in the discourse of "power" presents a difference of vocabulary, although inevitable there is also some similarities.

Since there is little dimension in difference, which to some extent can be argued that the discourse of 'power' which voiced by these texts is a "counter-discourse of power". Such assumptions may be justified, when it was realized that the context behind the idea was conveying the situation in Indonesia that is not yet stable, where the movement to achieve the intact identity of Indonesia still occur in secret. Western thought and culture began to infiltrate



here and there the well-educated Indonesian individual. They become agents of change and want to change views and thoughts that do not fit with the times.

On the other hand, individuals who hold the power of the local customs, getting harsh criticism from their followers, primarily in their attitudes, behaviours, opinions, and thoughts, which they believed.

Interpret the use of language in a discourse cannot be done directly, such as the literal meaning. But we must have the sensitivity to connect it to other expressions or words which "suspected" had a relationship with the discourse to be conveyed. And to be able to interpret it in full, then the context, place or situation in which the expression is placed, must be understood by people who want to make sense of the discourse. So it can be concluded, interpret discourse is an activity to uncover the meaning behind the words or sentences presented. Due to the same reason, this study concerned primarily on the use of language in a discourse that assumed as "counter-discourse of power"

### **CONTEXT IN DISCOURSE**

Van Dijk (2009) introduced the theory of context that explains how text and talk are produced, adapted to the social environment. This is an indirect relationship defined between discourse and society. Adjustments are made by the user's own language, how they define the communication situation. Models of Van Dijk's context control all language production and understanding and explain how discourse is made suitable for every situation.

Context is generally understood more broadly even beyond the boundaries of language, so that it is seen to be non-linguistic. Context is a place or state of the environment behind an idea that can be used as a reference for understanding the language of expression. The expression language does not always have to be a whole sentence, because the specific words or phrases can also be seen as an expression language and may indicate a certain meaning or purpose so long as it is within a certain context anyway.

Experts such as Van Dijk (2009) and Halliday (1978), inspired by research conducted Malinowski and Firth, explain the context based on oral discourse. According to them, context is all non-verbal properties that present in situations that can affect the communication of participants, in this case the speaker and the listener, in producing and understanding discourse. The non-verbal properties surrounding the communication refer to the setting of the situation, in which there are participants (speakers and listeners) with all attributes attached to them as well as the background of the place, time, and social circumstances surrounding communication. Attributes attached to the participants are their social identities that appear or not. Social aspects on their identity are age, gender, ethnicity, and race, while their social status are occupation, education, offspring. This social aspect seem not able to be seen directly such as knowledge, values and norms.

Context of the social situation in a social interaction with a specific setting, involves participants who are dealing one on one, while the 'cultural context' is defined more global, involving members of the entire community, as well as some of their properties, such as knowledge, norms, and values (Van Dijk, 2009: 154). The Theory about context is claimed as an interface that related both theoretical and empirical, which is a bridge between social actors and social structures.

The definition of context for written discourse or text, in addition to receiving the definition as understood in oral discourse, it can also mean a social situation that is written by the authors in the text. This occurs because the text, especially for texts narrative have been considered as an image of the world its own, apart from the real world that are outside the actual text. As a world unto itself, the social situations which portrayed in the text are a reflection of the real

situation that is outside the text. However, because the text is a product of the individual, then the pictures of the social situation in it are just fragments of social situations that exist in the reality, and this is the result of the perception of each individual (Latjuba, 2013b:165).

### **Description about context in Indonesian narrative texts**

Discourse of Power in the Indonesian narrative texts is the background or context behind the real idea of who wants to be expressed, i.e. counter-discourse of power. Cons discourse of power is an anti-thesis of the discourse of power that were found in the colonial texts. As we know the colonial and imperial Western powers in the Nineteenth Century have penetrated all over the world, including in Indonesia and reached its peak in the first half of the twentieth century. It is therefore not surprising whenever the Indonesian narrative texts at that time also describes the social situation when the society faced those colonial and imperial powers.

In early of that century, or more precisely at the end of the Nineteenth Century, the power of resistance against the colonial power is still sporadic, meaning that opponents of the colonial powers are in the indigenous kingdoms that spread across the archipelago. The king and his royal army, which consisted of children brave country, fought against the forces of the Company who received assistance from the royal or governments of Indigenous whose formed by the colonial government. The Indigenous kingdoms are actually quarrelled each other because they indulged in struggle for power. However the triggers can vary, such as dazzled by the wealth of the earth, gold for example, there is also a desire to expand its territory. Small weak kingdoms will ask from the Company for help to fight the enemy, while the Company with its own interests exploited the situation for their own profit. While a large and powerful empire, such as Aceh, reluctant to ask for help to anyone let alone to the Company. Likewise, the Company see Aceh as a great enemy to be conquered, because a lot of interest of the colonial government there cannot be executed.

In the context of such a situation arises opponents of power derived from the indigenous people. Those who do not think that is the same as the ruling government is regarded as an enemy and their action are seen as rebellion. The leader of the Company will send a troop to capture the rebels, dead or alive, because if it cannot be obliterated from the face of the earth the address of the Company rule across the country (in this case in the West Coast of Sumatra) will be lost (St. Iskandar, 1934: 109). In a great battle, when the rebels were pressed for the troop which besiege, then the rebels fled to the wilderness, there they feel safe because of the troop of the Company are not so familiar with the wild nature. Living in the middle of wilderness, they then become rogues, which intercept the convoy of merchants were benighted in the middle of the forest. They robbed and looted merchandise of merchants. These thieves have even been rampant, in the river, in the middle of the road, in the jungles, they waiting for gold merchants, then robe abuzz - sometimes they are composed of up to 100 people, and not just gold and goods are seized, soul is also not saved (St. Iskandar, 1934: 111).

In Indonesia, early 20th century was a turbulent century, "revolution" in all areas of life. Activities related to ideas grow rapidly everywhere, even intellectual discourse into a heated discussion in Indonesian society that at that time it starts to show the existence of a new group of people, namely the group of intellectuals. This group is actually a product of the policy of the colonial government, which was originally intended for the fulfilment of the need for personnel trained employees, to help implement the wheels of government smoothly. Modern education or Western education then introduced in the colonies by the colonial government, and in the early 20th century has given birth to nationalist leaders who are able to be a driving force that brings together peoples against colonial power.

The identification of the person in favour of the counter-discourse of power in these narrative texts, lies in the hands of individuals, which can be included in the category of rebels and

rogues, intellectual aristocrat, intellectual youth of the city, and the nationalist movement figure. Persons with these categories resisted to the power either directly, by direct physical contact or indirectly, made change through the speeches and writings of their critical thinking.

Therefore, the factors supporting the existence of a counter-discourse of power in the text are identified in several categories, such as political and security situation, increasing public knowledge, the awareness of the need for equality - in this case not only equality between women and men, but also social equality, are no longer distinguish between nobles and commoners.

Thus the inherent strength of the counter-discourse of power can be summed up as nationalism or the emergence of nationalism in the individuals himself as ordinary people, in addition to increased intellect or the more Western-educated people in general, and thus has opened the horizons of knowledge and ideas with a view another world and compare with the world and its own culture.

Activities related to the reasoning reflected in their writings in specialized magazines, in newspapers, speeches at gatherings are regularly held. Not only men who are active in the discussion on the problems faced by society, but women are also no less excited. They criticize, protest all matters relating to customs, religion, relationships between women and men, which in the view and thinking they were out of sync with the times, as well as the colonial government policies perceived to burden the economy. Moreover, education has opened their horizons in thinking and looking at the problems that exist in the community, plus reading science from the West have extended their insights in assessing the customs and culture of the nation itself.

In assessing the traditions and cultures are occurred hereditary in this society, the holders of counter-discourse of power are divided into two groups. There are assessing all related to traditions was quaint, do not have a positive value. They would only accept the customs and Western civilization that is identified with modernity, which means progress, without going to see if it matches or not with the customary or tradition of the East. While other groups more can sort out which one is better from the Western tradition was adopted and then combined with their own customs that are considered good to be maintained. The opponents of power who want to change Indonesia totally with customs and traditions of Western culture will face problems at the end of the story, this attempt will never succeed. Traditions and customs that still survive, it's the nation's identity. It is impossible eradicated, because it is a form of self-existence.

### **Interpretation of discourse markers around the Nodal Point**

Nodal Point or privileged discourse marker is defined earlier, can be considered as the big ideas be voiced in a discourse. Ideas in written discourse can actually be divided into two: the idea that is macro and specific idea that appear as the idea of belonging to an individual that is micro and emerge real or hidden as a topic or theme of discourse. Global notion of a written discourse derived from a combination of micro ideas of individuals. It is an abstraction of the whole micro idea of discourse embodied in individual texts.

While the micro idea embedded in the form of topics in the written discourse, and scattered in the form of motifs. These motifs are present in the form of concrete as a discourse marker in the form of words, phrases, sentences, and socio-cultural context of his time. Social and cultural context existing in texts belonging to this individual is tangible, can be read directly because the speaker (narrator) narrate it to the listener (reader). Simply by taking into account the properties of the context of the discourse made explicit in the text, then motifs of the topic of a written discourse can be presented.

## **EXPLANATION OF THE TOPICS IN THE COUNTER DISCOURSE OF POWER**

The topics that emerged from the observations of discourse markers located around the Nodal Point counter discourse of power, actually the individual ideas that spread in each text.

Protest and criticism is the embodiment of the ideas which spread within individual texts. Dissatisfaction to the existing social order is one of the topics of discourse that can be interpreted from discourse markers that are present in the text, either explicitly or implicitly. Below are presented some criticism categories along with the explanation

### **Critics of the local customs: Marriage Problems**

Cons discourse of power emerged as a reaction to the former power long dominated the lives of the people who are feudalistic and colonialist. Feudalism is a system that is formed in a slow dynamics agrarian society. In feudal culture, society is divided into grade levels based on land ownership. Someone whose possessed more extensive soil and rich, was getting higher social class. People with high social class tend to look down upon the people of lower social classes beneath it. While people with a low social status, finally unconsciously make the distance with the social status of the person on it. Their relationship tends to employer-employee relationship. This pattern makes the relationship in the feudal system into a formal and rigid.

The pattern of employer-employee relationships are prevalent in feudal society, it's not just exist in a patriarchal social system, but also the inevitable growing in the matriarchal community, as in Minangkabau, West Sumatra. Patterns feudalistic dominated almost the entire archipelago, and not least in the Minangkabau Padang, which may be said to be in a situation egalitarian society with the presence of consensus among the system of tribal. Here, everyone is free to express his thoughts, yet is inevitable pattern of relationships that look down on people who do not have the "nation", meaning that no degree of nobility. In a marriage, if the relationship that exists between the nobility of men with women from among the common people, then such relationships are usually looked down upon. Because the men of the "good, the child of the country head, the prince of the honourable, the offspring of the great Sultan" would be in violation of customary when he is not married to a woman affluent, even though they were from the same tribe (St. Iskandar, 1928). Similarly, if the marriage occurred among women of high degree, with a man "does not have tribes, an outcast child and is not considered valid in the tradition of Minangkabau" all the more so if he is not affluent (Hamka, 1939), their marriage will be looked down upon and despised.

Other marital problems was became so severe criticism in the counter discourse of power is the problem of forced marriage. Here is said directly how dangerous the forced marriage, which is not along with the love of two beings. Therefore, it becomes obligatory for anyone who knows it, to throw or not to use the customs and habits that bring accidents to humans. Moreover, a hasty marriage usually destroy women. She was married by her parents to the man who did not her like. Such marriage often ends horrors (Siregar, 1936: 70).

### **Critics of the local customs: Inheritance Issues**

In Minangkabau, the land still controlled jointly by a large family called "the right of the tribal land"; Inheritance rights of tribal arranged matrilineal. The institutions of tribes still play a role in determining the distribution and use of the land or tribal land. And the tradition of mutual assistance are the basis of everyday life in the villages or nagari, such as customary words "the tribe was seutang sepembayaran and sepiutang sepenerimaan". (St. Iskandar, 1928: 234). This custom proverb was heavily criticized because they no longer fit with the times, in which the number of people of the Minangkabau tribe has grown a lot, so it is no longer possible debt borne by someone else although they are still in the same tribe.

Not only debt regulated by custom, which has been criticized in the counter-discourse of power, but also the system of polygamy in marriage. Because people still recognize the inheritance right of the tribe who is arranged a matrilineal, then the system of polygamy in marriage get a fertile growing place in Minangkabau. Men can marry and divorced please himself for a lifetime. Generally feudal lord had married and divorced with dozens of women. They do not need spend for that great cost. Landlords and rich nobles in general can perform a marriage many times, not only because it does not need to spend huge costs but also because they were given a "money pick-up" by the family of woman whose would he married. It is a habit that is embarrassing, but for some people a proud. Meanwhile on the part of women, to earn much money they have to pawn fields. Not an oddity in Minangkabau society when the feudal lords or nobles famous have wife up to four people at once, especially because it does not conflict with Islamic Sharia's law.

Critics refer also to the custom justify a father does not need to give the inheritance to his children, on the grounds that the children of the marriage has been entered into the tribe or clan of the maternal lineage. If the father has the land of inheritance rights of his tribe, then when he died inheritance rights were returned to his tribe. Ever even occurred an event in which the bestowing of father to his son during his life, sued and prosecuted by the nephew in the court. They even saw it as a good things and not censured (Hamka, 1939: 68). Nephew who according to custom obtain a supporting of his maternal uncle, objected when the property that became his part was given to someone else, namely the child's own uncle. It is inheritance custom confusing, as well as need to obtain an evaluation to the effectiveness of its application in social life.

### **Criticism toward Western way of life**

In addition to criticism of the local customs were considered outdated and old-fashioned, which is no longer in line with the progress of time and human progress, also was revealed some of the progress made by a human, which clearly shows the culture and civilization of foreign involvement in its formation.

The association between men and women who looked too closely and freely in public would cause a scandal if it occurred in the community in a small area. Unlike the case when it occurs in urban areas. Urban communities, with a population that is composed of various ethnic groups, are able to receive and understand how such promiscuity. Not so with the people in a small area that is homogeneous, and is still strongly bound to the local customs. Even more so when it shows the relationships between indigenous youth with a foreign girl, who was, in the early of the twentieth century, is still regarded as part of the colonizers.

Criticism was also levelled against the attitude of the modern woman who accept the Western views about the emancipation of women. Women want the same rights as men, while men at that time cannot fully accept. When applied in domestic life, ultimately cause a lot of problems, because the man of that era are still many who want to be served as the pattern of domestic life in times past. Educated men may have already advanced a few steps, but the mind and his views on women, especially with regard to domestic work which is attached to the female, is still running in place. "The rights of women are taking care of her children, taking care of the household. (...) When her husband came home from work, (...), invite him to sit, took off his shoes." (Pane, 1938: 16). Many of the men who still yearn for the female figure of 'traditional' that can serve with a gentle, caring and patient.

However, with the advancement of women's education many things known in the West was fought well here. Modern women expected to be born in Indonesia are modern women who

know their rights and obligations. Thus the idealistic criteria of modern Indonesian women are expected to attend are (1) educated (2) put thoughts over feelings (3) active role in social change (4) do not forget nature as women (5) becomes an equal partner with her husband and (6) can express ideas orally and in writing (Denny Prabowo in Alisjahbana 1937: xii).

### CONCLUSION

After examining the investigation method of linguistic data of a discourse of power that allegedly contained in Indonesian narrative texts early twentieth century, it can be concluded that this method empirically is successfully functioned. With the result that it can be shown not so much different from what is generated from previous studies of the colonial text, with only slight shades of difference. But essentially, the method of "investigation" to linguistic data was successfully applied to other objects studies that also voiced discourse of power.

Having regard to the description of the context of the discourse of power presented in these texts, we can identify the real idea hidden in the form of "counter-discourse of power." Furthermore, through the interpretation of the language data in the form of words, phrases, and sentences obtained through investigation method which tested against the cons of the discourse, obtained the meaning that Indonesian narrative texts voiced criticism toward the local customs, such as marriage and inheritance issues, as well as criticism to the behaviour of westernized.

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## Issues and Options for Adapting Social Protection Strategies to Climate Change Shocks in Bangladesh

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### ABSTRACT

Managing the impacts of climate change requires an integrated approach of social safety net (SSN) that brings together risk-coping, mitigation and management/adaptation in the short and long terms. Furthermore such an approach needs to be implemented at national level in Bangladesh due to climate change vulnerability and widespread poverty in the population. In terms of government interventions, this means coordinating and integrating disaster risk management (DRM) programmes, SSN programmes and agricultural development interventions intended for climate change adaptation (CCA). The study has identified both *ex ante* and *ex post* mitigation/adaptation strategies with a multi-sectoral integration model with covering line ministries or departments on how SSNs can help rural households respond to more severe and more frequent climate-related shocks that they are facing. The intention is to build synergies with DRM and CCA interventions, for a continuum of responses from relief to SSNs to resilient rural development. The issues and options that addressed in the study may play an important role for designing and implementing social protection (SP) strategies with utilizing the climate funds in Bangladesh. The GO and NGO portfolios along with community based organizations and local leaders should have to work together with climate victims to deliver the most suited SP system in Bangladesh. With considering necessary avenues, some of the existing social safety nets tools like *food for work (FFW)* or *cash for work (CFW)* are to be climate proofed which not only support to the climate poor but also boost the agricultural production in the country.

**Key words:** Climate change, climate funds, coping, mitigation, policy, resilience, social safety net, vulnerability.

### INTRODUCTION

Climate change threatens to detail progress in poverty reduction and achievement of the Millennium Development Goals (MDGs). The least developed nations, which have economies largely dependent on agriculture, limited scope of social protection (SP) and very little risk mitigation infrastructure, are the most vulnerable countries to climate change (Stern, 2006; Morton, 2007). Likewise, the poor, who live and work on marginal lands, engage in unskilled labour, and have very limited access to capital, are the most vulnerable populations to climate change. Furthermore, the risk of catastrophic weather shocks contributes to trapping poor households into chronic poverty (Barnett et al., 2008). Continuing climate change would put extra burdens on the social and economic challenges especially for the poor. Therefore, there is no time to delay for designing the befitted SP strategy to cope with climate change which is the most challenging issue now a days.

Social protection (SP) can broadly be defined as public actions – carried out by the state or privately that enable people to deal more effectively with risk and their vulnerability to crises and changes in circumstances such as unemployment or old age, and help tackle extreme and chronic poverty (Briefing Note, 2006). The SP is concerned with preventing, managing, and overcoming situations that adversely affect people's well being. The International Labour Organisation (ILO, 1996-2014) has set out three major dimensions of social protection: (i) extending the coverage and effectiveness of social security schemes; (ii) promoting labour protection, which comprises decent conditions of work, including wages, working time and occupational safety and health, essential components of decent work; and (iii) working through dedicated programmes and activities to protect vulnerable groups.

Due to spatial geo-morphological conditions, Bangladesh is one of the worst victims of climate change in the world. Regular river floods affect 20 percent of the country, increasing up to 68 percent in extreme years. The cyclones that stroke Bangladesh coast are so frequent that on an average only 1.2-year is enough for a cyclonic hit (Awal et al., 2013). Due to the climate change effect and consequent sea-level rising, saline water intrusion occurs in the dry season as much as about 100 km inside the Bangladesh from the Bay of Bengal along the tributary channels and rivers that resulted about one million hectare land unsuitable for crop production. Riverbed siltation in parts of south-west Bangladesh is leading to prolonged water-logging in recent 2 to 3 decades, with consequent losses in agricultural production due to the inundation of more than 128 thousand hectare crop land (Awal, 2014). Monsoon break caused severe drought that covered a vast areas in north-western part especially high Barind tract of Bangladesh. All of those climate shocks or stresses negatively affect the agricultural production thus hampered the life and livelihood of people. Climate change is likely to increase the frequency of the aforesaid negative events to the coming days. Widespread poverty in the population has additionally compounded the situation vulnerable. Hence, no one can think the progress of Bangladesh without adopting proper SP strategy. Therefore, an integrated approach is to be designed that can sufficiently coordinate between DRM, SSN and CCA interventions (Awal, 2013).

Social safety net (SSN) is an important service in risk management where SPs are mechanisms to outspread support to those that have been adversely affected by extreme weather events. These interactions shaped by the government, communities, organized groups, or families are a key component of strategies to minimize expected losses from climate change (Naranjo and Alpizar, 2011). SSN can help households for avoiding irreversible losses from climate shocks that could ensue. Effective SSN programmes (SSNPs) should be seen as a complement to larger efforts to protect livelihoods and undertake reconstruction and recovery. Countries with existing programmess that they can scale up will be better placed to deliver SSNs after climate shocks. Alternatively, the countries that experience regular climate change shocks or stresses like Bangladesh should have to design some climate-proof or climate-resilient type of special SP framework to help vulnerable households for managing risk. Therefore, some issues and options are to be formulated before designing befitted climate resilient SP policies in Bangladesh and thus carried out this study.

## **MATERIALS AND METHODS**

Both secondary and primary types of data have been used in the analysis. Poverty lines data of Bangladesh Statistical Survey (BBS, 2011) which calculated from the Household Income and Expenditure Survey, HIES 2010 dataset with Cost of Basic Needs (CBN) methods were used where any household with per capita expenditure below a given poverty line (2122 k.cal for moderate poor and 1805 k.cal for extreme poor) is considered as poor. With CBN method, poverty lines represent the level of per capita expenditure at which the members of a household can be expected to meet their basic needs that include food and non-food consumptions. The HIES data set was used to document the percent distribution of household with rural and urban



areas received benefits from social safety net programmes (SSNPs) by division in 2010 survey year. Percentage of poor or non-poor climate-shocked households benefitted with SSNP was also determined from publicly accessible HIES (2010) data set. HIES data were analyzed at division level of Bangladesh. Division indicates the biggest administrative unit of government after national. There are only seven divisions in Bangladesh. Budget document on social protection scheme of Ministry of Finance, Government of Bangladesh has also been utilized for analysis. Some other secondary sources of data were collected from published and unpublished reports through personal collection and by consulting with browsing on internet.

Primary data which are mostly qualitative were collected by stakeholder consultation. Consultation meetings were conducted with secondary stakeholders like programme staffs who are working with related tasks in GO and NGOs at national, regional, district and sub-district levels. Relevant officials from line ministries like Ministry of Disaster Management and Relief (MoDMR), Ministry of Agriculture (MoA), Ministry of Environment and Forests (MoEF), Ministry of Fisheries and Livestock (MoFL), Ministry of Water Resources (MoWR), and Ministry of Local Government, Rural Development and Cooperatives (MoLGRDC) working at various climate shocks areas like cyclone, flood, salinity, water logging and drought were consulted. The consultation meetings were done with institutional managers. The government officials and NGO program staffs were contacted prior to the consultation by electronic mail or telephone explaining the objectives of the consultation. Views and opinions were also collected from primary stakeholders or rural villagers, whose livelihoods are affected by the said climate change shocks, about the services including SSN they received from both GO and NGOs portfolios.

## RESULTS AND DISCUSSION

### *Percentage of poverty and SSN beneficiary's households*

The estimates of Head Count Rate (HCR) by divisions in HIES 2010 reveal that Rangpur division has the highest incidence of poverty at about 46 percent especially due to more prevalence of extreme poor, followed by Barisal division 39 percent and Khulna division 32 percent (Figure 1). On the other hand, Chittagong division has recorded the lowest HCR of incidence of poverty at about 26 percent followed by Sylhet division 28 percent and Rajshahi division 30 percent. Generally less percentage of poor is common in urban population than that at national or rural segment across the regions except Barisal and Khulna divisions.

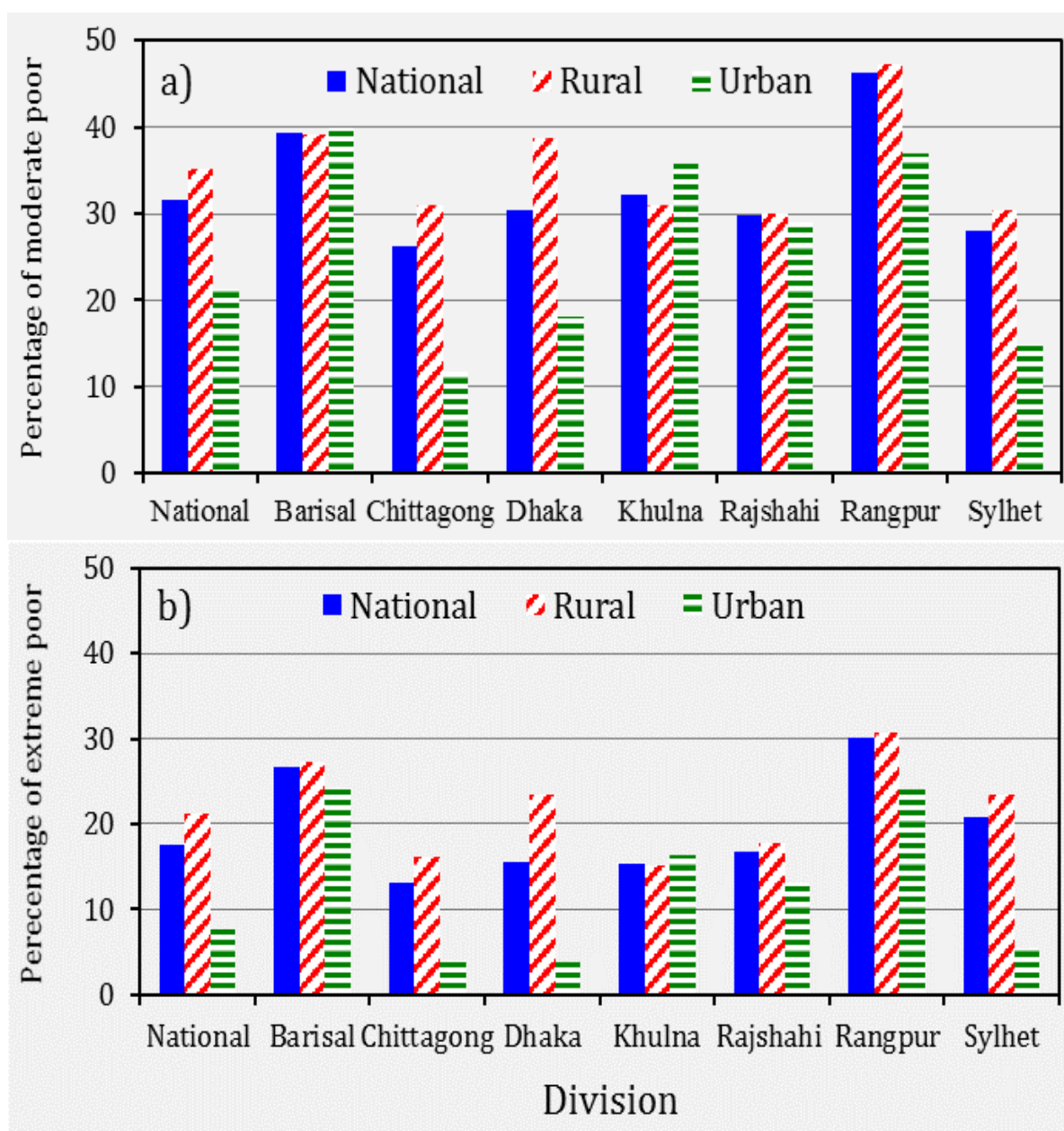
Highest percentage of rural households received benefits from SSNP in Khulna division at 43 percent followed by Barisal division at 37 percent in 2010 year (Figure 2). Proportion of rural households receiving benefit in Rajshahi division is the lowest at 23 percent proceeded by Chittagong division at 25 percent or by Dhaka division 28 percent in 2010 year.

### *Distribution of SSN users by household types, programmes and regions within climate-shocked people*

Throughout the rural Bangladesh in 2010 year, about 47 percent poor households whose livelihood were affected by different type of climate change shocks received benefit from SSNP; Khulna division received the highest coverage of poor households about 73 percent while Rajshahi division received lowest about 22 percent (Figure 3).

It is evident that a remarkable percentage of climate-shocked non-poor rural households from 13 to 54 percent depending on the regions were also benefitted with SSNP (Figure 3). Among the climate-shocked social safety net users in rural Bangladesh on the other hand, a larger portion of non-poor households from 40 to 75 percent depending on the divisions have also

been benefitted with SSNP (Figure 4). Highest percentage of non-poor SSN users was noticed in Barisal division (75 percent) followed by Sylhet division (73 percent) or Rajshahi division (71 percent). If the SSN benefit was distributed exclusively to the poor households instead of those non-poor one it was possible to cover another 22 percent rural climate-shocked poor households and hence the SSN coverage to poor (currently 47 percent) can be elevated to 69 percent nationally. Similarly, such figure can be raised to about 40, 67, 63, 107, 31, 58 and 52 percent for Barisal, Chittagong, Dhaka, Khulna, Rajshahi, Rangpur and Sylhet divisions, respectively. If the SSN coverage elevates to such way the elevated coverage would also deficit except for Khulna division although the operation of such type of safety net distribution exclusively oriented to poor is very difficult. Therefore real selection of SSN users is important in Bangladesh through which at least one-fifth number of poor climate-stressed households those who are currently benefitted with safety net programmes, can be brought under social protection scheme without increasing any budget of the government.



**Figure 1. Incidence of poverty (HCR) by CBN method by administrative division of Bangladesh (BBS, 2011).**

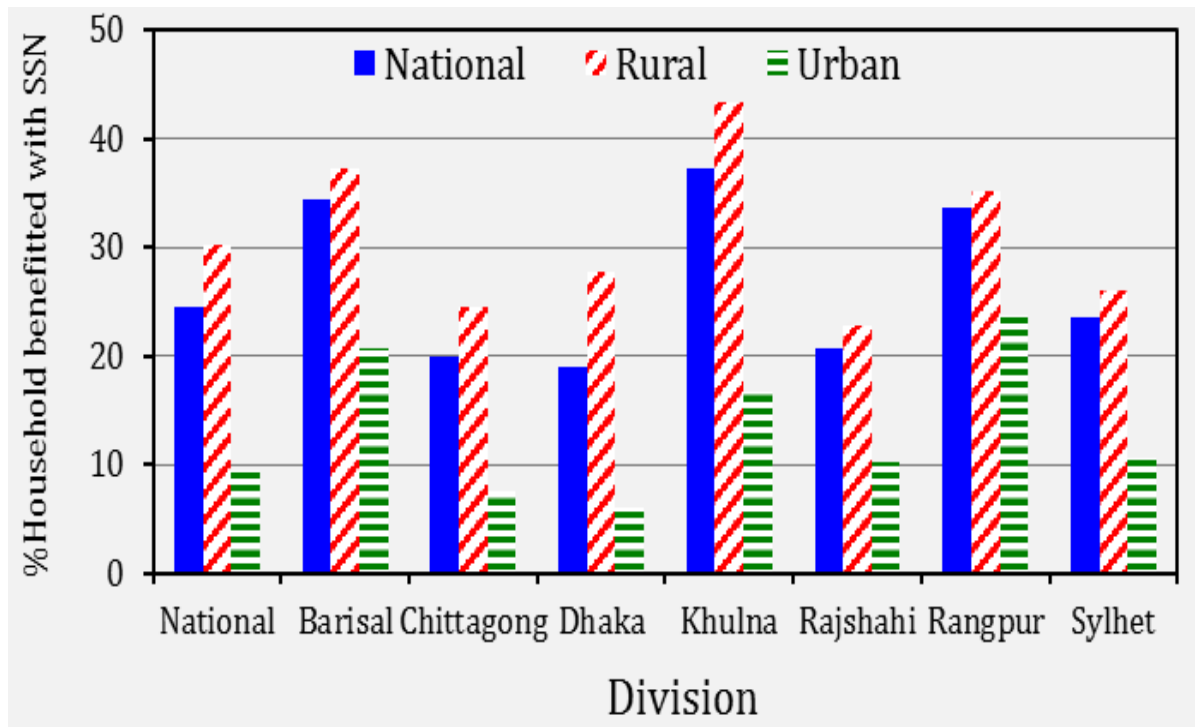


Figure 2. Percent distribution of household received benefits from SSNPs by division in 2010 (BBS, 2011).

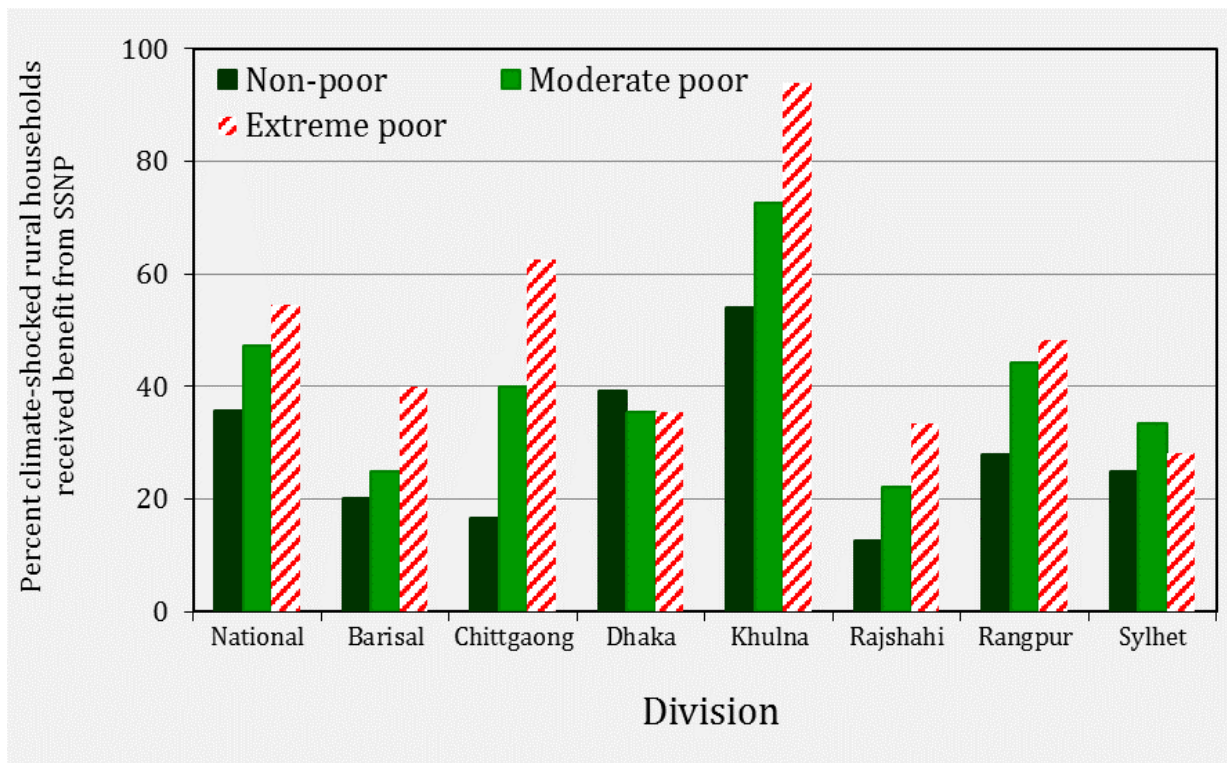
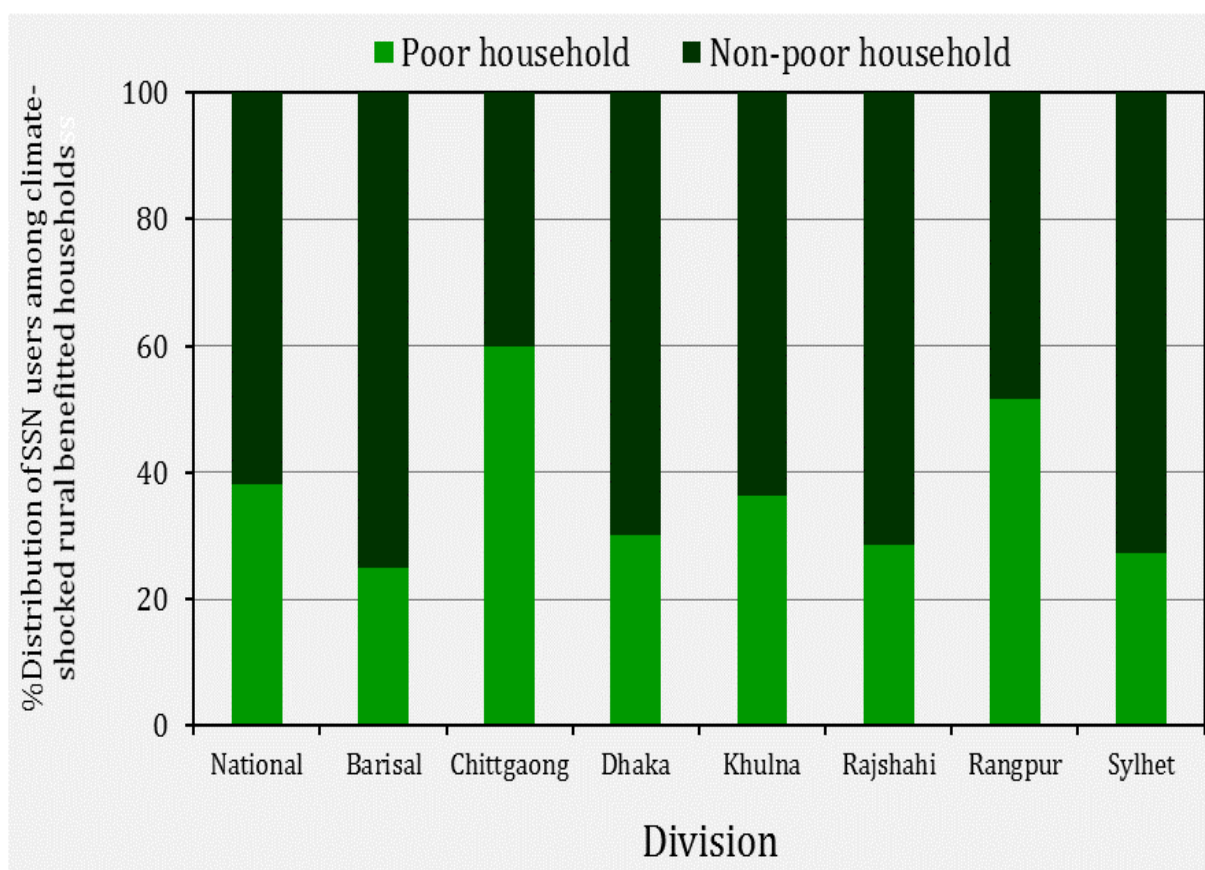


Figure 3. Percentage of poor or non-poor climate-shocked rural households benefitted with SSNPs (HIES, 2010).

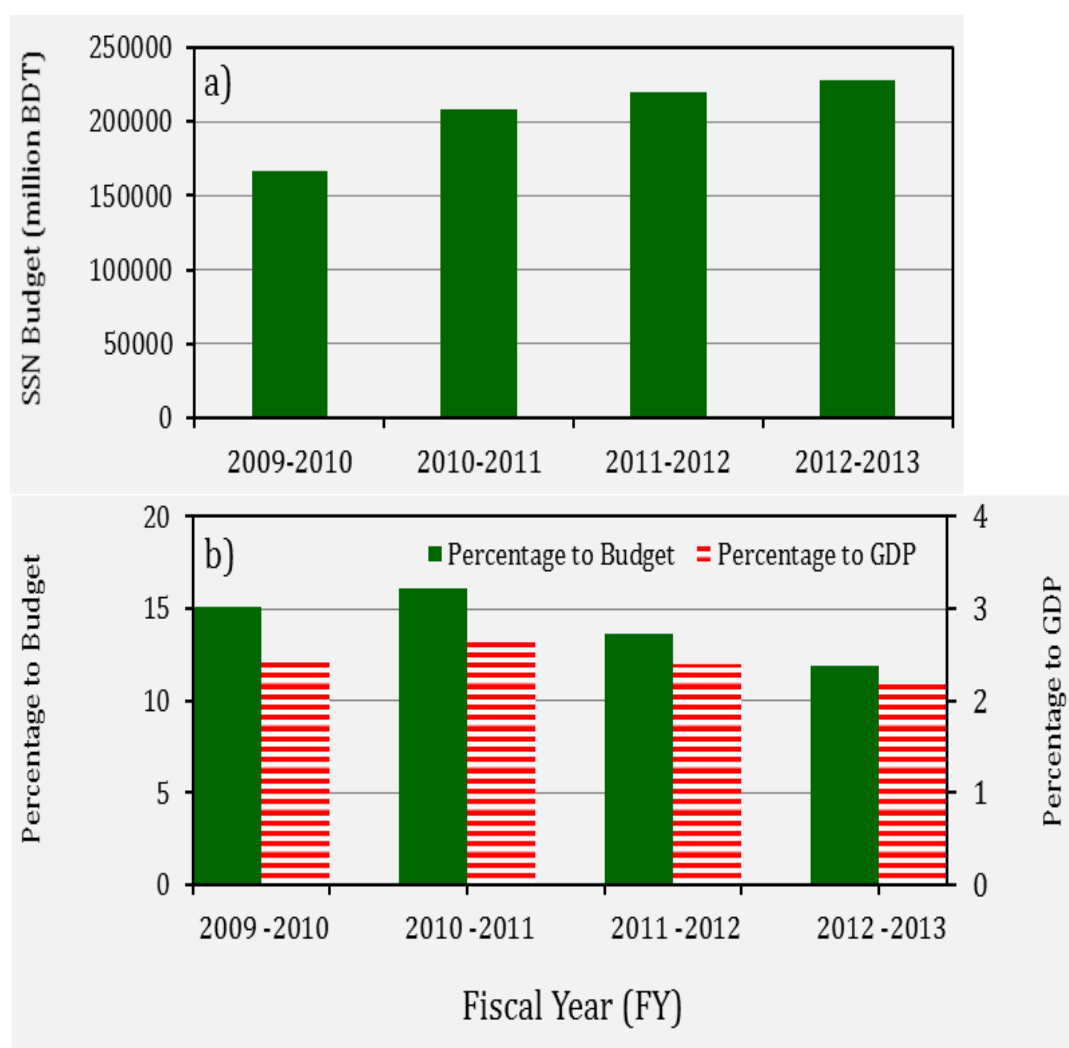


**Figure 4. Distribution of climate-shocked rural SSN users within poor and non-poor households (HIES, 2010).**

### ***Public spending on social safety net services in Bangladesh***

Although the budget for SSN from FY 2009-10 to FY 2012-13 has been increased about 36 percent (Figure 5a) however its allocation to total national budget and Gross Domestic Product (GDP) is gradually being declined since FY 2010-10 (Figure 5b). Approximately 14 percent of the national budget (4 FY's mean) corresponding to 2.18 percent GDP is being utilized for operating the SSN (Figure 5b) through a varieties of programme.

Weigand and Grosh (2008) reported that mean spending in World Bank countries on safety nets was 1.9 percent of GDP and median spending was 1.4 percent of GDP. For about half of those countries, spending falls between 1 and 2 percent of GDP although some variation is apparent. Bosnia and Herzegovina, Pakistan, and Tajikistan, for example, spend considerably less than a percent of GDP, while spending on social safety nets in Ethiopia and Malawi is nearly 4.5 percent of GDP because international aid is counted, but will be more like 0.5 percent if only domestically financed spending were considered. Different opinions are also available for example, Business Recorder (2012) stated that India spends over 2 percent of its GDP on its core safety net programmes. The overall government expenditure on safety net in Asia and the Pacific stands at around 5 percent with wide regional swings. While in Pakistan, the social safety net programmes are fragmented with very limited coverage. Public spending is a mere 2.4 percent of GDP which lacks adequate targeting. So the amount spending on social safety net in Bangladesh seems reasonable as compared to the neighbour or some other countries in the World. However, the intervention should be adapted on the beneficiary selection which is to be oriented to exclusively poor household with some targeted programmes.



**Figure 5. Budget of social safety net (a) and its allocation to national budget and GDP (b). Source: Budget document, Ministry of Finance, Government of Bangladesh.**

### ***Financing on climate change<sup>1</sup> in Bangladesh***

Since the immediate action on the BCCSAP (2008, 2009)<sup>2</sup> was so crucial, the Government of Bangladesh (GoB) initiated with national funds, rather than wait for finance from the

<sup>1</sup> What is Climate Finance? Climate finance was born of the 'polluter pays principle' – the idea that industrialized countries have contributed the most to global warming and should therefore compensate developing nations for the costs they face as a result of climate change. In 2009, leaders of developed countries pledged US\$30 billion in fast-start finance to help developing countries build resilience to the effects of climate change and cut back on their own carbon emissions. That funding, it is hoped, will be scaled up to US\$100 billion per year by 2020 (Climate Governance, 2012).

<sup>2</sup> Bangladesh Climate Change Strategy and Action Plan (BCCSAP; prepared on 2008 and revised it in 2009) which is expected to be the blue print for subsequent integration of climate change issues to six broad areas of intervention like (i) food security, social protection and health; (ii) comprehensive disaster management; (iii) infrastructure; (iv) research and knowledge management; (v) mitigation and low carbon development; and (vi) capacity building and institutional strengthening into the mainstream planning process. A Climate Change Unit (CCU) has been established at the Department of Environment and Forests to coordinate the overall activities on climate change in the country.

international community. At the same time, since the costs involved were far greater than the government could provide on its own, the country appealed to the international community for assistance and donations. Recognising the uncertainties and inadequacies of international adaptation finance from both multilateral and bilateral sources, the GoB decided to establish the Bangladesh Climate Change Trust Fund (BCCTF) based on revenue from the national budget, within a legal mandate by the Climate Change Trust Act passed in Parliament in 2010. At the same time, an alternate Bangladesh Climate Change Resilient Fund (BCCRF - formerly known as the Multi Donor Trust Fund, or MDTF) was created to pool funds from the Development Partner (DP) countries to support Bangladesh in implementing the BCCSAP. The two funds have differing governance and management arrangements, but both are meant to support the implementation of the BCCSAP (Ahsan, 2014).

#### a) The Bangladesh Climate Change Trust Fund (BCCTF)

BCCTF, a block budgetary allocation in the form of an endowment by the GoB that has been established with the revenue budget. Since 2009-10 up to the current 2014-15 fiscal year, a total of BDT2900 crore (BDT = Bangladesh Taka) has been allocated to BCCTF. About 66% of this amount was spent on the implementation of projects/programmes prioritized in the BCCSAP, and 34% was used as a 'fixed deposit' for tackling emergency situation and generating additional money to implement the BCCSAP. The interest accrued on the 34 percent fixed deposit was also spent on project implementation. As of April 2013, 282 projects have been undertaken with an estimated cost of BDT1997.04 crore. Different ministries, departments and agencies of the government are implementing 219 projects while 63 projects are being implemented by NGOs. Among the government projects, 31 have already been completed. The financial management of NGO projects has been vested to Palli Karma- Sahayak Foundation (PKSF). So far, BDT25 crore has been allocated to PKSF (BCCT, 2014).

The BCCTF was used to finance public sector and non-government projects mainly related to agricultural research, mitigation, adaptation and disaster risk reduction, and knowledge generation. A Climate Change Unit, established under the Ministry of Environment and Forests (MoEF), serves as a secretariat for the BCCTF. The Unit is headed by the Secretary of the MoEF, and coordinated by an additional secretary of the ministry. It is responsible for ensuring efficient implementation of the activities funded by the BCCTF.

#### b) The Bangladesh Climate Change Resilient Fund (BCCRF)

Bangladesh Climate Change Resilience Fund (BCCRF) is a coordinated financing mechanism by the GoB, DPs and the World Bank (WB) to address the impacts of climate change. The fund was established in May 2010 with financial support from Denmark, European Union, Sweden and United Kingdom. Switzerland, Australia and United States subsequently joined the fund. This mechanism is enabling the government to channel in over US\$188 million grant funds to millions of Bangladeshis to build their resilience to the effects of climate change. The GoB leads on the management and implementation of BCCRF (BCCRF, 2013). Examples of some projects under implementation are Multipurpose Cyclone Shelter Construction Project (US\$25 m), Climate Resilient Participatory Afforestation and Reforestation Project (US\$33.8 m), Community Climate Change Project (US\$12.5 m), Solar Irrigation Expansion Project (US\$25 m) etc.

An amount of 90% of the total amount would be spent by different ministries ('on-budget' window for public sector projects) plus charged by the World Bank (2-3%) while the rest 10% ('off-budget' window for civil society and private sector projects) would be managed by PKSF to support initiatives taken by NGOs to implement community-driven interventions that build resilience to climate change impacts.

### c) Other climate funds

*(i) Climate Investment Funds (CIF):* The CIFs are a unique pair of financing instruments designed to support low-carbon and climate-resilient development through scaled-up financing channeled through ADB, the African Development Bank, European Bank for Reconstruction and Development, Inter-American Development Bank, and World Bank Group. Since 2008, fourteen contributor countries have pledged a total of \$8 billion to the CIF, which is expected to leverage an additional \$55 billion from other sources. The CIF allocates financing through four funding windows: Clean Technology Fund (CTF; \$5.5 billion) for middle-income countries, Forest Investment Program (FIP; \$639 million) for developing countries, Pilot Program for Climate Resilience (PPCR; \$1.3 billion) for developing countries, and Scaling Up Renewable Energy in Low Income Countries Program (SREP; \$551 million) (CIF, 2014).

The CIF provides 48 developing and middle income countries with urgently needed resources to mitigate and manage the challenges of climate change and reduce their greenhouse gas emissions. US\$110 million in grants (45%) and near-zero interest credits (55%) from the PPCR will enable Bangladesh to make strategic investments in critical areas of climate resilience planning and implementation in a manner consistent with its poverty reduction and sustainable development objectives (CIF, 2014).

*(ii) Green Climate Fund (GCF):* The Green Climate Fund (GCF) was adopted as a financial mechanism of the UN Framework Convention on Climate Change (UNFCCC) at the end of 2011 in Durban. The GCF is intended to be the centrepiece of Long Term Financing under the UNFCCC, which has set itself a goal of raising \$100 billion per year by 2020. It aims to make an ambitious contribution to attaining the mitigation and adaptation goals of the international community. Over time it is expected to become the main multilateral financing mechanism to support climate action in developing countries (GCF, 2014). Bangladesh has been nominated by the least developed countries (LDCs) to the GCF to help the country fighting global warming. It is committed that the GCF is to be worked fully from 2014. Bangladesh needs a National Designated Authority as a supra coordination body in respect of climate planning, to attract International Climate Finance including GCF (NGO News Report, 2013).

*(iii) Bilateral Funds (BF):* Lengthy procedure of multi-donor fund arrangement and disbursement has pushed the country to think about the bilateral fund. DPs have different types of interventions in Bangladesh that are driven by their own national policies. The US government issues grants to NGOs through a number of different agencies; however, USAID is its primary distributor. USAID has a 5-year Global Climate and Development Strategy that is effective through 2016. The initiative operates through three objectives and three priority areas of action: Adaptation, Mitigation and Integration; and Adaptation, Clean Energy, and Sustainable Landscapes, respectively. Mostly through USAID, the US government provides climate change assistance to some 50 developing countries, particularly those most vulnerable to climate change (Fundsforngos, 2013a). USAID in Bangladesh spends US\$100 million/year is one of their largest development assistance program in the world.

*(iv) Multilateral Funds (MF):* There are many more initiatives with International Financial Institutions (IFIs) including the WB, ADB, UNFCC, UNDP, UNEP, European Commission etc those who finance to various issues of climate change (Fundsforngos, 2013b). The GoB received grants and loans from different multilateral sources including small grant for MoEF from the grant and loan for Strategic Programme for Climate Resilience (SPCR) from PPCR of the CIF of the WB, multi-donor grant for Comprehensive Disaster Management Programme (CDMP) managed by United Nations Development Programme (UNDP), loan from ADB etc.

### *Utilisation of climate funds*

There are so many channels to finance climate change related programmes and projects in Bangladesh. Most of these programmes operating without adequate transparency, accountability and appropriate participation of people, and civil and political society (Shamsuddoha and Bijoy, 2012). Relative success amongst the different funding routes should be carefully monitored so that good practice can be shared and further investments channelled in the most effective ways. By this time some questions have been raised regarding the use of climate funds that the spending is not found in transparent way (Daily Ittefaq, 2013). An audit of the funds spent so far is required to ascertain the value of money and prevention of resource waste in various ways including corruption. Transparency and accountability in spending climate funds would help the country to attract foreign funds in future to combat climate change (Daily Star, 2012).

For proper implementation of all type of climate funds a single national mechanism which leads the planning process, financial mobilization, programme and project development, fund disbursement and monitoring and evaluation is essential ([http://www.ti-bangladesh.org/files/CFG-Assesment\\_Working\\_Paper\\_english.pdf](http://www.ti-bangladesh.org/files/CFG-Assesment_Working_Paper_english.pdf); accessed on December 17, 2014). Policy coherence couldn't be ensured unless a single national mechanism is in place.

Either the GoB should introduce this or the donor agencies should put this as a mandatory process for all countries to follow towards receiving any form of financial and/or technical support from them (Mukta, Z.H., unpublished). More capacities to develop robust programmes and spend money effectively are needed. There is also need to coordinate the related tasks more effectively. Project evaluation must be needed transparently.

### ***What institutional constraints exist for getting ministries to coordinate on SSNs in the context of climate change in Bangladesh?***

Bangladesh saw the greatest momentum for integration among the SSN, DRM and CCA interventions, making it a good entry point into the region, for building a coalition of adapting social protection partners and thereby spread learning and good practice to other countries (Arnall et al., 2010). The country is also quite advanced in terms of setting up systems of SSN, but they are not always reliable or as prepared for disasters as might be expected. Some institutional constraints are existed to getting ministries to coordinate on SSNs in the context of climate change. The general SSN services of Government of Bangladesh (GoB) are primarily poverty response while only a little effort is rendered to climate change issue. Additionally, all poor are not benefitted with SSN services while a segment of non-poor are also benefitted from that.

The Ministry of Disaster Management and Relief (MoDMR) is the primary office in Bangladesh coordinating government disaster management efforts. Department of Disaster Management (DDM) serves as a technical arm to the MoDMR, overseeing and coordinating all disaster (including climate shocks) management activities from nation to grassroots level and maintaining liaison with government agencies, donors, NGOs to ensure cooperation and coordination. The DDM is also responsible for designing and channelling the services related to VGF, TR, GR and FFW programmes. The Department has also a unique institution, Comprehensive Disaster Management Programme (CDMP) to play flagship role to response to any disaster. The Climate Change Cell (CCC) is one of the core programme components of CDMP established as a unit of the Department of Environment (DoE) of the Ministry of Environment and Forests (MoEF) which acts as a central focus for the government's climate change related work that has made significant contributions to increasing the nation's capacity to respond proactively to disasters.



Ministry of Food plays an important role as its duties in disaster management as: (i) incorporate DRR (disaster risk reduction) considerations into the national food security of the government; (ii) consider current and future disaster risks in the estimation of food stock requirements; (iii) consider current and future risks while designing new storage facilities; (iv) issue necessary orders with the instruction to the relevant departments to ensure implementation of the risk reduction policies.

The administration and implementation of SSN projects like *Food for Work* programme which operated in dry agricultural slack season, is highly centralized where local governments submit project proposals that are reviewed and supervised by national-level technical departments like departments of roads, agriculture, and so on. A long time is therefore needed for descending the decision to the local level through a series of departments which delays to start the project works.

The GoB's post disaster response is to deliver immediate food assistance along with other basic needs to the climate victims. In addition GoB serves the climate stressed people at different times especially rainy or flood seasons with a few SSN tools named Vulnerable Group Feeding (VGF), Test Relief (TR), Gratuitous Relief (GR) etc which are also primarily poverty response not the climate change. Eventually the relief materials are distributed to the climate victims through the union council under the Ministry of Local Government, Rural Development and Cooperatives (MoLGRDC). Like other public agendas, the money related to safety net services is to be released from Ministry of Finance (MoFin) which lengthening the distribution of safety net services.

On disaster therefore, the decisions on safety net services (VGF and TR goods, for example) are to be passed a long channel from concerned department of centre of country to union council through district and sub-district offices. Since the associated institutions belong to the different ministries, ultimate success on disaster response becomes limited. Eventually most SSN programmes are implemented through local government like union council or LGED, unwanted intervention at the various institutions especially at sub-district level may appear as another constraint for ensuring better safety net services to the climate poor. It appeared during the stakeholder consultation that involvement of multi-institutions in the safety net delivery system is the main institutional constraint for getting ministries to coordinate on SSNs in the context of climate change in Bangladesh.

### ***Drawing implication for designing and implementing social safety net in Bangladesh***

Climate change poses the versatile threats to Bangladesh. Firstly, it may be expected to increase the unpredictability of extreme weather events like floods and cyclones. Secondly, there are likely to be other changes such as ecosystem degradation due to slow onset climate stresses, such as sea-level rising, water logging, salinity, drought etc which reduce the availability of food, fuel, water and other basic needs. Thirdly, bad impacts on livelihoods, which together reduce the capacities of poor households to cope with disaster risks. Although the Government of Bangladesh is operating over a hundred of SSN programmes for better graduation of livelihood of poor and vulnerable segments of people. Overall the entire effort seems satisfactory, but with a closer look it couldn't reach to a distinct mark due to the following reasons: (i) mistakenly inclusions of non-poor households in the programmes, therefore it is not possible to consider many real poor, (ii) major services are intended to poverty response rather than the real climate victims, (iii) many programmes have an insufficient number of beneficiaries as compared to size of poor, (iv) insufficient number of days in workfare programmes in a year, etc. Policy makers may often express their satisfaction with operating a larger number of SSNs but most tools don't really serve the climate poor rather some robust climate proofed ones could have actually hurt them. Nevertheless the minimisation of institutional barrier due to multi-administrative

layers for getting ministries on course of a disaster, and unwanted intervention from administration for selecting real climate victims may bring some additional successes.

Climate hazards seriously disrupt crop production which distorts poor's livelihood through insufficient production of local food and their unemployment situation as their livelihood is primarily agrarian. Improved agricultural production system may reverse the situation substantially through reducing disaster losses and by building the resilience of communities to disasters. Climate funds may explore the befitted production systems through operating adaptive research projects on real climate issues in real places. Eventually, adaptive capacity of climate poor dwellers against climate shocks and stresses should have to improve that can ensure proper resiliency of the communities. Year-round workfare programmes like *food for work* or *cash for work* (now operating in slack dry agricultural season only) with engaging climate victims from chronically poor households can strongly be considered in this regard which may ensure the income flow to climate victims (Subbarao, 2003). Bangladesh has a long history and experience with public workfare programmes to fight against chronic poverty but the activity is dropped to a minimum level during the long rainy season. Considering the socioeconomic aspects of Bangladesh, an opportunity for widening the areas of workfare programme round the year can be explored from global arena, like cleaning of infrastructures; construction, rehabilitation and repair of irrigation and drainage canals, water supply and sewerage systems; renovation of traditional water bodies; construction/rehabilitation of basic health care facilities; improved land productivity, soil fertility restoration/increased land availability/improved market infrastructures (access); forestry management/reforestation; environment protection; drought proofing activities; social services; information technology projects etc (del Ninno and Subbarao, 2009).

The overall success cannot be achieved until the entire paradigm is reached to a proper integration of SSN, DRM and CCA interventions. The concept of Adapting Social Protection (ASP) is a more climate-resilient livelihood approach which is considered as a good starting point assumed that combining the components of those domains can improve the efficiency of interventions, lowering vulnerability and increasing resilience (Davies et al., 2009).

The term *resilience* is increasingly used in the development community to indicate a proactive asset/livelihood approach to SSN, DRM, CCA and food security that specifically targets poor and at-risk individuals, households and communities (Siegel, 2011). The role of *ex-ante* and *ex-post* SSN services as well as the multi-sectoral coordination among the line ministries such as the Ministry of Disaster Management and Relief (MoDMR), Ministry of Agriculture (MoA), Ministry of Environment and Forests (MoEF), Ministry of Fisheries and Livestock (MoFL), Ministry of Water Resources (MoWR), and Ministry of Local Government, Rural Development and Cooperatives (MoLGRDC) for adopting resiliency due to climate change shocks and stresses in rural Bangladesh can be outlined in Figure 6.

In addition to the existing vulnerability, climate shocks fall poor to additional vulnerable condition due to loss of their income sources and destroy of houses. Community as a whole may also suffer due to disruption of infrastructures and institutions. Hence the suffering of shocked people might be reduced with providing structural supports like cyclone or flood protection centre followed by transfer of *ex post* SSN services with food, water, medicine, money and other basic needs. For providing better services to the different categories of households, following options can be considered aftermath a disaster:

- For saving life, landless/micro holding ultra poor are to be supported with food with other basic needs and employment opportunities (e.g. *food for work* or *cash for work*);
- Small households are to be benefitted with food, cash supports and other basic needs for saving their life and starting their own income generation activities;

- Medium households are to be benefitted with cash/bank loan with minimum service charge, agricultural extension services and necessary input supports for encouraging them to return back into agricultural production.

Proper CCA can be achieved through promoting the adaptive capacity of the climate affected households with creating income generation activities on local needs. Some additional risks can also be transferred through asset formation or adopting insurance scheme. With deploying possible all sorts of *ex ante* and *ex post* strategies the vulnerable community might be more resilient or more adaptive to avert climate change risks, and thus CCA is ensured. However, proper importance should be given on the adaptive researches of climate change issues through utilizing the climate funds, thus befitted strategies would come out for risk mitigation. The GO and NGO portfolios along with community based organizations and local leaders should have to work together for delivering the most suited SP to climate victims in Bangladesh.

#### a) Measures against climate shocks/sensitivity

The role of measures for managing the sudden climate change shocks or disasters (i.e. sensitivity) like flood of cyclone events can be addressed as:

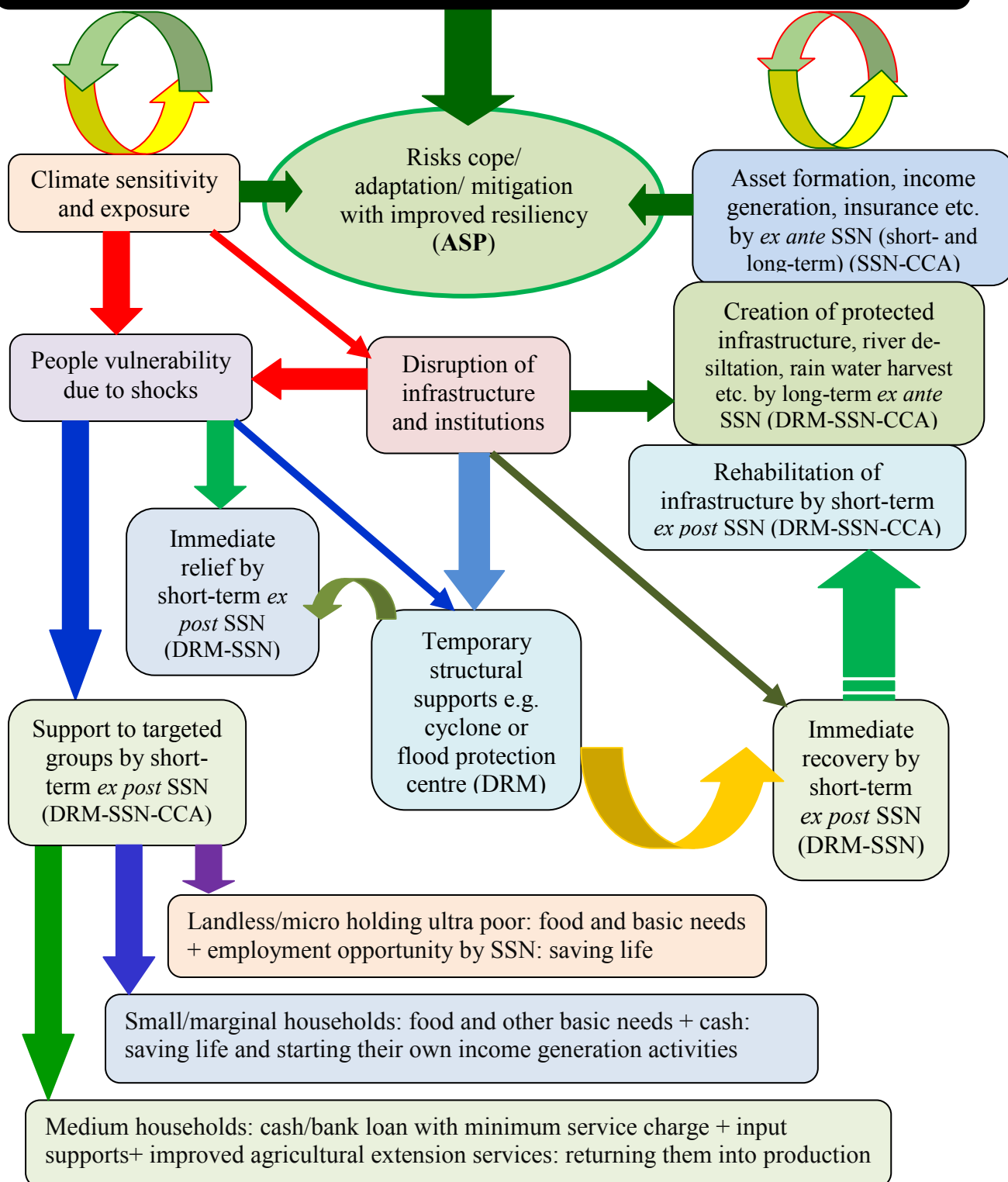
*Ex ante* measures:

- A good number of multi-tier cyclone (with coastal design) and flood protection centres can be built allowing enough provision to save the livestock, food materials and important household assets in addition to people during disasters. Other than the disaster time, those cyclone and flood protection centres might be used as educational institutes like schools and colleges or other business centres etc;
- Disaster preparedness training and related other services should be provided to the people of climatically vulnerable areas;
- Rural roads or embankments, public ponds and other infrastructures should properly be rehabilitated, and maintained with planting monocotyledons trees like palmyra palm, date palm, coconut, betel nut etc on their slopes. Public safety net instruments like *food for work* or *cash for work* can be deployed to that works;
- Income generation activities should be enhanced rather than relief. Because unconditional relief aid reduces the resiliency of climate-stressed people.

*Ex post* measures:

- During or aftermath of a disaster, an integrated safety net delivery system in coordination with GO and NGO bodies, national and international donors should be developed which widens the number of beneficiary through eliminating the repetition of same beneficiary in the different programmes;
- In addition to food aid the affected household should be provided with safe drinking water, health facilities, cloths and other basic needs;
- Recovery activities should be done immediately after a disaster. Affected households should be benefitted with bank loans with zero or minimum service charges for recovering their houses or other productive assets like livestock;
- Rehabilitation activities should be prioritized to agricultural activities with providing necessary subsidy like seeds/seedlings, fertilizers, pesticides, cash incentives, and improved extension services etc and rebuilding of infrastructures.

# Adaptive Researches on Climate Change Issue



**Figure 6. Proposed conceptual model/framework for integrating CCA, SSN and DRM interventions through multi-sectoral planning in rural Bangladesh. Level of integration for an effort is shown within parenthesis where, SSN: social safety net, DRM: disaster risk management, CCA: climate change adaptation and finally, ASP: adaptive social protection.**

## b) Measures against climate stresses/exposure

The climate change stresses (i.e. exposures) like global warming, sea-level rising, water logging, salinity, drought etc have far reaching consequences to agriculture, life and livelihood for any nation of the world. The managements of such slow onset but long-term consequences are more critical than the sudden shocks or disasters. Therefore, initiation of new adaptive researches and continuation of on-going projects on national or regional climate change agendas for adapting the agricultural enterprises to gradual changes of climatic parameters may play some decisive roles. There are some options for developing a climate-resilient agricultural intervention like:

- Exploring the new avenues of adaptive researches on climate change agendas with proper utilising the climate funds like BCCTF, RCCRF, CIF, GCF, BF, MF etc;
- Wide dissemination of output of adaptive researches like salinity/submergence/heat/drought tolerant crop varieties along with production technology in climate stressed areas through seminars, symposia, mass media, seed fairs etc, and their proper extension to the end users i.e. climate stressed producers or growers;
- Changing of cropping patterns with land/water zoning and extension the suitable production technology. For example cultivation of rice can be suggested in mild salinity affected areas whereas shrimp or crab in extreme saline zone like exposed coast of Shyamnagar Upazila (an upazila means a sub-district), Satkhira District;
- Deploy more workforces round the year from chronically poor households with FFW or CFW programme to agricultural development activities like rain or flood water harvest, construction of mini-pond, irrigation channel/river de-siltation etc for efficient utilization of salinity and drought prone or water-logged land in crop production purposes. The programme can also be extended to tree plantation with their proper nursing in road side, barren or deforested land etc;
- Design and implementation of the productive safety net programmes like cash transfer to climate-stressed growers.

## CONCLUSION

The issues and options that are addressed in this study may play an important role for designing and implementing social protection to climate change shocks in Bangladesh. GO and NGO portfolios along with community based organizations and local leaders should have to work together with climate victims to deliver the most suited social protection system in Bangladesh. With considering necessary avenues, some of the existing social safety nets tools like *food for work* or *cash for work* are to be climate proofed which not only support to the climate poor but also boost the agricultural production in the country.

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## Translation of the Names of Chinese Calligraphy from Skopos Theory

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### ABSTRACT

Chinese calligraphy is an ancient and historic art. Ranging from seal script, clerical script, regular script, running script, to cursive script, the calligraphy has been sending out the charm of art. Chinese calligraphy is not only a carrier of the Chinese cultural heritage, but also the media to show the history of the Chinese nation of thousands of years. Therefore, Chinese calligraphy is a brilliant art of Chinese culture, and one of the world's unique treasures. Based on Skopos theory, this paper explores the effective translation methods of the names of Chinese calligraphy, and explains Chinese cultural values and the inside meanings.

**Keywords :** *Skopos Theory, Chinese Calligraphy, Translation Method, Writing Stroke*

### INTRODUCTION

Calligraphy, native to China, is a traditional art with a long history and national characteristic features. It is the happy result of the painstaking and creative efforts of generations upon generations of artists. It has many styles, ranging from seal script (篆 *zhuān*), clerical script (隶 *lì*), regular script (楷 *kǎi*), running script (行 *Xíng*), to cursive script (草 *cao*) etc., and the styles change with the passage of time, shifting from charm, artistic conception, image, to delight. Its functions also vary from time to time, from self-enjoyment to self-cultivation. Calligraphy is known for its beautiful shape, rich emotion and artistic conception. It is often likened to a picture, a piece of music and a poem. Its flowing strokes not only remind us of the beauty of nature, but also express the beauty of human spirit. Chinese calligraphy is not only a splendid flower in the garden of the Chinese culture, but also a shining pearl in the treasure-house of arts of human beings.

The art of calligraphy is a direct result of Chinese characters. With the elapse of time, five major scripts, namely seal script, clerical script, regular script, running script, and cursive script, have evolved from Chinese characters in the course of their development. And each script has resulted in different styles and schools of calligraphers. These different schools of calligraphy produce different artistic effects through various ways of writing. Of the five scripts, seal script boasts the longest history. Inscriptions on oracle bones, those on ancient bronze objects and those on drum-shaped stone blocks belong to the system of greater seal script (大篆 *da zhuān*), an ancient style of calligraphy, current in the Zhou Dynasty, the characters being non-simplified, thus having more strokes. After the unification of China by Qinshihuang, the first emperor of China, another style of calligraphy, lesser seal script (小篆 *Xiao zhuān*) was adopted for the purpose of standardizing the script. Lesser seal script is characterized by its roundness and naturalness, all the strokes more or less the same in thickness, and the character looking comparatively longer. It is on the basis of lesser seal script that clerical script came into being in the Qin Dynasty. Known as the official script of the Qin Dynasty (秦隶 *qín lì*), it is famous for its squareness, smoothness and naturalness, crooked lines becoming straight ones. In the early days of the Western Han Dynasty, clerical script became the official script of the Han Dynasty (汉隶 *hàn lì*), the character becoming flatter, with the appearance of the

turning stroke, left-falling stroke, right-falling stroke, etc. Regular script and cursive Script are noted for their large number of schools and styles, and therefore they are the most influential scripts. Running script is something between regular script and cursive script.

## SKOPOS THEORY

### Skopos

Skopos is a Greek word for “purpose”. According to Skopos theory, the prime principle determining any translation process is the purpose (Skopos) of the overall translation action (Nord, 2001: 27).

In the field of translation, there are three possible kinds of purpose: the general purpose aimed at by the translation process (perhaps “to earn a living”), the communicative purpose aimed at by the target text in the target situation (perhaps “to instruct the reader”) and the purpose aimed by a particular translation strategy or procedure (for example, “to translate literally in order to show the structural particularities of the source language”) (Vermeer, 1989: 100). The term Skopos, however, usually refers to the purpose of the target text.

Apart from the term Skopos, Vermeer uses the related words—aim, purpose, intention and function. “Aim” is the final result which an agent intends to achieve by an action; “purpose” is a provisional stage in the process of attaining an aim; “function” refers to what a text means or is intended to mean from the receiver’s point of view; while “intention” is conceived as “an aim-oriented plan of action” on the part of both the sender and the receiver, pointing toward an appropriate way of producing or understanding the text (Nord, 2001: 28). These four concepts are very confusing and thus sometimes are considered equivalent. As a matter of fact, they are not identical. “Intention” is defined from the viewpoint of the sender, while “function” is from that of the receiver. An action has an “aim”, while a translation text has “purposes”.

### Three rules of Skopos theory

#### Skopos rule

The central and primary idea of Skopos theory is that “the translation purpose justifies the translating procedures” and it is generally expressed as “the end justifies the means” (Nord, 2001: 29). Therefore, in Skopos theory, the top-ranking rule that any translation should observe is the “Skopos rule”. According to the Skopos rule, the translator must do translation in accordance with some principles respecting the target text by adapting to the addressee’s background knowledge, expectations, and communicative needs, since the reader, or rather, the addressee, is the main factor determining the Skopos.

#### Coherence rule

The coherence rule specifies that a translation should be acceptable in a sense that it is coherent with the receivers’ situation (Reiss & Vermeer, 1984: 113). Being “coherent with” is synonymous with being “part of” the receiver’s situation. Baker (2004: 236) also points out: the starting point for a translation is a text as part of a world continuum written in the source language. In other words, the target text must be translated in such a way that it is coherent for the target text receivers, given their circumstances and knowledge (Mundy, 2001: 79).

#### Fidelity rule

Since a translation is an offer of information about a preceding offer of information, it is expected to bear some kind of relationship with the corresponding source text (Nord, 2001: 32). Fidelity rule merely states that there must be coherence between the translation and the source or, more specifically, between: the source text information received by the translator;

the interpretation the translator makes of this information; the information that is encoded for the target text receivers (Mundy, 2001: 79-80).

The important point is that the translated text must be loyal to its corresponding source text in a certain level of features, including special collocations, sentence length, grammatical features, or even rhetorical devices, in style, in function, and so on, or to a certain extent between a complete imitation and a complete deviation. It is the translator's task to decide the aspect and the extent of the fidelity, according to his own understanding of the source text and the translation Skopos.

### TRANSLATION OF CHINESE FOUR TREASURES OF THE STUDY

Writing brush, ink stick, Xuan paper and ink slab are regarded as the four treasures of traditional Chinese paintings and calligraphy. They have played a pivotal part in the development of Chinese civilization over the past thousands of years. The names stem from the time of the Southern and Northern Dynasties (420-589 AD). Writing brush and ink stick are two of the legendary "Four Treasures of the Study" tools of Chinese calligraphers. The other vital elements of culture are Xuan paper, and ink slab for grinding the solidified ink stick.



Figure 1. Chinese four treasures of the study

In China, calligraphy occupies a distinguished position in the field of traditional art. It is not only a means of communication, but also a means of expressing a person's inner world in an aesthetic sense. The distinctive and elegant arts of Chinese calligraphy have in recent years taken a prominent place in the international art world, and become the focus of much interest and discussion. A Chinese aphorism goes "To do a good job, one must first sharpen one's tools". An artist naturally takes selection of his tools very seriously. In dynasties of literary prominence, such as the Tang (618-907 AD) and Sung (960-1279 AD) Dynasties, Chinese four treasures of the study made a great contribution to the development of Chinese painting and calligraphy. The popularization of printing and mass production of paper and ink in the Sung dynasty permitted the works of the many outstanding calligraphers who emerged at that time to be widely distributed. Many books published in these early times are still extant today; the fact that the paper remained intact and the ink did not fade away after more than one thousand years is proof of the high quality of workmanship employed.

#### Writing brush

The earliest writing brush that has been found is a relic of the Warring States Period (476 BC – 221 BC). From that time onwards, the brush has evolved into many forms. The nib can be made from rabbit's hair, wool, horsehair, weasel's hair, or bristles, and so on; while the shaft may be made from bamboo, ivory, jade, crystal, gold, silver, porcelain, sandal, ox horn, etc. It is important to see that there can be both soft and hard brushes each producing their own particular styles.

毛笔 (maobi) is one of the most important tools in Chinese four treasures of the study. According to the research, there are four different translations: Brush, Chinese brush, Brush

pen and Writing brush. In the Oxford dictionary, “Brush refers to as an object that you use for cleaning, painting, making your hair tidy etc., made with a lot of hairs, or thin pieces of plastic fastened to a handle expressed the brush is covered with wool to use a tool”. So only one word “Brush” to translate is obviously not able to complete the expression of brush effect. Chinese brush has no specific analysis on the brush. Relatively speaking, Pen brush can show the intended use of the word, but the pen has caused a lot of misleading, for in the survey many people mistakenly understand a brush pen as a special pen rather than a brush. As for writing brush, from the perspective of teleological analysis, everything from reality, writing means writing the word what it appears, the reader will have a very intuitive feel and a visual impression, followed by a brush, which will allow the reader to appreciate more clearly where the brush functions. So based on the skopos theory, translating the word 毛笔 (maobi) should be corresponding with Writing Brush.

### **Xuan paper**

Paper is one of the most famous Chinese inventions. It is widely accepted that paper was invented by Cai Lun in the Eastern Han. Before the existence of paper, our ancestors utilized knots in cords to record events. They then carved on bone, ivory, tortoise shell and bronzes. For very many years they wrote on pieces of bamboo. There is a story that tells how Confucius was such an avid and diligent reader that he would wear away the strips of ox-leather used to bind the pages of bamboo books together. During the early Han Dynasty wealthy people would write upon white silk but this was beyond the reach of the majority as the cloth was so precious.

After the Eastern Jin Dynasty, paper was extensively used instead of traditional writing materials such as bamboo slips and silks. Various methods of producing paper emerged one after another. In the Tang and Song Dynasties, the paper producing industry was very thriving. Celebrated products in best quality appeared one after another. 宣纸 (xuanzhi) produced in Jing Prefecture of Anhui (Xuan Zhou), became the special paper for painting and calligraphy, and was regarded as “the king of the paper”. Xuan Paper is in line with the purpose of Skopos theory which means using some special purpose to be achieved.

### **Ink slab**

砚台 (Yantai) can be translated into Ink Slab, which is the reputed head of the “four treasures”, for its sobriety and elegance have endured the passage of time. From the Longman dictionary, slab means a thick flat piece of a hard material such as stone, while stone means a hard solid mineral substance. It is not suitable to express the ink stone directly. According to the loyalty principle of the skopos theory, Ink Slab is a better translation than Ink Stone.

### **Ink stick**

Similarly, 墨 (heimo) can be translated into Ink Stick. A good ink stick should be ground so as to be refined black with luster. With the invention of paper, ink sticks were improved accordingly. Since the Han Dynasty (206 BC – 220 AD), they have been made from pine soot, mixing with glue, steaming and moulding. In ancient times, the emperor, such as Qianlong in the Qing Dynasty (1644 – 1911AD), had paid great attention to the production of ink sticks and were expert in their appreciation of quality inks.

## **TRANSLATION OF WRITING WAYS OF CALLIGRAPHY**

In China, ancient people paid great attention to calligraphy. It was the essential whereby a candidate could manifest his literary talent in the Imperial Examination, for it gave a first impression to the examiners. Children of high officials had to learn and try to write a good hand; even emperors themselves were good at calligraphy, have left us many examples of his

handwriting on steles in temples and palaces. Calligraphy, like a mirror, is a silent reflection of the soul. It is believed to have verve, optimism, moderateness, or pessimism. Su Dongpo, one of the four litterateurs in the Song Dynasty (960 – 1279 AD), composed many bold and unconstrained ci (词), a form of poetry that flourished in the Song Dynasty), also could write handsome characters in good taste.

Today, although various modern ways have been substituted for the original calligraphy, especially which created with a writing brush, people still love the ancient form and practice it untiringly. During the traditional festivals, propitious couplets are always indispensable decorations each written in a beautiful style.

To practice calligraphy requires the basic tools of Chinese four treasures of the study as well as much concentration on guiding the soft writing brush charged with fluid ink, and writing on the paper where the ink will diffuse quickly. Once the brush movement hesitates, a black mark is created, so speed, strength and agility are the essence of fine artwork. When writing, many calligraphers will forget all worries and even themselves, combining all thoughts in the beauty of their art.

Calligraphy has endured for more than 2,000 years, and evolved into five main ways of writing each with different techniques (seal script, clerical script, regular script, running script and cursive script). Even today, these are still followed and practiced often as a hobby. Calligraphy is not only considered an important means of achieving artistic cultivation, but also an active way to help practitioners keep fit and build endurance, an exercise is believed to be as healthy as Taichi. Therefore, practitioners are advised to follow the suggested instructions regarding writing postures and brush holding.

### **Physical postures**

Calligraphy should be done while seated or standing. For sitting posture, the position of the head, body, arms and feet is important as it affects the writing quality. Generally speaking, the body needs to be as relaxed as possible and all the parts must work as a “team.” The head should be held straight, so you have a better view of the spot on which you intend to write. With your head aslant, you may produce characters that are not so neat and regular. The upper body should be erect, the shoulders relaxed and balanced, and the chest kept a fist’s width away from the desk. With the two arms slightly apart, the writing hand holds the brush, while the paper is held down by the other hand. The feet are evenly apart and relaxed on the ground. With all these parts in harmony and relaxation, the writer needs to concentrate on the writing hand, which will ensure the smoothness of each stroke, instead of playing undue attention to the posture.

More experienced writers often stand while writing, a posture which is also assumed to write larger characters. On the basis of the place in which characters are intended standing postures are of three types. The first position is assumed for writing at a desk by suspending the arm in the air, while lowering the upper body and facing down on the paper. Another posture is adopted when writing on a wall or a board about the height of the body, with the arm naturally extending to reach the spot and the eyes looking straight ahead or up. For writing extra-large characters, the third posture, different from posture two, is a dynamic one and the writer works while moving, with the hands holding a special brush and bending forward.

### **Ways of holding the brush**

The way to hold the writing brush has been a controversial issue, and many calligraphers disagree with each other. A popular manner is called “thumb-fingers method,” which requires a coordinated force of the four fingers and thumb, resulting in balanced and exact movements. In addition, the palm, wrist, elbow and even the upper body also help with the method. The palm

is held in the manner as if you were holding an egg and right above the paper. The wrist and the forearm are kept parallel, while working, to the paper. When larger characters are intended for, the wrist and the forearm need to be suspended so as to coordinate the forces from the finger, the thumb, the palm, the elbow, and the arm, which produces more forceful writing. Furthermore, the position of holding the brush depends on the style intended. When you are writing the regular script, you need to hold the lower part of the shaft---an easier way to handle and move the brush steadily. Holding the upper part of the shaft enables you, when writing the running script or cursive script, to move your fingers and thumb more nimbly and quickly.



Figure 2. Thumb-fingers method

In addition to the “thumb-fingers method,” there are some other ways of holding the brush, such as “four-finger method” and “three-finger method” with the increasing proficiency in writing, many calligraphers adjust their ways of holding the brush based on their creative needs, which varies from person to person. In any case, the standard postures and the cultivation of good writing habits are absolutely necessary for beginners.

### Techniques of writing strokes

The Eight Principles of the Character 永 (yong, meaning permanence) explains how to write the eight common strokes in Chinese characters and their translations from the Skopos theory, which are considered the basis of Chinese regular script strokes.

#### (1) Dot (点 dian)

Go right immediately after the tip of the brush touches the paper, and then go down a bit with increasing force before an upward finish.

#### (2) Horizontal stroke (横 heng)

Go right immediately after the tip of the brush touches the paper, which is followed by a shout horizontal bar before you finish.

#### (3) Vertical Stroke (竖 shu)

Start where you have finished the previous horizontal stroke, and then go downward for a vertical line, but with a short and slight left turn.

#### (4) Hooked Stroke (钩 gou)

Press down as you finish the previous vertical stroke, and then finish with a short and upward hook.

**(5) Rising Stroke (提 ti)**

Go right with force immediately after the tip of the brush touches the paper, and then move toward upper right to finish the stroke. Make sure that the stroke is thinning as you go.

**(6) Long Down Stroke to the Left (弯 wān)**

Make a tapering line toward lower left, a stroke which is written in a quick and forceful manner.

**(7) Short Down Stroke to the left (撇 piě)**

Draw a short tapering line with a forceful start, but thinning toward lower left.

**(8) Down Stroke to the Right (捺 nà)**

Draw a thickening line toward lower right, finishing with a downward force and followed by a very short, thin and horizontal stroke.

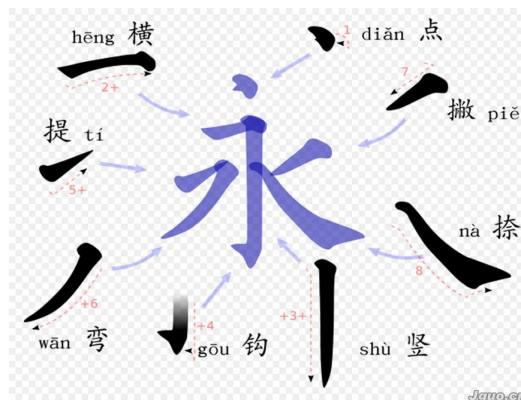


Figure 3. The eight principles of the character 永

**Special terminology and tips for using the brush:**

The special terms for the strokes are divided into three steps: the beginning of the stroke, the continuation of the stroke, and the finishing of the stroke. And the following writing skill translations are also based on the rules of Skopos theory.

**Beginning the stroke**

**落笔 Luobi:** the first touch of the brush on the paper, which locates a stroke and prepares the writer for the next movement.

**藏锋 Cangfeng:** a skill with which the writer “hides” the first touch of the brush in a stroke, starting to write in the direction opposite to the one intended: moving the brush a bit to the left first when a right-to-left stroke is intended or moving it upward a bit when you are to write a downward stroke. Make sure that the opposite movement should be short and slight and can never be overdone; otherwise, the first touch would be ill-formed.

**顺锋 Shunfeng:** a way to wield the brush after luobi or, specifically, with the tip of the brush pointing to the direction opposite to the intended movement, pause a bit after luobi to allow the ink to permeate, before continuing with the middle section of the brush.

**强锋 Qiangfeng:** a turning or revolving movement of the brush before touching on the paper, which is usually used in writing the first stroke of a character or during a short pause between strokes, serving as a void connection in writing.

## Continuing the stroke

行笔 Xingbi: a way to wield the brush on paper, without stopping, from one place to another. All strokes are results of xingbi.

驻笔 Zhubi: a pause between writing different strokes. It is a slight movement between ticking and pressing with the brush, which requires skilful controls over the fingers and the wrist.

顿笔 Dunbi: a skill to press the brush with force to allow the ink to permeate, as if you were hammering a nail into the wall or forcing the brush through the paper. While pressing, a slight ticking movement is needed for a second pressing action. The combination of ticking and pressing helps with the progress of the brush, while producing a firm stroke.

蹲笔 Dunbi: It is a similar skill to the precious one, dunbi, but slighter in force to allow a slower permeating of the ink into the paper. Regular script requires, by and large, a moderate thickness of the stroke and strokes should not be overdone or underdone.

提笔 Tibi: a slight ticking, without lifting the tip of the brush away from the paper. This skill is also used for long and thick strokes. Make sure that while a ticking the ink permeates smoothly and evenly to produce a thin but real stroke. An incorrect writing speed or a wrong angle between the tip of the brush and the paper will result in broken or dotted stroke.

挫笔 Cuobi: a change in direction of the tip of the brush and away from the original place after tibi. In regular script writing, the skill is normally used at the turning point to avoid a round turn. It is also used to brush a gou (hooked stroke) or na (down stroke to the right) to add a sense of thickness to the position of hook or the direction of the pressing.

弩笔 Nvbi: a backward move of the tip of the brush after cuobi. The skill is used to avoid a stroke being too smooth and add variation to it, creating an impression of firmness and vigour.

拖笔 Tuobi: a way to spread the tip of the brush to the two sides after dunbi so as to produce a thicker stroke.

## Finishing the stroke

回锋 Huifeng: a backward movement of the brush along the inner or outer line when finishing a stroke. This skill is used for all strokes in regular script, except for those with a sharp trip.

纵笔 Zongbi: It is a movement to finish a stroke letting the tip of the brush to go without a backward movement.

空手 Kongshou: a quick backward movement of the brush at the end of a stroke, after the tip of the brush is away from the paper.

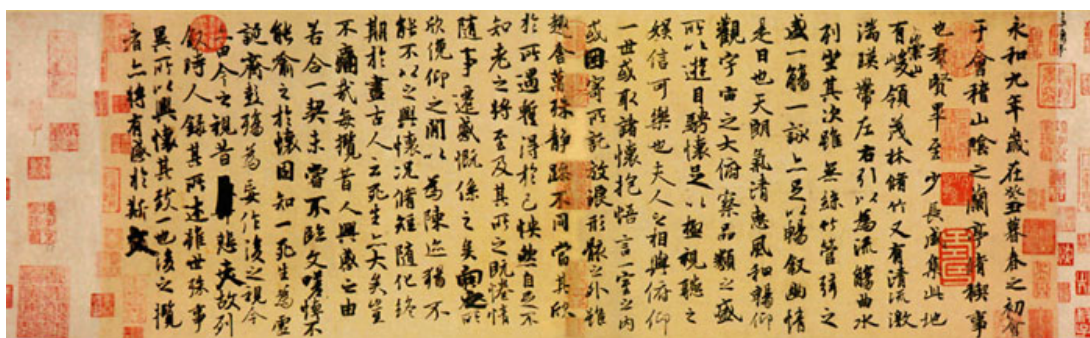


Figure 4. Preface lanting pavilion collection, by Wang, Xizhi (303-361), Eastern Jin Dynasty

Calligraphy is the art of lines, or strokes. Lin Huimin, a famous dancer from China's Taiwan Island and director of the Cloud Gate Dancing Troup, once choreographed a collective dance



named “Running-Cursive Script”, which gained him worldwide. His inspirations came from Chinese calligraphy, and dancing enlivened the spirit of the art of writing. The dancer onstage becomes no more dancer but a calligrapher wielding his /her brush and applying ink to paper, pausing one moment and writing in high spirits the next. His/her movements are now swift, smooth and elegant, and then slow, gentle and enchanting. Although there is neither script in the setting nor characters on the stage, the audience can easily feel the presence of the intriguing art of calligraphy.



Figure 5. A collective dance named “Running-Cursive Script”

## CONCLUSION

Chinese calligraphy is an ancient art form that utilizes Chinese characters as a vehicle to communicate the emotional and aesthetic world of the artist. In 2010, Chinese calligraphy has been included into China’s intangible cultural heritage of the catalogue, as one of the world’s cultural treasures of mankind. Recently, Beijing Municipal Education Commission has also made calligraphy as a compulsory course added to the primary school classroom. Chinese calligraphy has become a leisure and cultural life of the majority of Chinese people. In short, calligraphy with its long history and unique cultural charm has been integrated into Chinese culture. It is of great importance that translators should continue to complete the translation works of Chinese calligraphy.

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# The Importance of Predictive Human Competence in the Stress Resistance

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## ABSTRACT

The conceptualization of predictive human potential as a constructive anticipatory coping in the life stressful situation is offered. The objective of this study was to examine the role of predictive human potential as the ability of personality to cope with difficult life situations (or to resist stress) and as a vital component of establishing psychological well-being. Predictive potential allows a person to foresee possible upsetting or sorrowful events and be ready to face them increasing stress resistance and leading to decrease of psychological traumas. Predictive human competence as a diverse psychological phenomenon realized in anticipatory coping with a real-life stressful situation should be analyzed via the level of development of personality characteristics (ambiguity tolerance, hardiness and risk propensity) that form their individual predictive potential. The research results suggest that predictive competence is fundamental in understanding coping ability and make a contribution to the body of research on the relationship between personality and uncertainty.

**Keywords:** *real-life stressful situation, predictive human potential, predictive competence, ambiguity, hardiness, risky behavior, tolerance to uncertainty, stress resistance.*

## INTRODUCTION

A rapidly changing world nowadays creates instability, uncertainty and ambiguity of people's lives. One of the topical tendencies of psychological science in researching ambiguity is the analysis of a real-life stressful situation.

The term a real-life stressful situation is commonly encountered in different spheres of science. Within a conceptual scheme of psychological science the term reveals a methodological mismatch since in some scientific works it is understood as a general category, in the others, however, it is used in a much narrower, more specific sense labelling types of life events, such as disease, problems in social interaction or visions of the future and the like [39; 2].

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A real-life situation analysed from psychological point of view could be found stressful according to some important characteristics. The characteristics are widely mentioned in scientific literature: depth, running time, importance, uncontrollability, ambiguity, stressfulness, risk, inadaptability (high demands to stress adaptation) etc. [12; 44]. Researcher K. Vasylevska proposes an empirical criterion for a real-life stressful situation - impoverishment of the past, the loss of childhood and ontologization of the present [21]. The first phenomenon deals with presenting much smaller number of life events in stressful

situations compared to un-stressful, habitual situations. In difficult times people enumerate the most important life events, the main stages of their personal history: birth, studying, marriage etc. The examined people, who experienced difficulties at the time of the research, presented their lives since “the age of reason, “approximately 15 years old, which reveals the phenomenon called the loss of childhood. At the same time the respondents remembered the events from their childhood but not as essential or significant for the present situation. The criterion of ontologization of the present covers the spread of the present time over the whole period under stress. It is characterized by constant rethinking the situation with the feeling of its full uncontrollability [27]. Thus, during stressful life events personality possesses limited vital resources (a limited capacity to construct ‘subject-future’ relations) and appears unable to show a variety of behavior repertoire towards future events. In this case a question of integrative qualities of personality seems interesting to research. In the process of coping with a real-life stressful situation personality develops a psychological ability (so-called predictive human potential), which creates an important aspect of their life span.

The objective of the article is to show the role of predictive human potential as the ability of personality to cope with difficult life situations (or to resist stress) and as a vital component of establishing psychological well-being. Predictive potential allows a person to foresee possible upsetting or sorrowful events and be ready to face them increasing stress resistance and leading to decrease of psychological traumas.

### **EXISTING RESEARCH FINDINGS**

Psychological analysis gives the opportunity to sort out the nuclear component of predictive potential – predictive human competence. The term predictive competence is understood as a human capacity to foresee the coming events with a high degree of probability, predict the development of events and personal reactions to them, act in advance [32]. Thus, the concept characterizes an appropriate development of anticipated skills of personality, the system of their inner recourses which guarantee success in prognostic activity [34]. All in all, predictive competence is a characteristic of personality but it starts functioning as a mental human process revealed in stressful situations as a specific form of prediction.

Manifestation of prediction competence depends on the aims and objectives of person’s activity, its time span, spatial or person-situation characteristics. For instance, person-situation competence is a type of prognostication which is connected with the ability to foresee variety of events and be prepared for them (monovariant or poly variant prognostication). In case of monovariant prognostication an individual predicts only one trend of events. If prognostication is poly variant, there are predictions for a variety of trends so an individual is expected to be more prepared for any unusual situation. Spatial competence ensures kinaesthetic setup (variations of body movements in an appropriate direction), orientation in space [15]. Time prognostication demonstrates the ability to manage time and plan appropriately (chronorhythmoability or chronorhythmmodisability). It should be noted that all the forms of prognostication mentioned above are aimed at future, at people’s capacity to act according to a predictive scheme towards stressful life events, mentally foresee future actions constructing forecasts, hypothesis, plans and so on [45].

Predictive competence is a stable characteristic of human psyche when mapping the environment. According to a range of scientific research [31; 43; 11; 19; 14; 13; 38] the above mentioned competence is relatively independent, autonomous characteristic of personality among other traits. Its interconnection with other characteristics of human psyche is nonlinear, multivariate, indirect, so we can consider it to be psychologically heterogeneous phenomenon that has an impact on human adaptation and behavior regulation. It is unquestionable that the ability of a person to predict the results and consequences of their

behavior determines the decisions a person will make: what and how the person will act under stress. It means that one of the most important stages of studying the diversity of individual behavior and acting in stressful situations is the analysis of a peculiar predictive competence of a particular personality, their ability to prognosticate and predict the results of their actions, pattern their behavior and design a new behavioural programme [40].

Taxing circumstances, which might create personal feelings of fear, uncertainty and insecurity, and lead a person to the lack of confidence in successful managing of their life, must be taken into account in stress resistance potential of an individual, who shows new behavioural patterns aimed at coping with the situation. B. Anan'ev points out that person-situation interaction forms a wide range of social situations with potential for self-development. Under the given circumstances an individual performs a variety of social functions that demonstrate a range of personal qualities [3]. Undoubtedly, the main goal of any stressful life period is promotion to positive changes in personality as L. Vygotsky claimed [33]. In this regard a real-life stressful situation should also be treated as aggravation of developmental contradictions, "a compulsory turning point, critical moment after which development will follow this or that route using the possibilities for personal growth" [37; 39]. As a result, besides a destructive influence on a person a real-life stressful situation has a constructive potential as well (self-developmental value due to the development of predictive competence).

Adaptation to new life circumstances that are subjectively perceived as stressful is ensured by its predictive potential that includes integrative qualities of a person such as tolerance of uncertainty, hardiness and propensity to risk as a tendency to reveal new behavioural reactions.

According to the theory of homeostasis, it is quite natural that most people who experience uncertainty and ambiguity of situation feel insecure, anxious or frustrated facing something unknown and unforeseeable, and try to avoid unpredictable situations. But apart from a destructive influence ambiguity can stimulate other responses such as seeking to minimize or reduce stress or conflict, promoting the increase of such psychological virtue as tolerance of uncertainty. B. Anan'ev emphasized the importance of studying ambiguity and pointed out that "ambiguity among different forms of tension is a finding of paramount importance", "it is a characteristic of dynamic psyche nowadays that sets new scientific problems" [3]. S. Budner defines tolerance as "individual tendency to perceive (or evaluate) uncertain, ambiguous situations as favourable or (in case of ambiguity intolerance) as threatening" [37]. In present studies ambiguity tolerance is regarded as an independent psychological construct that influences perception, thinking, emotional and behavioural spheres, as the relationship that individuals have with ambiguous and uncertain stimuli or events interpreting them not as threatening but challenging (motivating to behave in a risky manner) [36], or as an ability to bear tension in critical, problematic situations [27].

Based on the above-mentioned statements, ambiguity tolerance could be viewed as a subjective factor that provides hardiness in critical situations that are created by specific conditions of human life.

Hardiness is one more psychological phenomenon first presented as a personality style by S. Maddi. He conceives of hardiness as a pattern of certain attitudes and motivation needed to modify the environment into opportunities of a personality [28]. According to D. Leont'ev and O. Rasskazova hardiness is a system of human beliefs and values about themselves and the world around, personality relationship with the surrounding world. It indicates a human adaptability and a resistance resource in the encounter with stressful conditions measuring person's ability to turn stressful circumstances from potential calamities into opportunities for personal growth [25; 7; 29].

The concept of hardiness is viewed as a combination of three dispositions – commitment, control, and challenge. Similar to hardiness there are such psychological categories as personal adaptive potential (A. Maklakov), subjectivity (B. Anan'ev K. Abulrhanova-Slavsra and others), existential personal potential (D. Leont'ev). Hardiness is not a strategy in coping with a real-life stressful situation, it is a source of human potentials which encourage personality development and self-improvement. Hardiness is closely connected with individual's choice of behavior in a stressful situation: either to follow their previous experience and change nothing or to put stressful circumstances into perspective and interpret them in a less threatening manner endeavouring to find new ways and approaches in solving problems, taking risks, developing their personality [2].

According to dynamic paradigm of psychology of choice, which ranks the variants of decision-making, propensity to risk is seen as a certain trend that dictates a particular behavior repertoire, and may lead to unpredictable (positive and/or negative) results. Taking risks in life is a common occurrence amongst all human beings, it is an inseparable part of human life nowadays, part of functioning of modern society [4; 13].

Risky behavior is a means of increasing self-adaptability in the inner and outer setting which impacts keeping person's individuality (individualization of personality is a process of psychological development and self-realization when unique personality features are fulfilled) [19].

D. Kolesov considers risk to be connected with threat and danger. Danger is a troublesome and hostile force that contradicts human intentions. Threat is a realization of danger. Awareness of threat in the situation of danger transforms any life situation into a risky situation, and risk is a form of resistance to threat and danger [35]. In researching risky behavior as a certain strategy of coping with stressful situations V. Cherkasova takes into consideration subjective concept, focused on the doer or the subject of the action, as a possible choice of behavior and its outcomes. From the point of view of the concept, taking risks, which comes with human intelligence and will, leads and drives people's behavior in making decisions about whether or not to take such risks [16; 33].

On the one hand propensity to risk has an objective, fact-based nature, on the other it is subjective and personal as an individual is always responsible for their decision-making and choice of their behavior. We believe risk propensity to be the component of predictive human potential because of individual's responsibility for their own choice of predicted course of events. Understanding of situation, personal attitude, certain aims and skills etc. are involved in the process of decision-making. In other words, in the situation of ambiguity and uncertainty an individual demonstrates risk propensity as one of the forms of prognostication and prediction of their own choice.

In conclusion, predictive human competence as a diverse psychological phenomenon realized in coping with a real-life stressful situation should be analysed via the level of development of personality characteristics (ambiguity tolerance, hardiness and risk propensity) that form their individual predictive potential.

## METHOD

### Participants

Our empirical research of predictive human potential in stress resistance was two-staged. On the first stage we studied those psychological traits of personality which obviously are the sources of predictive human competence in a stressful situation. They are hardiness and ambiguity tolerance. The respondents chosen were the people who experienced hard times in

their lives during the research (imprisonment, serious disease, unemployment etc.) and perceived the situation as stressful. There were 222 participants aged 18 to 60 on the first stage of the research.

The second stage was aimed at researching the role of risk propensity in developing predictive human potential. The sample consisted of 215 adults (108 male and 107 female) aged from 18 to 35 years.

### **Data tools**

Hardiness Survey by S. Maddi reveals an individual's ability to remain healthy under life stress, to maintain inner balance and high productivity. Russian version of the survey adapted by D. Leont'ev and O. Rasskazova (2006) was used in the empirical research under consideration. The version includes three comparatively autonomous components – involvement, control and acceptance of risk. It also makes possible to assess the general level of hardiness.

Intolerance of Ambiguity Scale by Budner was used in translation and adaptation by G. Soldatova and L. Shaigerova (2008). The level of personal tolerance-intolerance to uncertainty can be assessed by the Scale by means of three subscales – novelty of the problem, its complexity and solution potential. It must be noted that the higher the participant's rank according to the Scale, the lower level of tolerance the person demonstrates towards ambiguity of the situation.

Anticipation ability by V. Mendeleevich (1996) shows the development of three scales – person-situation, spatial and time prognostication competence, and gives the general level of predictive human competence. Possessing the ability, an individual functions more effectively in decision-making process, stating the aims, choosing their behavior repertoire, planning and controlling.

Predictive ability by L. Regush (2003) is a total number of points given between the options a or b with 1 or 2 points respectively. According to our hypothesis we focused on the general predictive ability, which was seen as “the basis” for the development of predictive human competence.

Propensity to risk by A. Shmel'ov aims at defining of risky behavior level and discovery of overwhelming characteristic tendencies. Risk propensity index makes from 11 to 40 points. The analysis of risk propensity, which is seen as a trait of character, is important for psychological prediction in making decisions under the conditions of uncertainty or ambiguity.

### **Procedure**

With the help of the method of cluster analysis (K-means algorithm) the sample of participants was split into two or three groups on the variables of hardiness, ambiguity tolerance and predictive competence. The examined were divided into clusters (according to the rate of average data point of all the variables). After that the between cluster differences were computed and the differences were assessed by t-test. Most differences proved to be statistically important at  $p \leq .001$ .

## **RESULTS AND DISCUSSION**

The hypothesis of the research first stage was the statement that if an individual shows a high level of hardiness to resist a stressful life situation, then the level of ambiguity intolerance will be low, which guarantees the functioning of predictive human competence.

The first cluster demonstrates the highest indices of different components of hardiness and the general level of it. The third cluster is formed of low indices according to the above mentioned variables in the sample. Differences between the variables, used for clusterization, were

processed with the help of t-test (see Tables 1, 2, 3, 4).

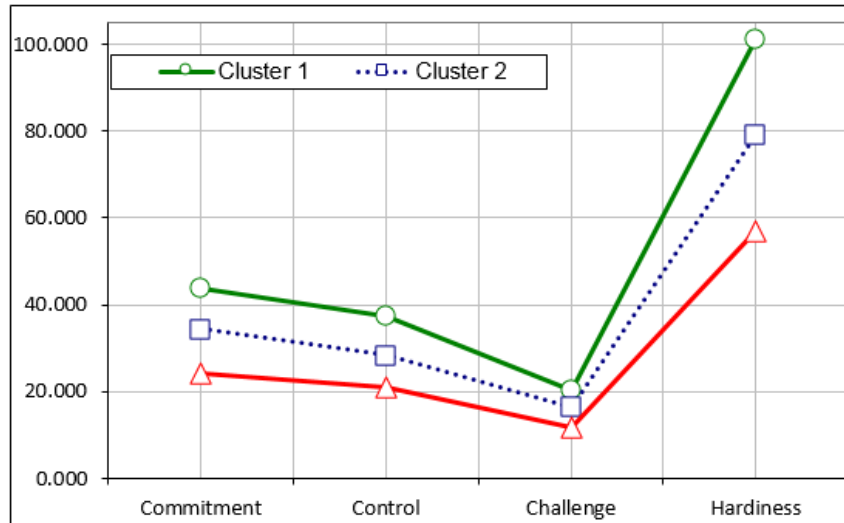


Figure 1: The results of clusterization of the sample

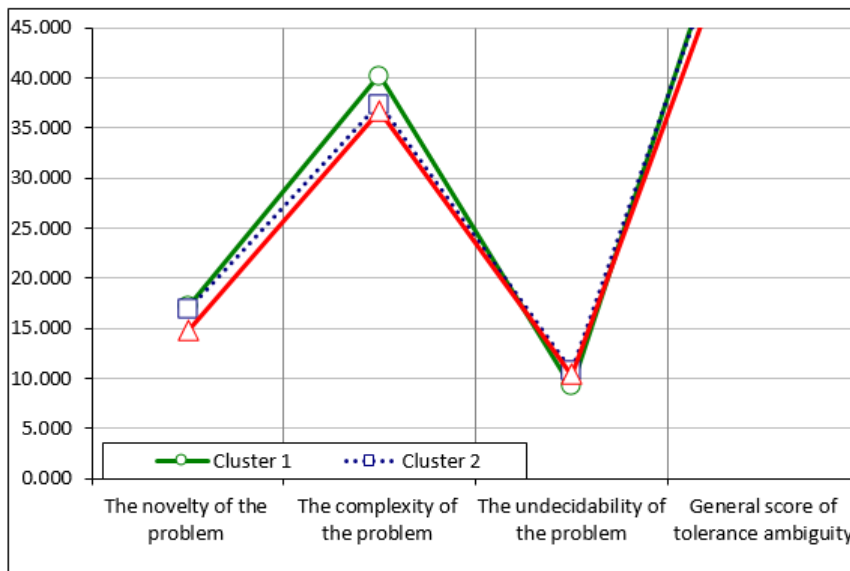


Figure 2: The results of clusterization of the sample

The clusterization showed some differences in the indices of the variables analyzed. According to the results from Table 1, opposite clusters 1 and 3 differ in all the indices.

Table 1: Between cluster differences in hardiness and tolerance ambiguity

Variables	Mean Cluster 1 (N=59)	Mean Cluster 3 (N=52)	t-value
Commitment	43,610	24,173	23,967*
Control	37,305	21,096	18,735*
Challenge	20,237	11,692	10,027*
Hardiness	101,153	57,000	29,176*
The novelty of the problem	17,254	14,788	2,822*
The complexity of the problem	40,220	36,731	2,808*
The undecidability of the problem	9,136	10,308	-1,938*
General score of tolerance ambiguity	66,627	61,827	2,955*

\*p< .001



The sampled data from Table 2 show the difference between clusters 1 and 2 according to hardiness, novelty and general level of tolerance.

**Table 2: Between cluster differences in hardiness and tolerance ambiguity**

Variables	Mean Cluster 1 (N=59)	Mean Cluster 2 (N=112)	t-value
Commitment	43,610	34,357	<b>12,108*</b>
Control	37,305	28,393	<b>12,069*</b>
Challenge	20,237	16,446	<b>5,124*</b>
Hardiness	101,153	79,170	21,341
The novelty of the problem	17,254	16,830	0,625
The complexity of the problem	40,220	37,402	<b>2,672*</b>
The undecidability of the problem	9,136	10,777	<b>-2,900*</b>
General score of tolerance ambiguity	66,627	65,152	0,994

\*p < .001

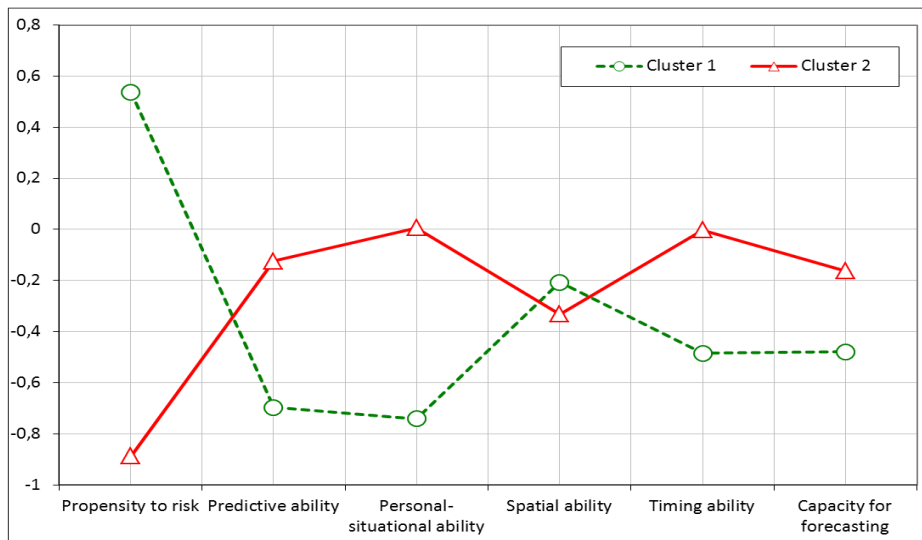
Table 3 shows the difference between clusters 2 and 3 according to complexity of a problem and inability to solve it.

**Table 3: Between cluster differences in hardiness and tolerance ambiguity**

Variables	Mean Cluster 2 (N=112)	Mean Cluster 3 (N=52)	t-value
Commitment	34,357	24,173	<b>12,545*</b>
Control	28,393	21,096	<b>9,134*</b>
Challenge	16,446	11,692	<b>6,303*</b>
Hardiness	79,170	57,000	<b>18,376*</b>
The novelty of the problem	16,830	14,788	<b>2,744*</b>
The complexity of the problem	37,402	36,731	0,611
The undecidability of the problem	10,777	10,308	0,847
General score of tolerance ambiguity	65,152	61,827	<b>2,164*</b>

\*p < .001

The hypothesis of the research second stage was the statement that if an individual shows a higher level of predictive competence, then their risk propensity rate is lower. Thus, their stress resistance is more effective.



**Figure 3: The results of clusterization of the sample**

The first cluster with high rate of variables (analogs of independent variables) shows the highest risk propensity rate as an alternative way of coping with stress (Table 4).

**Table 4: Between cluster differences in risky behavior and prognostic variables**

<b>Variables</b>	<b>Mean Cluster 1 (N=65)</b>	<b>Mean Cluster 2 (N=74)</b>	<b>t-value</b>
Propensity to risk	22,75	15,31	<b>10,89*</b>
Predictive ability	240,6	252,7	<b>-4,15*</b>
Personal-situational ability	154,91	164,89	<b>-5,24*</b>
Spatial ability	48,54	47,58	0,79
Timing ability	37,06	40,36	<b>-3,02**</b>
Capacity for forecasting	8,89	9,51	<b>-1,95**</b>

\* $p < .001$ ; \*\* $p < .01$

As it is seen in Table 4, the opposite clusters differ greatly according to all the indices of predictive competence (person-situational, time prognostication) and ability to predict. However, such essential differences are avoided in spatial competence. According to our hypothesis, the first cluster sample shows a low level of coping behavior, prognostic abilities and future prediction and is a kind of a system unable to adapt to stress successfully.

## CONCLUSION

The major findings of this research can be summed up as follows:

- High levels of the predictive competence, as the indicators of the generalized appraisal of the life situation and activity, is positive predictors of diverse repertoire of the constructive proactive coping behavior.
- High level of hardiness and low level of ambiguity intolerance guarantee an individual's successful overcoming a real-life stressful situation as we believe these personality traits demonstrate the realization of predictive characteristics of a person.
- Finally, high level of risk propensity is seen to be one of the possible variants in overcoming a real-life stressful situation.
- The role of predictive competence in psychological structure of personality is that of a stabilizer to some stressful events.
- Adaptive function of predictive competence is realized through an individual's choice of the best alternative of behavior under certain circumstances. Thus, it can be seen as a proactive coping-behavior of personality. At the same time if an individual fails to cope with the situation, to be adapted to it, they find more available routes to an appropriate behavior including its risky forms.
- Predictive competence is considered to be both an indicator of a constructive recovery from stress and an element of human mental health and well-being. Thus, in conclusion, research results suggest that predictive competence is fundamental in understanding coping ability and make a contribution to the body of research on the relationship between personality and uncertainty.

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## A Tool for Measuring Organization Performance using Ratio Analysis

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### ABSTRACT

Ratio analysis has served as a veritable means of monitoring, measuring and improving performance in an organization. Hence, the study examines a tool for measuring organization performance using ratio analysis. It also ascertains the relevance of internal and external financial reports during ratio analysis for the purpose of establishing key relationships and results in order to appraise financial performance. The study confirmed that there is significant relationship between ratio analysis and organizational performances as well as financial ratios highlight the importance of effective management of an organization. Based on the findings of this study, it was recommended that financial ratios should be computed periodically to reveal areas of strengths and weaknesses, as well as, ratio analysis should be used to measure performance in terms of profitability.

**Keywords:** Ratio analysis, Performance, Organization, financial Ratios, Management.

### INTRODUCTION

The purpose of preparing the financial statements of a company is to convey information on the overall performance and the state of affairs of such an organisation to all interested parties. Besides, users of these financial statements in such a way as to reveal the financial strengths and weaknesses of such an organisation in order to form an opinion as regard her going-concern. However, ratio analysis is one of the ways through which the financial statements could be interpreted. While ratio analysis is also a method used by financial managers and investors alike to compare a company's financial structure, conditions and performances with standards prevailing in such industry for the purpose of high-lighting improvement or deterioration in the trend of the business performance. Lucey (1988) defined ratio analysis as the systematic products of ratios from both internal and external financial reports so as to summarize key relationships and results in order to appraise financial performance.

More so, ratio analysis could serve as a practical means of monitoring and improving performance and it could be enhanced when:

- Ratios are prepared regularly and on a consistent basis so that trends can be highlighted and changes investigated.
- Ratios prepared for and individual firm can be compared with facilitated when the firm has ready access to comparative ratios prepared in a standard manner.
- Ratios are prepared showing the inter-locking and inter-dependent nature of the factors which contribute to financial success.

Nevertheless, ratio analysis utilizes figures that routinely appear in the financial statements for a period of several consecutive years, (that is 5years to 10years). One calculated, the ratio may be compare with external industry standards and with internal goals and budgets of the organisation in order to detect trends and estimates, improvement and stability of the measure conditions. Finally, it must be emphasized that ratios must be compared with some prevailing standards, because it cannot in itself convey any useful information.

## STATEMENT OF THE PROBLEM

Managerial decision is one of the keys to success in an organisation. And as such, management of a given organisation makes decision based on financial performances prevailing in such establishment. In arriving at such decisions, the management tries to focus their attention on two basics of comparison which are as follows:

Current performances are compares with the records of the part years in the organisation at least five (5) year's period.

Current performances are compared with that attested performances in other similar organizations.

As a result of this exercise, in-estimable short comings may arise which could force management to take drastic steps/decisions that could make or mar the organisation. Also, problems may arise when an attempt is made to compare the ratio of one business with those of other organisation, and these could arise as a result of different accounting basis and the aftermath result could not be relied upon.

Moreover, problem(s) associated with effect of inflation are always being ignored and the resultant ratios are of limited value. As a result of the following, the aforementioned shall be examined in the course of this research work.

## OBJECTIVE OF THE STUDY

The broad objective of the study is to analysis how ratio analysis can be used to measure performance of an organisation. Also the following specific objectives will be examined in the course of this study:

- To critically analyse the financial statement and evaluate the performance of the company through ratios to ascertain whether resource are optimally and efficiently utilized.
- To evaluate the historical activities of the company such that a projection into the future can be made thereby improving management decision.
- To analyse the problems associated with the use of financial ratio analysis and proffer possible solutions.
- To identify the importance of financial ratio analysis to every use group.
- To analyse how financial ratio analysis can assist management to detect the various strengths and weaknesses of an organisation.

## RESEARCH QUESTIONS

The following research questions shall be examined during this study:

- Do you use financial ratios as a measurement of management performance
- Does the management of this company apply financial ratio in making decisions that affect the company?
- Does ratio analysis help management in taking effective decisions?
- Do you agree that financial ratio reveal strengths and weaknesses of an organisation?
- Does the interpretation of ratios help to determine whether the activities of the company have been effectively managed?
- Does interpretation of ratio yield positive results?

## **RESEARCH HYPOTHESES**

The following hypotheses shall be tested during this research work:

- Ho: Financial ratios do not highlight the importance of effective management of an organisation.
- Hi: Financial ratios highlight the importance of effective management of an organisation.

## **LITERATURE REVIEW**

Ratio according to Garbutt (1972) is one number expressed in terms of another. It is defined in the Oxford Dictionary as the relationship between two amounts determined by the number of times one is contained in the other. By the use of ratio analysis techniques, it is possible to facilitate comparison of significant figures, by expressing their relationship in the form of ratios or percentages, thus enabling the accounts of a business to be interpreted by bringing into focus salient features contained in the financial statements.

Financial ratios are employed to denote past trends, compare present performances and may give an indication to future trends, performances or operations of a company and thus acts as signposts for plans and policies. It could be deduced from the above that ratios serves as practical means of monitoring and improving performances of a company (Lucey, 1988).

## **BASIS OF COMPARISON**

Financial ratio as an index is more useful when it is compared with another index. The basis of comparison includes the following;

- Intra-Firm comparison or previous year basis.
- Inter-Firm comparison or similar business basis.
- By basis of ratio established by the management (standard).

### **Objective of inter-firm comparison**

Garbutt (1972) stated that inter-firm comparison is intended to show the management of each firm:

- How its profitability and productivity compare with that of other firms in the same industry.
- In what respects the firm is weaker or stronger than its competitors.
- What specific questions of policy or performance should be tackled if the firm's profitability and productivity are to be raised?

### **Benefits of inter-firm comparison**

Garbutt (1972) also noted that the information emerging from comparative surveys may throw new light on points such as follows;

- The actual rate of return on capital being achieved in the industry
- The industry's cost structure
- The main areas of weaknesses and strengths found in a company
- The areas where there seem be 'bottleneck' factors inhibiting economic growth.
- Comparison may also provide realistic quantitative assessments of the scope for increased productivity and efficiency in the industry.

### **The basis of ratios established by the management (standard)**

Financial ratio for the current period may be compared with standard ratios established by the

management. This basis follows, budgetary analysis whereby budgeted ratios are compared with actual ratios as calculated from figures in the financial statements and variances identified. The variances that occur (whether favourable or adverse) will help the management in interpreting the performances of the company which will in turn aid in predicting the company's future performance. – Lucey, 1988.

### **Interested parties to the accounts and financial ratios**

The fundamental purpose of financial reporting is to communicate economic measurement of information about the resources and performances of an organization useful to those having reasonable right to such information. (SAS 2, 1987). Accounting information (and thus ratios calculated) of a business is required by a variety of users. According to the statement of Accounting Standard (SAS2, 1987) there are many users, which can be grouped into two, showing clearly why they need such information (Aghoroh, 1999). The interested parties to financial statements and ratios are grouped into two as follows:

- Internal users.
- External users.

### **Classification of financial ratios**

There are various ways of classifying ratios; this depends on the information need of the analyst of the financial statements. Ratio can be classified in terms of their data source; hence, we have the following classifications:

#### **Balance sheet ratio**

These are ratios calculated using two related figures from the balance sheet.

#### **Profit and loss account ratio**

These are ratios calculated from related figures in the profit and loss accounts.

#### **Inter statement ratios**

An inter statement ratio is calculated by relating items in both the balance sheet and profit and loss account.

Garbutt (1972) noted that ratios could be loosely grouped into the following and as a measure of profitability, liquidity or asset use solvency. Another possible and more acceptable method of classifying ratios is according to the financial activity (functions). This method helps to analyse and gives an overview of information required by various parties interested in the company's financial reports. For example, creditors are interested in the liquidity position of a company; hence, they consider the liquidity ratios. Shareholders are concerned about the net worth and profitability, as a result they monitor the profitability ratios.

Ratios used to measure the financial activity of a company can be grouped into four in respect of this research work:

*Profitability and Efficiency.*

*Short term solvency and liquidity.*

*Long term solvency and liquidity/capital structure.*

*Potential and growth investors' ratio.*

### **Importance ratio analysis**

Ratios are effective tools of management in the provision of information and data needed in planning and determining the efficiency of management for a particular period. Ratios are also



used to established relationship and trends in the financial statements. Ratios are important and useful to various user groups as viewed from the following perspective.

### **Trend analysis**

Ratios enable users of financial statement determine whether the financial position of a company is improving or deteriorating over time. The importance of trend analysis is that the analyst knows whether the company is operating on a favourable level or not.

### **Liquidity position**

According ratios enables various user groups to know or determine the ability of a company to meet its long or short term obligation.

### **Inter-firm comparison**

Ratios are often compared among companies in the same industry. This is important because it enables the management of a company to know the position of the company in the industry and among competitors.

### **Profitability**

The ratios also help to determine the overall profitability of a company. This helps management to determine whether the company can meet its short and long term debts and still maintain optimum return.

### **Operating efficiency**

This shows how effectively the management utilizes the assets and how the assets are used in generating sales and revenue.

### **Advantages of ratio analysis**

As stated earlier, there are various techniques which could be employed in the interpretation of the financial statements. These techniques include the straight forward criticism, ratio analysis and movement of funds statements (cash flow statements). The ratio analysis technique has the following advantages over the other techniques.

- The ratio analysis technique provided a standard through which ratios can be compared at any point in time.
- The ratios are easy to compute since figures used in computing are picked from the financial statements.
- Formulates used in calculating ratios are uniform. That is, the formulas are the same all over.
- Ratios could be combined with other measures, which are also used in evaluating performance of an organization.

## **METHODOLOGY**

The population of study is the staff of PZ CUSSONS PLC, an organization that is reputable for efficiency as a result of management integrity. The population shall be chosen among the staff of finance, marketing and production departments of the organization and they shall constitute the sample for the survey. For the purpose of this research work selected respondents were draw from the total population through simple random sampling. This procedure gives opportunity to all respondents to be selected evenly. Staffs were randomly selected from their departments and given the questionnaires. In the process, only a very few of them collected and filled the questionnaire, while countable number of them allowed to be interviews.

Finally, respondents were selected through simple random sampling because it gives the whole

population the opportunity of being selected. In selecting the sample size, the total population of the organization was taken into consideration such that a significant part of the staff strength was selected as respondents for the organization. In all, about 40 respondents were selected from the staff in different department.

Research instrument refers to the basic tools of the researcher for measuring, evaluating, analysing and exploring of data – Asika (1991). In the course of this research work, data were collected through the use of well-structured questionnaire designed well in accordance with the objectives of the study. The questionnaire made this choice of appreciable language which enables the respondents to understand the questions for appropriate response, while Likert scale and other measuring scales were used for the options.

Finally, the questionnaire was divided into two sections, that is section ‘A’ has the demographic characteristics of respondents, and section ‘B’ has questions that relates to the study objectives of the study.

The data were grouped using frequency distribution table, and were eventually given percentages in order to ensure further analysis of respondents’ perception. In other words, the percentages gave an insight into respondents’ perception in respect of the questions and responses. Hypotheses were tested using analysis of variance and other statistical drawings.

### RESULT AND DISCUSSION

The following questions shall be drawn from the questionnaire for the test of hypothesis one.

Question One:

*Do you use financial ratios as a measurement of management performance?*

Question Two:

*Do the management of this company apply financial ratios in making decisions that affect the company?*

Question Four:

*Do you agree that financial ratio reveal strengths and weaknesses of an organisation?*

Question Ten:

*Ratio Analysis is very effective at various aspect of company performance?*

#### Hypothesis One

- H0: There is no significant relationship between ratio analysis and organisation performance.
- Hi: There is a significant relationship between ratio analysis and organisation performance.

#### Test of hypothesis

Data collected from respondents in questions: 1, 2, 4, and 10 shall be subjected to F-distribution statistical method.

**Data Analysis Table**

	1	2	3	4	5	
1	15	15	5	5	-	
2	20	15	5	-	-	
3	15	15	5	2	3	
4	10	20	5	-	5	
5	60	65	20	7	8	= 160

$$SS_T = \frac{15^2 + 15^2 + 5^2 + 5^2 + 20^2 + 15^2 + 5^2 + 15^2 + 15^2 + 5^2 + 2^2 + 3^2 - (160)^2}{16} + 10^2 + 20^2 + 5^2 + 5^2 = 16$$

$$SS_C = \frac{2163 - 1600}{5} = 563$$

$$SS_C = \frac{60^2 + 65^2 + 20^2 + 7^2 + 8^2 - (160)^2}{16}$$

$$SS_E = SS_T - SS_C = 1667.6 - 1600 = 667.6$$

Other computations are shown in the table below:

Analysis of Variance				
SOURCE OF VARIATION	DF	SS	MS	F
Treatment	4	667.6	166.9	
Error	12	104.6	8.72	19.14
Total	16	563		

**F<sub>cal</sub> = 19.14**  
**F<sub>tab</sub> @ (0.05, 4, 12) = 5.14**

**Decision:**

F<sub>cal</sub> is greater than (>) F<sub>tab</sub> since F<sub>cal</sub> is greater than (>) F<sub>tab</sub>, then reject null hypotheses and accept the alternative. Therefore, there is significant relationship between ratio analysis and organizational performance.

The following questions shall be drawn from the questionnaire for the test of hypothesis two (2).

Question Three:

*Does ratio analysis help management in taking effective decisions?*

Question Five:

*Does the interpretation of ratios help to determine whether the activities of the company have been effectively managed?*

Question Nine:

*Does the management of this company rely on financial ratios to drawn conclusion on certain issues?*

Question Twelve:

*Ratio analysis establishes true picture of company financial status?*

**Hypothesis Two**

- H<sub>0</sub>: Financial ratios do not highlight the importance of effective management of an organisation.
- H<sub>i</sub>: Financial ratios highlight the importance of effective management of an organisation.

**Test of hypothesis**

Data collected from respondents in questions: 3, 5, 9, and 12 shall be subjected to F-distribution statistical method.

**Data Analysis Table**

	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	
1	10	20	5	-	5	
2	25	10	-	5	-	
3	15	10	5	5	5	
4	25	10	5	-	-	
5	75	50	15	10	10	= 160

$$SS_T = 10^2 + 20^2 + 5^2 + 5^2 + 25^2 + 10^2 + 5^2 + 15^2 + 10^2 + 5^2 + 5^2 + 5^2 - (160)^2 + 5^2 + 25^2 + 10^2 + 5^2 \quad 15$$

$$SS_C = \frac{2450 - 1706.7}{4} = 743.3 \quad 15$$

$$2137.5 - 1706.7 = 430.8$$

$$SS_E = SS_T - SS_C = 312.5$$

Other computations are shown in the table below:

**Analysis of Variance**

Source of Variation	DF	SS	MS	F
Treatment	4	430.8	107	79.29
Error	11	312.5	28.4	
Total	15	743.3		

$$F_{cal} = 79.29$$

$$F_{tab} @ (0.05, 4, 11) = 5.67$$

**Decision:**

Fcal is greater than (>) Ftab since Fcal is greater than (>) Ftab, then reject null hypotheses and accept the alternative.

Therefore, financial ratios highlight the importance of effective management of an organisation.

**CONCLUSION AND RECOMMENDATIONS**

This research work studied how ratio analysis can be used to measure performance of an organization. Based on the discussions and findings in the course of this study, the following conclusions are made:

- Ratio analysis is a tool of financial analysis, which can be used as a predictive tool for measuring business performance.
- Ratio analysis can be used to show areas of strengths and weaknesses of a company.
- Ratio analysis is required for management control decisions, investment decisions and credit control purposes.
- Ratio analysis is required to determine whether a company have been improving or is deteriorating financially over a period of time.
- Ratio analysis can be used to determine whether a company have met the required standard within the industry.
- Profitability ratios are useful to the management of a company. They are used to determine the profitability of a company and the efficiency in the utilization of the resources of a company.

Therefore, the following recommendations are made:

- Ratio analysis should form part of management activities and should be computed periodically to reveal areas of strengths and weaknesses of a company.
- Ratios should be used by the management to measure the profitability of the company and to compare the financial activities of the company with that of other companies within the same industry. This helps to determine whether the company has performed up to the standard required by the industry.
- The investors should use investment ratios to determine how much dividend will accrue to them.
- Creditors and loan providers are advised to check the liquidity of a company before granting loans or giving any consideration. Therefore, they should consider ratios such as current ratio and quick assets ratio.
- The employees of an organization should be interested in ratios such as the long-term solvency and liquidity ratios. This enables the employees know and measure the security of their jobs.

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# Interrelationship of Capitalisation, Market Power and Profitability in Selected Food and Beverages Firms in Nigeria

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## ABSTRACT

This study evaluated the interrelationship of capitalisation, market power and profitability in Food and Beverages Firms in Nigeria. Specifically, the relationship between capitalisation and market power, profitability and market power, also capitalisation and profitability were assessed.

Six companies were purposively selected from Food and Beverages Firms, three from the Food firms and three from the Beverages firms to meet the needs of this panel study. Data for the study were collected using secondary sources within the period of ten years (2001-2010). The interrelationships between capitalisation, market power and profitability were analysed using Pearson Product Moment Correlation Coefficient (PPMCC) and Panel Data Analysis (PDA).

Findings indicated that there is a positive significant impact of capitalisation on profitability in food firms ( $r = 0.561$ ,  $p = 0.015$ ). Capitalisation has a positive significant effect on market power with ( $r = 0.678$ ,  $p = 0.001$ ) for food firms, and ( $r = 0.932$ ,  $p = 0.001$ ) for beverages firms respectively. In addition, a positive relationship was also found to exist between capitalisation size and corporate profitability as ( $r = 0.885$ ,  $p = 0.000$ ) for food firms, and ( $r = 0.643$ ,  $p = 0.000$ ) for beverages firms.

Based on these findings, the study concluded that there exists a positive and significant interrelationship between capitalisation, market power and profitability of the sampled firms. The study therefore recommended that management must see to an increase in total asset and total equity that will lead to an increase in market share and providing positive return on equity for their firms.

**Keywords:** Capitalisation, Market Power, Profitability, Management, Firms.

## INTRODUCTION

Managers are faced with many different choices every day. In today's competitive world, there is growing pressure to make the right decisions quickly on how to increase business profits. In order to do this, managers need to understand the factors that increase profitability. Previous studies have linked corporate survival to capitalisation, market power and profitability (Buzzel, Gale and Sultan 2000; Rumelt 1998; McGahan and Porter 2001). According to the Boston Consulting Group (BCG) matrix; businesses named stars, are those in rapidly growing markets with high market power. These businesses utilize to the best of their ability long-term opportunities while those with low market power and high growth need to increase their market power in order to become stars. Otherwise, the BCG matrix, suggest divesting this business and repositioning their resources more effectively in order to ensure desire goal attainment. (Pearce and Robinson, 2003).

The correlation among capitalisation, market power and profitability according to Woo (2001) has been a subject of debate over the years. It however remains a generalisation which has been over-extended and accepted without acknowledgement of all its attributes. It was noted that, close association exists among capitalisation, market power and profitability by now, strongly acknowledged by many managers and management scholars as a basic premise of

business strategy and that market power does not always translate into profitability, as evidenced by a sizable 41 market leaders all earning a pre-tax Return on Investment (ROI) of less than 10% (Szymanski, 1993).

### **STATEMENT OF THE PROBLEM**

The above background therefore emphasize among other objectives evaluate whether being a market leader increases a company's ability to earn greater profits. More specifically, it further sought to establish whether the relationship is negative or positive. A number of international studies have been conducted on the same topic using a number of different profitability measures. The extent to which capitalization is linked to profitability has been exhaustively discussed in many literatures focusing on the corporate environment of developed nations Rumelt (1991). Most of these studies are based in such advanced economies as the USA, Australia very little research has been conducted locally owing to a lack of market power information in Nigeria. The beverages firms which occupies a significant position in the Nigeria beverages firms is largely oligopolistic in nature: where market leaders determine the pace of development .The extent to which such market power is linked to capitalisation and targeted profitable performance has not been given much attention in the academic literature. Given the high cost and high risk associated with market share building, it is necessary that Nigerian managers have clearer evidences of the benefits and chances of success before committing scarce corporate resources to market building and profitability planning. In particular, this study attempts to examine the linkage between capitalisation, market power and profitability among selected Food and Beverages Firms in Nigeria within the period of ten years (2001-2010). On the basis of the linkage between capitalisation and profitability, the study further attempts to undertake an assessment of resource usage among the target study group. The study will provide avenue to further research into the topic of interrelationship of capitalisation, market power, and profitability in selected food and beverages firms in Nigeria. It will also assist in bridging the knowledge gap that exists on the subject locally. It will assist managers in decision-making by using empirical evidence on whether or not a pursuit of market power in order to increase profits works or not.

In the case of strategic decision-making, top management will find this study useful in reviewing strategies for survival and sustainability of their industries. The relevant discourse of the study therefore raised a question as to whether companies with greater market control correspondingly influencing corporate profitability in the industry. Based on this and other relevant issues, the following research questions and objectives were raised.

### **AIMS AND OBJECTIVES**

The general aim of the study is to evaluate the significance of market power as an influencing factor on corporate performance in the sampled Nigerian industry. The study put forward among other discuss whether selected Nigerian brewery and food firms with greater market control correspondingly possess greater performance metrics. On the basis of these and other relevant issues, the following research questions and study hypothesis are tentatively postulated.

#### **Research Questions**

- Is there any significant interrelationship among capitalisation, market power and profitability?
- Does company growing market power correspondingly influence corporate profitability?
- To what extent does capitalization determine change in corporate profitability for selected firms in the study?

## RESEARCH HYPOTHESES

Ho1: There is no significant relationship between capitalisation and market power among the sampled firms.

Ho2: Market power has no significant effect on corporate profitability.

Ho3: Capitalisation has no significant influence on corporate profitability.

## LITERATURE REVIEW

The basic framework discussed focus on market power, capitalization and corporate profitability. Emphasis is placed on theory of capitalisation, market power, profitability, meta-analysis theory and theory of assessment as well as efficiency theory. Market power and profitability can be explained as market power advantages. Market power is present when a firm is able to raise its prices or offer inferior products because its rivals are not able to offer customers a reasonable alternative. One can conclude that market power would enable a company to make higher profits as they are able to charge a premium for their products; Jacobson (2000).

Market Power is the ability of a firm to profitably raise the market price of a good or service over marginal cost. In perfectly competitive markets, market participants have no market power. A firm with market power can raise prices without losing customers to competitors. Market participants that have market power are therefore sometimes referred to as 'Price Makers', while those without are sometimes called 'Price Takers'. A firm with market power has the ability to individually affect either the total quantity or the prevailing price in the market. Price makers face a downward – sloping demand curve, such that price increases lead to a lower quantity demanded. The decrease in supply as a result of the exercise of market power creates an economic deadweight loss which is often viewed as socially undesirable. As a result, many countries have anti-trust or other legislation intended to limit the ability of firms to accrue market power. Such legislation often regulates mergers and sometimes introduces a judicial power to compel divestiture; Vatiero (2009). The following two theories of capitalisation are generally employed in order to determine the capital requirements of newly promoted company:

### **Theory of Cost of Capitalisation:**

The proponents of this theory are, Akintoye (2008) and Boodho (2009). The theory emphasized that amount of capitalisation is equal to the total cost incurred in setting up of a corporation as a going concern. This estimation of capital requirements of a newly promoted company is based on the total initial outlays for setting up of a business enterprise. Also, the amount of capitalisation of a company is determined by aggregating: The cost of fixed assets, such as land and building, plant and machinery, goodwill patents, furniture and fixture, etc. The amount of regular working capital required to carry on business operation. The expenses of promotion. The cost of establishing the business.

The original outlays on all these items form the basis for determining the amount of capitalisation. This theory is suitable for determining the amount of capitalisation of a newly promoted corporation. It enables the promoter to know the total initial amount of capital which they should raise. The cost theory of capitalisation is useful for these enterprises in which the amount of fixed capital is more and whose earnings are regular, such as construction and public utility institutions. However, this theory suffers from the basic drawback that the amount of capitalisation is judged by a figure based on the cost of establishing and starting a business and not by its earning. In fact, the amount of business and not by what a firm earns and not capitalisation is determined by what has been invested in it. This does not explain whether the capital invested in a business is justified by its earnings. The cost basis of



capitalisation is not satisfactory in the case of a growing concern whose earnings keep on changing whereas the amount of capitalisation remains constant. Also, it is not useful for those enterprises in which the operating cost is changing, earnings are not regular and certain which carry on their business under competitive conditions.

**Earning Theory versus Cost Theory of Capitalisation**

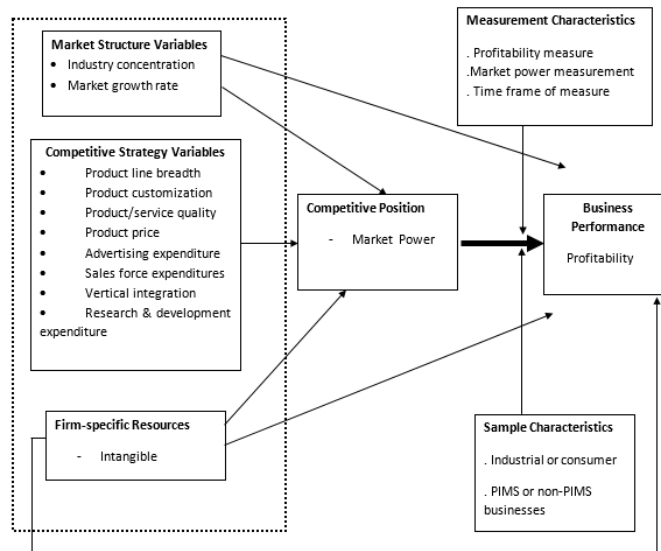
These theories have their limitation. As there is no contradiction between them, both are complementary to each other. However, whereas cost theory of capitalisation is suitable for determining the amount of capitalisation of public utility concerns, the earnings theory of capitalisation constitutes a good basis for existing companies. Cost theory of capitalisation should be applied for determining the amount of capitalisation in case of a newly promoted company, as it will be difficult for it to estimate its future earnings which are quite uncertain. As earnings provide a better basis for capitalisation of an established company, a newly promoted company should switch over to the earning theory of capitalisation in later years. Capitalisation of a newly promoted company based on both of the above theories, would be a fair capitalisation. It would save the company from the disastrous evils of both under and over-capitalisation.

**Meta - Analysis Theory**

In statistics, a Meta-analysis refers to methods focused on contrasting and combining results from different studies, in the hope of identifying patterns among study results, sources of disagreement among those results or other interesting relationships that may come to light in the context of multiple studies. In its simplest form, this is normally by identification of a common measure of effect size, of which a weighted average might be the output of a meta-analysis.

Leverty (2001) attributed these different views to the fact that each study has reviews and tested different relationships and none of them has ever tried to replicate the finding of the other. His findings were that there is a correlation between market power and profitability and that market power should be treated as an indicator of performance. He also states that the success of market power requires more fundamentals focus. On the same note, Leverty (2001) states that the option to build market power is available for more than one company and that non-price competition is likely to reduce profits associated with market power.

**Figure 2.1: Theoretical Framework for Meta-Analysis**



Source: Szymanski, Bharadwaj and Varadarajan(1999) an analysis of the market share-profitability relationship.

In order to gain competitive position, a company must focus special attention on such variables as market structure variables, competitive strategy and other firm specific resources which have direct influence on market power for business performance.

### **PROFITABILITY MEASURES**

There are many profitability measures, that can be used, previous studies widely used return on assets (ROA); return on equity (ROE) and the return on invested capital (ROIC) also known as return on investment (ROI), Szymanski (1999) stated that ROI and ROA can be viewed collectively. While these measures of profitability are widely accepted as reliable and strong measures of profitability they have certain shortfalls, most commonly that they are based on accounting information and thus account for neither time value of money nor the investment risks faced by the shareholders. Profitability is measured both for assets valued at cost basis and at market. Note: reference to "Average" is beginning balance + ending balance divided by 2.

- Labour and management earnings equals' net farm income minus an opportunity cost of 6% on average farm net worth.
- Rate of return on assets is the return to farm assets divided by average farm assets.
- Rate of return on equity is the return on farm equity divided by average farm equity.
- Operating profit margin is the return on farm assets divided by value of farm production.
- Asset turnover rate is the value of farm production divided by average farm assets.
- Interest on farm net worth is the average farm net worth multiplied by a 6% opportunity interest charge.
- Farm interest expense is the accrued interest cost.
- Value of operator's labour and management is the opportunity cost of the operator investing his or her time and management skills. Each operator makes this estimate which is then multiplied by the number of operators per farm.
- Return on farm assets is calculated by adding farm interest expense and net farm income then subtracting the value of operator's labour and management.
- Return to farm equity is calculated by subtracting the value of operator's labour and management from net farm income.
- Value of farm production is gross farm income minus feeder livestock purchased and adjusted for inventory changes in crops, market livestock and breeding livestock.

#### **Return on Assets**

Rothschild (2006), stated that perhaps the most critical financial goal of manufacturing firms is ROA. Investors rate the management performance of Chief Executive Officers (CEOs) and chief Financial Officers (CFOs) of manufacturing firms largely by their ability to wring profits from the assets under their control. As such, ROA is perhaps the premier metric of quarterly and annual results. However, virtually no company is able to measure and report on ROA at transactional level to allow managers to know ROA impacts on their day -to-day, deal-by-deal choices. The implications of this is that ROA is nothing more than high level after the effect report card on CFOs and CEOs reveal that there is no link between the day to day operations and the key financial goals of manufacturing firms.

Rothchild (2006) shows the ROA equation as follows:

$$\text{ROA} = \text{Margin} \times \text{Velocity}$$

where,

$$\text{Margin} = \frac{\text{Profit}}{\text{Sales}} \quad \text{and} \quad \text{Velocity} = \frac{\text{Sales Revenue}}{\text{Assets}}$$

The equation suggest that maximising a company's ROA requires managers to understand in great detail the trade-offs between margin and velocity product by product, order by order and customer by customer. In agreement with Rothschild(2006) is selling and Stickney (1998) who see ROA as a measure of a firms' success in using assets to generate profit it without looking at how the assets were financed.

Selling and Stickney (1998) show the ROA equation as follow:

$$\text{ROA} = \text{Profit Margin} \times \text{Assets Turnover}$$

where,

$$\text{Profit Margin} = \frac{\text{Net income} + (1 - \text{Tax rate})(\text{interest expense})}{\text{Revenues}}$$

### MARKET POWER AND PROFITABILITY

Earlier studies found that the largest portion of variances in the business unit performance was explained by business unit effects, followed by industry effects and then corporate effects; Rumelts(1998), McGahan and Porter(2001). There are many competing views about the relationship between market power and profitability, most of which have never been reconciled. Base on the studies available the author has chosen to concentrate on three studies as well as three contradictory studies. The study of the relationship between market power and profitability can be traced back to; Buzzel, Gale and Sultan (2000) who reported a positive relationship between the two. They found that higher market power leads to greater profits, because of market power and lower cost resulting to economies of scale effects and also the learning effects. Since then there has been many competing ideas about the relationship between market power and profitability. There are a number of reasons why some authors believe that market profitability could be positively related to market power. Newton (1999) states that if we ignore the possibility of coincidence, the correlation between market power and profitability can be interpreted as follows:

- Market power determines profitability;
- Profitability determines market power;
- Or some other variables determine both market power and profitability which can be interpreted as well managed and successful firms enjoy high profitability and natural growth.

Venkatraman & Prescott (1996) also found that there was a positive and significant relationship between market power and profitability and that the positive relationship is not the same across different environmental contexts. However, he insists that the correlation between market power and profitability is meaningless unless related to an environmental context, the strategies pursues as well as particular macroeconomic conditions. This is in agreement with; Shanklin(1999) who also concluded that there is a strong link between market power and profitability but also warned against blindly following a market penetration strategy as a company's market power strategy needs to flow from corporate objectives. On the other side, there are those authors who are not convinced by the preceding arguments; Jacobson (2000) found no relationship between market power were due to lack of control of extraneous variance. He argued that the dominant explanation of market power and profitability relationship ignores factors such as management skills, company culture, access to

scarce resources and luck. Jacobson (2000) also argued that 'strategic intentions' such as investing to expand market share cannot result in abnormal profits under equilibrium because companies will continue to invest until the return premium diminishes. O'Regan (2002) stated that although it is not possible to accept or reject the contention that market power is a driver of performance, it was clear that the market power is an important consideration and one of the main strategic objectives of many companies.

Hegert (1990) reported a non-linear relationship between market power and profitability: the higher the market power, the more profitable the company, up to a point. Firms with a market power of more than 58% were actually less profitable than those with lower market power. Hegert (1990) found that although the relationship between return on assets and market power was positive in about a third of the industries studied, it was not significant. For almost another third of the industries the relationship was negative. He concluded that the alleged association between market power and profitability is not strong enough to warrant strategic marketing and management decisions to press for market leadership. Haggie et al (1999) suggested that 'it is a long standing view that market power and profitability cannot be pursued in tandem'. This will seem true because an increase in market power mostly requires more investment which might diminish the profitability in the short term. However, this seems to suggest that for a company to pursue market power they will have to forgo some profits. This literature, therefore suggests an inverse relationship in the initial phase. Fraeing and Minor (2004) summarised previous studies on the topic and the results reflect the fact that there is no agreement on whether a relationship exists between market power and profitability.

## **MATERIALS AND METHODS**

The area for the study is the selected food and beverages firms in Nigeria with greater emphasis on the selected firms which are: Nestle Nigeria Plc. with Head office located in Ogun State; Cadbury Nigeria Plc. with Head office located in Agbara, Ogun State; Flour Mills Nigeria Plc. with Head office located in Apapa, Lagos State; Guinness Nigeria Plc. with Head office located in Lagos State; Nigerian Breweries Plc. with Head office located in Ibadan, Oyo State; and, International Brewery Plc. with Head office located in Ilesha, Osun State. The study examined interrelationship of selected firms' capitalisation, market power and profitability within the study period. The focus of this work is on these operational parameters as justification for rising capitalisation in the study area within the study period.

Descriptive statistics were employed to describe the interrelationship of capitalization, market power and profitability using tables, ratios and percentages to measure each of the variables, while formulated hypotheses were tested using inferential statistical techniques.

The relationships between variables were determined using the Pearson Product Moment Correlation Coefficient (PPMCC) and Panel Data Analysis that involved the use of both the fixed and random effects analysis.

## **RESULTS AND DISCUSSION**

Three hypotheses earlier stated in chapter one are tested using Pearson Moment Correlation Coefficient and Panel Data Analysis through STATA 10 package.

### **Hypothesis One:**

H<sub>0</sub>: There is no significant relationship between capitalisation and market power among the sampled firms.

Table 4.1 shows the relationship between capitalisation and market power of both food and beverages firms. The variables involved are market share, total assets and total equity. It also

revealed that both total asset and total equity have positive correlation of 0.369 and 0.519 respectively with market share for food firms. This is also seen to be significant at 5%. This shows that an increase in total asset and total equity will lead to an increase in market share.

In the beverages firms, the table shows that both total asset and total equity have positive correlation of 0.909 and 0.813 respectively with market share. This is significant at 5%. The implication of this is that an increase in both total asset and total equity will lead to an increase in market share. However, there is strong relationship between total asset, total equity and market share of beverages firms than that of food firms. Conclusively, based on the above, the null hypothesis is hereby rejected and the implication of this is that, there is significant relationship between capitalisation and market power among the sampled firms.

**Table 4.1: Correlation Result Showing the Relationship between Capitalisation and Market Power**

Variables		Food			Beverages		
		MS	TA	TE	MS	TA	TE
Market Power	Market Share	1.000			1.000		
	Total Assets	0.369**	1.000		0.909**	1.000	
Capitalisation	Total Equity	0.519**	0.678**	1.000	0.813**	0.932**	1.000

\*\* Correlation is significant at 0.05level |Source: Output from analysed data using SPSS.

H0: Market power has no significant effect on corporate profitability.

Table 4.2 shows the empirical fixed effects regression results for market power on corporate profitability. The variables involved are market share, sales turnover and return on equity.

Table 4.2 shows that both market share and sales turnover has negative relationship with return on equity as regards the food firms. Both have significant effect on return on equity at 5% level. A 5% significant level is used for the tests. The results of the regression model provide goodness of fit with the number of R2 at 56.1%. R2 represents the proportion of variation of the dependent variable, accounted for by the independent variables the strong predictability of a regression model. This model has f-value for food firms at 6.43.

In the case of beverages firms, both market share and sales turnover have positive relationship with return on equity which is significant at 5% and 1% for the t-test respectively. The results of the regression model provide goodness of fit with the number of R2 at 70.5%. R2 represents the proportion of variation of the dependent variable, accounted for by the independent variables in the regression model. The high R2 value indicates the strong predictability of a regression model. This model has f-value for beverages firms at 12.34. As a result of this, we reject the null hypothesis which implies that market power has significant effect on corporate profitability.

**Table 4.2: Fixed Effects Regression Results of Market Power Effects on Corporate Profitability**

Variables (ROE)		Food Firms			Beverages Firms		
		Coefficient	t-value	p-value	Coefficient	t-value	p-value
Constant		3.834	1.05	0.302	4.674	2.48	0.131
Market Power	Market Share	-7.816	-2.21	0.036**	2.389	2.15	0.031**
	Sales Turnover	-0.183	-2.61	0.015**	2.480	9.56	0.000*
Goodness of Fit:							
R		0.749			0.840		
R <sup>2</sup>		0.561			0.705		
f-value		6.43			12.34		

\*Significant at 0.01 level; \*\*Significant at 0.05 level |Source: Output from analysed data using SPSS.

H0: Capitalisation size has no significant influence on corporate profitability.

Table 4.3 shows the empirical fixed effects regression results for capitalisation on corporate

profitability. The variables involved are total asset, total equity and return on equity. Table 4.3 shows that total asset has a positive relationship with return on equity while total equity has a negative relationship with return on equity. However, both are significant at 1% level.

The results of the regression model provide goodness of fit with the number of R2 at 88.5%. The high R2 value indicates the strong predictability of a regression model. This model has f-value for food firms at 95.97%. As regards the beverages firms, total asset has positive relationship with return on equity while total equity has negative relationship with return on equity. However, the two are significant at 1% level. The results of the regression model provide goodness of fit with the number of R2 at 64.3%. The high R2 value indicates the strong predictability of a regression model. This model has f-value for beverages at 22.48. Based on this, we reject the null hypothesis. The implication of this is that, capitalisation size has significant influence on corporate profitability.

**Table 4.3: Fixed Effects Regression Results of Capitalisation Effects on Corporate Profitability**

Variables (ROE)		Food Firms			Beverages Firms		
		Coefficient	t - value	p - value	Coefficient	t-value	p - value
Constant		6.518	7.00	0.000*	2.480	5.16	0.000*
Capitalisation	Total Asset	2.599	8.92	0.000*	0.848	4.52	0.000*
	Total Equity	-4.333	-13.79	0.000*	-1.158	-6.29	0.000*
Goodness of Fit:							
R		0.941			0.802		
R <sup>2</sup>		0.885			0.643		
f - value		95.97			22.48		

\*Significant at 0.01 level; \*\*Significant at 0.05 level |Source: Output from analysed data using SPSS.

## CONCLUSION AND RECOMMENDATIONS

The study examined the interrelationship of capitalisation, market power and profitability. Findings from the study revealed that capitalisation and market power have positive significance relationship. This indicates a very strong relationship between the two variables. The study further revealed that market share is an important determinant of profitability. This was to show the important and significant effect of it (market share) on corporate profitability. Overall, the result support that market power has significant effect on the corporate profitability of the sampled firms. Also, the study revealed that capitalisation has greater influence on corporate profitability and this influence is significant. The study based on theoretical expectation, it provides evidence of a positive and significant interrelationship of capitalisation, market power and return on equity measure of profitability of the sampled firms. The implication of this is that, the sampled firms were able to utilize their capitalisation size and market share to impact positively on their firms' profitability.

Based on the findings in the study objectives, the research findings suggest that management can do the following in order to make their companies to be more profitable.

Management must see to an increase in total asset and total equity that will lead to an increase in market share and providing positive return on equity for an organisation.

Management of an organisation need to increase their market share and sales turnover to effectively increase their profitability measure.

Also, total asset as direct effect on return on equity, which is an increase in the total asset will lead to an increase in the profitability measure of the organisation.

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# **The Metaphor of Gastrocentrism and the National Dilemma in Anglophone Cameroonian Poetry: The Examples of the Poetry of Mathew Takwi, Emmanuel Doh and Nol Alembong**

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## **ABSTRACT**

The perception of the nation's wealth as "a national cake" by both the rulers and the ruled has placed many African countries in a dilemma and this poses a challenge to nation-building. The nation is conceived and perceived by both the superstructure and the base in the diadic image of a perishable cake that if not eaten, will get bad. The cake as a metaphorical symbol is reminiscent of the Lacanian concept of lack and desire. As an absent centre around which major conflictual actions are enacted, the cake, like the nation is not respected, worshipped, served or maintained, but it is delicious, fragile, edible and appetizing.

Analyzing Mathew Takwi's *People Be Not Fooled* (2004), Doh's *Not Yet Damascus* (2007) and Alembong's *Forest Echoes* (2012) using Jacques Lacan's concepts of lack and desire, this paper contends that the gastrocentric metaphor of the nation's wealth as 'cake' which dominates the three collections places the Cameroonian/African nations in a dilemma and poses a challenge to nation-building. The rulers have, and the masses who lack, desire what the rulers have. These contradictions and conflicts are poeticized in the ideological formulations which find aesthetic expression in the poetic vision of Takwi, Doh and Alembong. The paper proposes a move toward a socialist nation where the nation's wealth which encompasses socio-political and economic powers is linked to equity, nation-building and patriotism.

## **INTRODUCTION**

The scramble for power symbolized by the 'National Cake' is rationalized in altruistical terms as one of the obligations of political representation in contemporary politics. The fundamental problem of governance in African contemporary societies is the concept of "you eat or you are eaten". That is, if one does not eat, he or she will be eaten up. This gastronomic mode of existence has resulted in lack of patriotism and faith that put the nation/state in a dilemma. This egocentric and egoistic way of life of both the rulers and the ruled has narrowed down their perception and conception of a nation or a state. While the ruling elite sees the nation/state as its plantation where it can feed fat, it is also reminded of the various promises this ruling class made during the campaign for self-government and independence. This dialectic in perception and conception of socio-political and economic power has always created conflicts and contradictions in African contemporary politics. The masses who are excluded from the mainstream of socio-political and economic powers desire these very powers they lack. Political power is in the mainstream of the "National Cake."

Gastrocentrism is a concept coined from gastronomy. According to Cambridge International Dictionary of English, gastronomy is the art and knowledge involved in preparing and eating good food (584). Within the context of this paper, eating good food is a metaphor of the possession of socio-political and economic power because political power is money, and money is power.



African leaders' conception of political power as consumables constitutes a major threat to nationhood. If the socio-political and economic power they possess is seen as a spoon that is used in "eating the nation", then this misuse of power can only create conflicts that threaten the very survival of a nation; consequently, the nation is at risk. From this assertion, the following questions arose: What is the essence of acquiring power? Can a nation be viable if there is more consumption than production? What is the role of poetry in nation-building? How can this consumption mentality be replaced with a production mentality?

### **HYPOTHESIS**

From the above questions, this paper argues that the perception of the nation's wealth as "a national cake" by both the rulers and the ruled has placed many African countries in a dilemma. The nation is conceived and perceived by both the superstructure and the base in the dyadic image of a perishable cake that if it is not eaten it will get bad. The cake as a metaphorical symbol is reminiscent of the Lacanian concept of lack and desire. As an absent centre around which major conflictual actions are enacted, the cake, like the nation, is not respected, worshipped, served or maintained, but it is delicious, fragile, edible and appetizing.

### **THEORETICAL CONSIDERATION**

The analysis of this paper is guided by the Lacanian concepts of lack and desire. The concepts of lack and desire are fundamental in Jacques Lacan's psychoanalytic thinking. According to Lacan, the libido or sexual drive does not have any given pre-given persons or parts of bodies, can be the target of desire. These two concepts revolve around the theory of the Oedipus complex and is a demonstration of the reproduction of male dominance and male contempt for women. In the context of patriarchy, mothers treat boys as independent and outgoing persons. Conversely, girls are loved more narcissistically as being like the mother. Boys' separation involves identification with the father and the symbolic phallus as the domain of social status, power and independence. That is, the power of the phallus is understood to be necessary to the very existence of subjects. Here, the phallus first acts as the transcendental of the power of the symbolic order; secondly it serves to split the subject from the desire for the mother; and finally it allows the subject to experience itself as a unity by covering over a sense of lack. (Chris Barker, 194)

The centrality of the phallus to Lacan's argument renders woman an adjunct term and not even a complement. That is, in Lacanian psychoanalysis the feminine is always repressed and entry into the symbolic always ties to the father/phallus. It is from the strength of this psychoanalytic perception of the relationship between the power of the phallus and the perception of women genitals as inferior that this paper borrows a leaf. The female character in psychoanalytic discourse envies the phallus because of the power it has, which she lacks. And because she lacks it, she tends to desire it. Thus, within the context of this paper, those who are socially excluded from the mainstream of political and economic powers desire these powers which are symbolically and metaphorically referred to as the "National Cake." The National Cake in African literary discourse is a dense symbol with metaphoric possibilities. There is a strong desire to possess these powers by those who lack them. It is from this perspective that Jacques Lacan's concepts of lack and desire gain relevance in this paper.

### **DISCUSSION AND ANALYSES**

The analyses of this paper will be done under three thematic clusters: The nation as a national cake, the nation in a dilemma and the socialist realist nation.

#### **The Nation as a National Cake**

The cake as a metaphoric analogue of the state culls the Lacanian concepts of lack and desire.

Political campaigns in Africa are always characterized by promises that are difficult to fulfil. The politicians build bridges where there are no rivers; they also raise dust in a muddy environment. The masses are promised paradise on earth but upon assuming power the politicians are neither people-centred nor government-centred; they become egocentric and egoistic. They can neither serve the state properly nor fulfil their promises to the masses. Caught in this dilemma, the politicians indulge in practices that undermine the welfare of the nation and compromise the very existence of the populace. Some of these unorthodox and unethical practices include corruption and the abuse of the very power legitimized by the oppressed masses. Takwi's "Corruption" and "Wine of power", Doh's "Pretenders to the Throne" and Alembong's "Tug of War" bring out the above-mentioned two themes. The overriding consciousness that informs these four poems is critical.

In "Corruption" Takwi visits, interrogates and indicts almost all the strata of the society that should be seen in the process of nation-building but that delight in destroying the nation: from the policeman who pretends to control traffic to the politician who manipulates the Constitution to stay in power. The academia is also dragged in. The award of government contracts to fake companies and sexually transmissible marks in Higher education are also identified as banes to socio-political advancement and development. Even treasury bonds are illegally taxed by the treasury officials. The poet bemoans these unethical practices and contends that these are threats to the very survival of any nation:

*It is not the raised hand of a policeman on traffic control  
To marshal default driver to court, but  
Proudly squeeze out a bank note and let go.  
It is not the dishing out of undue marks  
To female students by lecturers,  
In skilful exchange of calmed libidos. (9)*

The poet perceives the role of the policeman who collects bribes from drivers on the highway and the university lecturer who transmits sexually as synonymous. Poetry becomes a medium between the poet and his fellow female students and drivers on the highway who are molested by lecturers and the police respectively. The poet's experience is to communicate to them the road of national degeneration.

Takwi's poetic critique is also extended to matters like the misappropriation of state contracts, the illegal imposition of thirty percent on treasury bonds that are supposed to be tax free and the manipulation of the nation's constitution. In fact, the leadership in place administers with two different Constitutions to create confusion:

*It is the giving out with the right hand of state contracts  
To masquerade companies by ministers and managers  
While the left receives smiling swollen envelopes  
Below sparkling oval tables. (9)*

The poet's use of alliteration in "...smiling swollen envelopes" (s, s) in this stanza brings out the bureaucratic ineptitude and indiscipline that characterize the civil service in contemporary Cameroon/Africa. The smiling swollen envelope is both a personification and metaphor of the tragic despoliation of the nation's wealth.

The poem closes with the politician's attempt to manipulate the constitution so that he can stay in power for as long as he wants since he is not yet satisfied with the consumption of the national cake:

*It is not the artful display of twin constitutions  
For same country, and the picking out of only  
Articles that fence ruler's misdemeanour at*

*Opportune moments;*

*But rather, this virulent endeavour to tickle it out! (10)*

Takwi is able to use his poetry to explore the question of guilt in the national tragedy within a framework informed by class consciousness and analysis. His poetry is characterized by a contemplative tone which is painstaking and shrew in its attempt not to compromise the organic proximity between the poet and the oppressed masses. One country has two Constitutions and the leaders manipulate them at their whims and caprices. This is absurd and bizarre.

In "Wine of Power" Takwi perceives power as an alcoholic wine that drunken those who possess it. Once these rulers acquire these powers, they are deaf, dumb and numb to truths:

*You infuse and overflow like the Nile in high season*

*Rendering the injected drunk, dumb, deaf and numb  
to truths*

*till national hurricane of vox populi streams in lightning speed*

*chasing out claspers like mouse;*

*as in East of Euro, tapping down Milosevic's  
shoulders*

*or in Abidjan to find out if Guei is a power gay. (20)*

The poet-persona personifies wine which is synonymous with power by addressing it 'You' to capture the devastating and destructive effects its abuse has on the nation and its people. Using poetry as a historical necessity, the poet warns these leaders by alluding to the wind of change and Eastern Europe and the social revolution that brought down General Guei from power in Ivory Coast in 2002.

In the very first stanza of this poem, the poet indicates that like wine, power is sweet; this means power is not meant to serve the nation, but the individuals concerned: "Sweet wine of mystery/ Fever that grips the greedy/ Glides into grey matters of uncultured beings/Letting loose the fickle little meanness of mankind/They cling to acme of control, / Wangling like crab on fish tail in quiet sea". (20) The alliteration 'grips the greedy' (g, g) is pivotal and focal as it brings out the essence of the acquisition of power in contemporary African politics.

Doh in "Pretenders to the Throne" writes with the same orientation. In this poem, Doh equates education with administration. What particularly shocks the poet is that after many years of intellectual drilling some of these African intellectuals who have become politicians behave as if they did not go to school. He sees them as a threat to good governance because they are neither concerned with the people nor with the state they pretend to serve. The poet laments:

*And in the heat of this hour*

*I look at all the ado gone sour*

*I wonder at humankind's sense of priority*

*A bizarre notion of true value,*

*How warped our sense of worth!*

*I see pretenders to scholarly thrones*

*lagoon in their effort politicians to turn,*

*I see those the "ignorant" to nurture*

*Themselves worse than any plague,*

*Yet parading as masters of the hour. (63)*

Doh speaks/writes with the voice/pen of a revolutionary who is concerned with events in the history of post-independent Cameroon. His poetry is a reaction to the pitfalls of national consciousness and it speaks with an assertive firmness and aggressiveness. Here the ruling class manoeuvres situations, distorts facts and plots against the people because of the nation's wealth. In the fifth stanza of this poem, the poet-persona indicates that power in African politics is not acquired for the construction of the society, but for its own destruction.

## Hear the poet:

*As in your rant you destroy  
In the guise of cultivating  
A true Beelzebub, Lucifer's number One.  
In that reeking philanthropy  
But time, time! (63)*

The poet sees the philanthropy of the ruling class as a camouflage, and he reiterates that time is the ultimate judge. One of such philanthropic acts is the Chantal Biya's Foundation that prevents mother-child infection from HIV. This Foundation is owned by President Paul Biya's wife, Chantal Biya. In the optimism of the socialist realist tradition, Doh concludes:

*Forever darkness may seem to rule  
With shadow conjuring apparent wholesome shapes  
Time alone will usher in dawn  
And open this can of worms. (63)*

Doh is a committed revolutionary who has strong patriotic feelings and is bitterly disappointed by the betrayals of the ruling class that has held the nation to ransom; the nation is a plantation that is being exploited without being nurtured.

Like Takwi and Doh, Alembong's ideological orientation and consciousness in "Tug of War", is a powerful expression of hope and faith in nation-building. In this poem, the poet brings out the dialectical relationship that exists between the ruling class and the ruled and its impact on the nation. Both parties take very rigid positions in defence of their interests. In this dialogic and dramatic poetic piece, Alembong's focus is on the many voices that express societal concerns. He allows both the rulers and the ruled express their worries freely, actually placing them on the same plane. The uncompromising and the rhetoric of violence articulated by each group demonstrate their scramble for the nation's wealth:

*Government: You are a plague of rats  
That ruins the nation the way  
Rats sack a barn of grain.  
Your 'ghost towns' crusade has  
Made the nation a colony of rats  
In church ceilings.  
Heed the call of Zacchaeus:  
Pay your taxes, so we may stay in business.*

*People: You are the crocodile  
That swallows its own eggs.  
The honey bee is wise:  
It sucks nectar but  
Leaves back pollen on the flower,  
Our wages run for months unpaid  
Because you're the crocodile, not the bee.  
Pay us, so we may pay our taxes. (32)*

It is clear from this particular poem that change involves a dialectical relationship between destruction and construction of the status quo: destruction of the old order and the building of a new system that is not even evident because of the greedy attitude of each party. The poem is an eloquent expression and assertion of the will of the Cameroonian/African people to achieve their dreams. The government does not want to pay its workers and yet expects them to pay taxes. This poem represents an advanced or regressive development in the economic basis. There are two issues at stake which are related to economic determinism; that is the link between ideological superstructure and economic base. These two stanza poem is charged with emotions for both the oppressors and the oppressed. None of them is willing to give in. These rigid positions are defined by the social consciousness of each which is determined by

their world-views. The positions taken by the two parties cannot develop or advance a nation since each group wants to have a share of the national cake.

In terms of linguistic expression, there is neither complicated stylization nor artificial adornments. The poet's sense of patriotism finds expression through the archetypal animal imagery/metaphor he explores to convey his ideology. He makes effective use of animal imagery to reinforce his thematic concerns. The masses are described as "a plague of rats/that ruins the nation the way/Rats sack a barn of grain". And the government attributes this to the ghost town of 1992 after the flawed Presidential elections. The people on the other hand insist that they be paid before they can pay their taxes. The government is perceived as "...the crocodile/that swallows its own eggs". This is a frightful image that echoes the despoliation of the nation's wealth. The people's stand is antithetical to that of the government. The stand of the people is a declaration of intent, an explicit confirmation of the necessity to confront neo-colonialism and challenge the bourgeois ideology that has compromised their very existence.

The title of the poem "Tug of War" is incorporated into the poem itself which creates a feeling of being in the midst of the action as the two classes seem to engage in a tug of war over the "National Cake". The theme of life as change and the sub-theme or motif as of the continuity of a continually changing social reality is attested in the different world-views expressed in the poem. The conciseness of his images and the anger in his tone highlight the disappointments of the political systems put in place in the Cameroonian society. Each party uses grotesque animal images to describe the other. While the masses are rats that eat just anything, the national cake inclusive, the government is crocodile that swallows its own eggs. The image of the crocodile swallowing its own egg is a frightful symbol that depicts the degenerative process and the lack of continuity in the Cameroonian socio-economic life. Only in a language so fundamentally suited to poetry as English can one find such verses charged with poetic meaning. More than that, Alempong's poetry is rooted in his studies in the oral traditions of his people. This explains why he utilizes such images in his poetry. When one of these researchers interviewed Alempong on the 8th of February 2010, the poet admitted that his poetry, from the standpoint of style is influenced by his studies in Oral Literature. Essentially, the language of oral narrative is simple and accessible. The poet contends:

*[...] from the point of view of style, yes my poetry is in line with the mainstream African poetry. And also you must have realized that my style is influenced by my studies in oral traditions. So there is a lot of orality that comes in when you look at my style. (Interviewed on 8th February, 2010)*

That explains why his flora and fauna are drawn from his immediate cultural environment. His diction attests to this. For instance, words like: flowers, rats, bee, nectar and crocodile are some of the fauna and flora that show that Alempong was inspired by his cultural environment.

From the reading of the four poems above, it is clear that the two poems are densely argued, well thought out, and very engaged with socio-political and economic experiences of the Cameroonian people. There are also indications of unusual nightmarish descriptions of the experiences of the masses. The four poems question both natural and socio-political tragedies within the framework that is informed by class consciousness and dialectical world-view. The three poets believe that one of the contributing factors that has led to the postcolonial tension and conflict in the Cameroonian/African societies is the tendency among those who find themselves in positions of power to see those positions as their birth right; consequently, the consumption mentality continues to take precedence over the production mentality. The final part of this paper examines the nation in a dilemma as result of the scramble for its wealth.

### **The Nation in a Dilemma**

With the increasing attitude of the consumption mentality in African socio-political and

economic life, life becomes a bewildering dilemma and a vexing enigma. Neuroses, hypertension, fear and paralyzing pessimism dominate much of human existence. The second part of this paper sets out to analyse some of the poems that clearly articulate this thematic concern. Takwi's "Redress", Doh's "The Trail" and Alembong's "The Plague" preoccupy themselves with these themes.

Takwi's "Redress" constitutes a catalogue of problems that must be presented to the President if the poet-persona must meet him. The list of problems in the poem can demoralize a nation and diminish its potentials. This seven stanza poem is ideologically loaded. The poet's hypothetical statements are repeated in the poem seven times with the use of the word 'if' to emphasize the difficulties and challenges that are involved in meeting an African Head of State:

*If I were to meet the President  
I would tell him that his people  
Are ropy and their pockets hollow.  
If I were to meet the President  
I would beckon him to see  
How his people shiver in groans  
How maggots twist to tunes  
Of stinking cans. (4)*

The image of hollow pocket is a metaphorical representation of the poverty-stricken society where the people live below bread line level. And because of this poverty his people "shiver in groans." In this labyrinth of human disillusionment, despair seems to be the only hope for the wretched of the earth; people without shelter: "If I were to meet the president/I would show him the pictures/of the leaking thatched roofs and/Oozing sores of wrinkled-faced youths. (4) It is the greed and lust of the ruling elite that have resulted in this depraved society where others live in leaked thatched roof while others live in "marbled palace" and "Enjoy filtered air void of mosquitoes." (4) The beautiful use of contrast here is a poetic device par excellence. The poet carefully but artistically compares and contrasts the sordid existence of the wretched masses and flamboyant and affluence of the ruling elite to the wretched masses. The poet thinks that the compartmentalization of the Cameroonian society as reflected in this poem only places her in a dilemma.

In the last stanza, the poet-persona, appalled by the injustice done to the people is angry. In fact there is some degree of violence in his voice and he is determined to meet the President. Now, it is no longer a matter of "if I were to meet the president" but:

*Now, I stride to meet the President  
And now to hit his glittering glass table  
And pour venom into his face:  
Your numerous receptions are too sumptuous  
Your countless guests only ostentatious  
You toy with life of the masses  
While their hardship embrace your messes. (5)*

The poet-persona's tone in this last stanza is defiant; he is ready for the worst. The poem is a reflection of the collective consciousness of the Cameroonian people. While the bulk of the population lives below the bread line level, the ruling class swims in the cesspool of ill-gotten wealth.

Doh in "The Trail" also articulates the same ideology. The poet-persona asserts that in a society like Cameroon people must toil and moil before they can eat. A trail is the smell or series of marks left by a person, animal or thing as it moves. In the Cameroonian context the ugly marks left by the imperialists are being extended to the neo-imperialist period. The poet conceptualizes the African predicament as a tortuous odyssey wherein only the strong can survive. He concludes by saying that the present leadership in Africa that swims in ill-gotten

wealth is taking the people to an unknown destination; this means that there is no political compass that guides this leadership. The poet perceives life as a tedious journey contrary to the promises made to the people by the politician:

*This journey so tedious,  
Of plains stretching as far as the eyes can see  
Of hills so high into the sky  
Yet valleys deep into the belly of the sea  
And on mankind must toil... (39)*

Because of the difficulties and challenges that accompany life in a neo-colonial dispensation, people become snared by negativism and live with a sense of frustration. Doh has always tried to avoid the bleakness of life and paint the positive of life. "The Trail" expresses the dissatisfaction behind many of the problems that characterize the neo-colonial period: from oppression to the plundering and pilfering of the nation's wealth. The poet insinuates that material privation, destitution and indigence demoralize humanity in the midst of a world of abundance.

Confusion and commotion permeate and pervade this atmosphere. Life becomes a Sisyphean existence, a bewildering dilemma and a vexing enigma. The focus on the self rather than the society comes out clearly in the poem as the people do not know where to go:

*Marching across plains  
Climbing and descending  
To the one a journey by day  
To the other one a journey by night  
To yet another a journey into the unknown... (39)*  
In this labyrinth of human disillusionment people turn to the Divine for solace:  
*Yet to the other a divine quest  
And on we must forge  
Mere pilgrims along the trail  
Until journey's end.  
Realization! (39)*

From the appreciation of "The Trail," it is evident that a lack of ability and purpose, a self-satisfied confusion and lack of will, an inability to master the modern world and the inability of the leaders to move their countries ahead encapsulate this poem. Humanity in this poem is caught in the crossfire of life's battles for achievement and fulfilment.

Metaphor and symbolism are the artistic vehicle by which meaning is conveyed in its ideological essence in Doh's "The Trail". Life for instance is metaphorically presented as a journey. In the context of this poem, it is a journey without direction: some undertake this journey in the night; others in the day; yet others into "the unknown." The leadership in place is so self-centred that it cannot move the people forward.

Alembong's "The Plague" also expresses the same thematic concern. In this poem, the poet uses animal imagery to bring out the insidious but devastating effects of rapacious and self-centred leaders. He describes such leadership as both a social and political plague. At the literal level the poem is about the destruction caused by the millipede on the ecosystem; but at the symbolic and metaphorical level, the poem expresses the destructive effects of neo-colonial politics on Cameroonians/ Africans. The neo-colonial leadership is described as a millipede that has come to destroy:

*It came  
Like a millipede from a millpond,  
Crawled on our sunbeams,  
Crawled,  
Crawled. (24)*

The poet's use of millipede here is not by chance. The millipede is a small creature consisting of many parts having two pairs of legs. Like the millipede, most politicians have different identities; they do not mean what they say. They employ all the tactics they have learned over the years to hoodwink and cajole the populace:

*Snail-like  
It felt its way  
Into the womb of Mother Earth,  
Nourishing her body  
With slimy fluids. (24)*

While the politician who is metaphorically represented by the millipede finds himself in the "womb of the mother earth" which symbolizes the nation's wealth, the masses languish in abject poverty. They also desire this wealth because they lack it. Mother earth is a dense symbol with metaphorical possibilities in the poem. It stands for the nation's wealth which has been reduced to a cake. Again, the image of the millipede settling in the womb of Mother Earth is a frightful one because this means the end of the nation. The womb in the woman is a symbol of reproduction and procreation, and a woman without a womb is not a woman.

The neo-colonial leadership is perceived in this poem as parasites in paradise. Before the coming of this millipede/politician, Mother Earth blossomed; there was some sort of communal sharing. The poet bemoans and regrets the insidious, nefarious and devastating effects caused by the coming of this millipede. He is looking back in anger, and the repetition of the word, "Today, /today" emphasizes the regret and outrage in the poet-persona's voice:

*O, how well the flowers blossomed  
In the anthills of the savannah!  
How stout mistletoe stood  
On the irokos of the woodland!  
Today,  
Today,  
Taproot chambers are filled with smut  
And nascent roots nipped in fallopian tracks. (24)*

The taproot chambers that symbolize the foundation of the nation is now filled with dirt and ash which are signposts of destruction. Even the other roots meant for the reinforcement of the nation/tree are metaphorically "nipped in the fallopian tracks."

Alembong's exploration and exploitation of both the fauna and flora motifs constitute the forte of both his poetic composition and imagination. He demonstrates the multi-faceted and multi-dimensional definition of the environment. The environment to him encompasses the social, political, economical and natural. Poetry is a good instrument in the interpretation of environmental concerns. The images of plants and animals bespeak a concrete destruction of the environment. Images of planting are naturally associated with those of flowering indicating the fruitfulness and the preservation of the nation's wealth as well as its ecosystem. This takes us to a socialist realist nation which this paper deems a panacea to this problem.

### **Towards a Socialist Realist Nation**

In a socialist state that atmosphere of camaraderie reigns supreme. Here the concept of Julius Nyerere's *Jamaal* finds absolute expression. The wealth of the nation is synonymous with the state which is respected, served and not edible. The fallouts of nation-building are equally distributed. This type of communion brings a new exhilaration and spiritual and cultural stamina in the lives of both the ruled and rulers. Takwi's "Let the Seeds Grow", Doh's "Champagnat's Model" and Alembong's "Celebration" bring out this theme of social collectivism.



In "Let the Seeds Grow", Takwi uses the horticultural image to highlight the growth of any nation if well nurtured. He admits that the soil on which the seeds are sown is hostile but he believes that the seed that represents a young nation can grow if there is collaborative efforts in nurturing it:

*Drop, heavenly tears drop  
Pour divine sprinkles, pour;  
Pour to nurture Nature's seeds to germinate  
For grown crops on this egoistic farm of self-deceit  
Extend broad thorny leaves to nib buds of hopeful seeds  
Grasping the sun's rejuvenating warm,  
But the clouds with beckoning hands, only can say:  
Let the seeds grow. (64)*

The poet insinuates that if the rhythm and harmony of the people and their environment will be at peace; there will be celebration:

*Tall crops on the left, broad crops on the right  
Pace majestically with peacock shoulders  
And jibish giggles at low lying young seeds;  
Some with jerked heads, others with painful coatings  
Shedding tears from gigantic smashes of elders;  
But the clouds with swinging heads, only can say:  
Let the seeds grow. (64)*

The poem closes with these positive words that encapsulate growth:

*Let the grow green, fresh, and sprout;  
Let them grow green, fresh, sprout and bear;  
Not to destroy other crops or segregate and denigrate  
Nor shield younger seeds sprouting from fertile soil (64)*

Doh's "Champagnat's Model" (For Rev. Brother Norbert Simms) is a poems that also produces foreboding harvest in human existence as the exhilaration and new stamina in both the ruled and the rulers can move society forward.

Doh in "Champagnat's Model" presents a white Rev. Brother who treats everyone as equal. To him everyone is equal before the eyes of God. 'Champagne socialist' according to Cambridge Advanced Learner's Dictionary is a rich person who supports a fair society in which everyone has equal rights and the rich help the poor. (192) the word "Champagnat, etymologically is from 'champagne socialist'. This Rev. Brother's mode of life is characterized by simplicity; he works hard for humanity and sees everybody as equal. The word race exists only as a word:

*In every life a goal is set  
From the lowly in the eyes of men  
To the noblest in man's esteem  
Yet service was his goal  
Service to mankind  
Service to all and sundry.  
Unlike some, he was colour-blind  
Race to him only a word  
All are God's children  
To serve and improve upon,  
A veritable Champagnat's model. (32)*

This poem presents an ideal social formation that can usher in growth and development. In such a society as painted by Doh in "Champagnat's Model", the pitfalls of life give way to the pathways to life, where the gall of life becomes nectar of life's portion. In this labyrinth of human disillusionment, happiness may degenerate into sadness and love into hatred. But the poet thinks that if we have the fear of God in us we can move our societies forward:

*You will forever remain as I tell  
My tale by day under the baobab  
And by night by the fireside  
Of a Marist Brother who served us  
Like Champagnat would have wanted,  
In the manner of the Master Himself- the Christ. (33)*

The poem is concerned with psychology, especially the anxieties of someone who has lived in a society where others use their power to dominate others and appropriate more wealth for themselves while the weak suffocate in abject poverty. The poet exhorts all and sundry to emulate the humility of Jesus Christ personified by the model of Champagnat.

In terms of style, symbolism is the artistic vehicle by which meaning is conveyed in its ideological essence. Champagnat is a dense symbol with metaphorical possibilities. He represents fulfilment, equal appropriation of social space, national re-birth and self-worth.

Alembong articulates the same motif in "The Celebration." Here the dominant imagery that is exploited and explored by the poet is animal imagery representing human beings. Even animals of prey no longer prey on others. The camaraderie that reigns in this animal kingdom symbolizes the type of society the poet recommends for his own society. If animals can live in such harmonious and friendly society, human beings can do better than this; the poet seems to be saying: Eagles and hyenas screamed in joy/ And the robin and sparrow chirped in approval/ As the pig was carted in by the horse/ To head the farm. (70)

The awareness of the co-existence of two ways of life and peace within one social stratum is once more echoed in the lines below:

*Ants filed pass, millipede too,  
Grasshoppers hopped pass, wrens too,  
Frogs leaped pass, rabbits too,  
Serpents glided pass, seagulls too,  
Owls flitted pass, parrots too,  
And asses jogged pass and cats stole pass  
As the pig grunted repeatedly in approval. (70)*

Apart from the musicality created by the repetition of the word "too" at the end of the first four lines of this stanza, this device also emphasizes the freedom that characterizes this culture of sharing. This poem brings out the feeling of openness, self-consciousness and freedom that the culture of sharing incarnates. There are no victims and victors or victors and vanquished; everyone is a victor and a free born. "The Celebration" is a poem to the reader which suggests more than it says, offering an aesthetic for the poem as well as a way of life to the Cameroonian/African people. Alembong insinuates that animals live a better life than human beings who have reduced the nation into a perishable cake. This is because in the human kingdom, the class which is the ruling material force is, at the same time its ruling intellectual force and this very class which has the means of material production at its disposal has control at the same time over the means of mental production. The lumpen proletariat class is considered as object that can be used and discarded. Consequently, they are not considered during the sharing of the national cake.

## CONCLUSION

In conclusion, it is important to restate the hypothetical contention of this paper. This paper argues that the perception of the nation's wealth as "a national cake" by both the rulers and the ruled has placed many African countries in a dilemma and this poses a challenge to nation-building. The nation is conceived and perceived by both the superstructure and the base in the dyadic image of a perishable cake that if not eaten, will get bad. The cake as a metaphorical

symbol is reminiscent of the Lacanian concept of lack and desire. As an absent centre around which major conflictual actions are enacted, the cake, like the nation is not respected, worshipped, served or maintained, but it is delicious, fragile, edible and appetizing. The paper concludes by recommending a socialist state or what Julius Nyerere calls Jamaal where everyone is involved in decision-making.

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## Eulogising God in Christian Worship through Akan Traditional Appellations: A Case of Kumasi

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### ABSTRACT

Although Christianity has existed within the Kumasi Metropolis for over 100 years, Church worship has not been fully influenced by the rich indigenous cultural elements of the Akan. This is a result of the failure of the early white missionaries to fully appreciate and adapt Akan cultural elements like appellations in the liturgy of the Church. This paper therefore sought to look at the worship life of Christians of Kumasi with the view to discuss how some appellations in the Akan culture could be carefully integrated into Christianity in Kumasi. Since the study primarily focused on the description of the appellations in the ritual celebrations of Christian worship, the research problem was answered by adopting the qualitative research approach. Analysis was made to justify that Akan eulogy could also be adapted and used in Christian worship.

**Key Words:** *Appellations, Christianity, Eulogy, Proverbs, Traditional Worship.*

### INTRODUCTION.

One thing which is common to all forms of religion is worship. In worship, the devotees of the particular religion seek to adore the object of their worship; ascribing some titles which best help the worshippers to identify with their deity while they also seek to embellish the name(s) of the deity. Appellation could simply be described as the name or title by which someone is known. One major component of Akan and for that matter African Traditional Religion is the use of appellations. In Akan Traditional Religion, in all forms of prayer, recognition is first given to *Asaase Yaa*, Mother Earth, because the existence of the people is believed to be partially attributed to her. The next to be acknowledged are *Nananom Nsamanfo*, the Ancestors, through whose benevolence the community continues to exist.

Although God is widely known and fully acknowledged throughout Africa, His worship, in the true sense of the word, is very limited. According to the Akan people, *Se wokom Onyame a, wobekom nkamtrɔ*, meaning if you try to divine for, and on behalf of God you will fail. As such nowhere in Africa would one find a shrine or temple solely dedicated to the worship of *Onyame* (God). However, the Supreme Being, God, is always called upon in times of existential crisis or great need as well as during the celebrations of the rites of passage (Gehman, 1987: 202-208). Again, during the Akan *adae* festivals, although the main objects of worship seem to be the Akan black stools and the ancestors, it is during this period that the Supreme Being is given prominence, (Sarpong, 2011: 40). For in times of existential crisis, rites of passage and the *adae* festivals, the focus of the prayers is always the Mighty God. However, the Akans believe that God, being the creator, gave man some principles which have always been the yard stick of their behaviour over the years (Parrinder, 1969: 44).

It is all the same, reassuring and of great interest to know that the *Akans* of the Kumasi Metropolis have had a genuine knowledge of God and that they have had their own ways of

communicating with this deity, ways which meant that they were able to speak authentically as themselves and not as pale imitators of others when it came to the worship of God (Tutu, 1978: 336). Principally, *Onyankopon Twieduampɔn Kwame* is seen or acknowledged as the Creator and Sustainer of all creation, and for that matter life. He is therefore given a myriad of accolades to show His magnanimity, power, greatness and compassion. To the Akan people, He is a very personal God with attributes and honorific names (Sarpong: 2011). This strong conviction is showcased in their religion which has a central place in the life of the African (Gyekye, 1996: 18). This belief is daily demonstrated in the life of the Akan people through their 'worship' of the Supreme Being, God.

Additionally, He, God, is variously described by different African groups as, Excavator, Hearer, Carver, Originator, Inventor or Architect (Opoku 1978: 14-18). All these titles emphasize God's position as the originator of all things (Mbiti: 1970). The most important thing is that, the people, in this case the Akan people of Kumasi, always look for a symbol(s) in their society that stand(s) for what is being expressed (Sarpong: 2002: 21).

The appellations used for God seek to embellish or give a very clear "picture" as far as humanly possible, how the people, "see" or apprehend the Supreme Being. Appellations are created or formed based on things which are unique to the Supreme Being or with things or idioms common to the people in their environment. These appellations for God are coined out of human names, human titles, natural objects like trees and animals, idioms and proverbs. These idioms and proverbs are major components of Akan culture. Culture, in this case, can be described as the total life experiences of a people. Culture is made up of values. Furthermore, the idioms and proverb form part of the smaller segments of the cultural values which are known as cultural elements. These cultural elements are used extensively in Akan traditional worship in reference to the Supreme Being. Some of these elements of appellation have been successfully carried over into Christian worship in the Kumasi Metropolitan area.

## **METHODOLOGY**

To help solicit data, the researchers adopted the random and purposive sampling methods in selecting the population for the study. In this way the researchers randomly picked churches based on congregations, societies, parishes and assemblies of the various denominations. Kumekpor (2002) asserts that although the population or universe remains at a particular time, the same number of samples which can be deduced from that population may vary. Having randomly picked these churches, the researchers then purposively looked out for the right people who would offer the necessary information that helped in arriving at the needed information. For example agents of the churches were picked since they are involved in the daily administration of the various places of worship and therefore were in the position to give the correct picture as to what happens in the churches. The agents group consist of both the clergy and lay leaders called catechists, deacons or presiding elders.

From the larger church community, selections were made from men, women and youth of the general membership. The ages of the people selected ranged from 18 years to 80 years. The age groups were selected to help collect information from a wider range of people who have been involved in church worship over a considerable period of time. In addition to the groups of people mentioned above, some traditional Akan rulers were also interviewed as they are the custodians of Akan culture and cultural elements in the Kumasi area.

## **THE UNIQUENESS OF THE AKAN SUPREME BEING**

From the names, appellations, proverbs and idioms ascribed to the Akan Supreme Being, one cannot help but accept that in the Akan worldview, this Divine Reality is very unique and distinct from all other deities. He is said to be *ɔte ananka nnuro*, meaning the one who picks the

anti-snake/path adder bite herbs. Only very powerful traditional herbalists are capable of finding the best herbs used in treating snake bites, especially that of the path adder. In the Akan worldview only people who are under a grave curses are bitten by the path adder. If the Supreme Being is said to be the one to pick the *ananka nnuro*, anti-path adder herbs, then he is capable of averting every curse. The Supreme Being in the Akan thought is said to be *brakyiri a hu ade*, to wit the one who sees from behind whilst looking forward. This clearly indicates the Akan belief that God is everywhere at every moment, he is omnipresent and therefore sees everything that goes on around the world.

### **SOME NATURAL ITEMS ASSOCIATED WITH THE SUPREME BEING**

In addition to the Akan names given to the Supreme Deity by the Akan people of Kumasi, there are other natural items which in the Akan language, have the prefix '*nyanko*' which comes out of the Akan name for the Supreme Being, *Nyankopɔn*. One of such is rain water which is called '*nyankonsuo*' which translates into the Supreme Being's water. The rainbow is known by the Akan, including those of Kumasi as '*nyankontɔn*', God's bow. As seen from the Bible, in Noah's story, it was YHWH, the Creator who set the rainbow in the skies as a reminder of his unfailing love and protection to humankind (Gen. 9: 13-15). Here too, instead of associating the rainbow to any other source, or turning the rainbow into a deity, the Akan associate it with the Creator Himself.

There is also a local tree in the Kumasi Metropolis which, in the Akan traditional set-up, is associated with the Divine Reality. It is grown in front of traditional shrines and herbalists' homes. It normally grows into a three-fork branch pattern at the top of the stem. In Akan traditional religion, an earthenware pot is placed in the tree's fork to collect rain water, *Nyankonsuo*, whenever it rains. The water, thus collected, is used in preparing traditional medicines or concoctions. It is believed that when a child gets convulsions, and some of the rain water thus collected in the pot is sprinkled on the child it would receive instant healing. The Akan name for this tree is *Onyame dua*, God's tree. The *Onyame Dua*, (*Alstonia gongensis*) was used as a shrine of the Supreme Being (Rattray 1927).

All these are indications that the Akan people of Kumasi have for all the time believed in the existence of the Divine Reality. The God of the *Akanfoɔ* of Kumasi is not a remote and an indifferent personality, who does not seem to care about people and His other creations. The Akan God, therefore cannot be equated with 'the unknown God' or any of the tutelary spirits or the other divinities.

### **AKAN TRADITIONAL NAMES OF GOD**

Since the idea of this research is to try and incorporate Akan cultural elements into Christian worship. What is needed is to find out how these Akan Christians of Kumasi have related with the worship of God whose name is always honoured during church services. One area where this relationship is noticed is how these Akan people of Kumasi address God, the Supreme Being. For in the worldview of the Akan people of Kumasi, at no one time can a person dispense with the Supreme Being. So far as the Akan people of Kumasi are concerned, God, *Onyankopɔn*, is everywhere, He is the one the people resort to when everything else has failed. However, the God the Akan believe in is a spirit, he is eternal, he is very benevolent, he is also a holy God who is unique in everything, (Gehman, 1987: 190-191).

What is important here is the fact that in Akan traditional worship of the people of the Kumasi Metropolis, there are the names and appellations used to worship the Supreme Being. These Akan words are used in both human and drum languages in Akan worship. The *akyeremma*, (drummers) always, when they play in public, through the drum language, seek God's

permission as well as support during the entire period of drumming. Likewise, as the drums peel off their praises of God, the first steps any Akan traditional dancer takes, being a royal or ordinary person, are to recognize the fact that God is above and then seek his permission before dancing in public for protection against "any evil eye" that will watch him while dancing.

The Akan names of God, with their accompanying interpretations show how the *Akanfo* of Kumasi acknowledge and worship the Supreme Being. He is placed above all creatures and given the highest adoration in all things and at all times. These Akan Christians have carried right into the Church the same concepts they have had about the Supreme Being. In their prayers they appeal to *Awurade Nyankopɔn Twieduampɔn* to intervene in all aspects of life.

A look at some of the appellations of God by the Akan people of the Kumasi area gives us an idea as to how this Supreme Being is acknowledged, adored and worshipped by the *Akanfo* of Kumasi. Many Akan traditional worshippers of the Kumasi area, just like the Jews, use more of the appellations rather than the real names of God in addressing Him. Although the Supreme Being is known as *Onyame*, *Onyankoropɔn* or *Onyankopɔn*, the *Akanfo* of Kumasi prefer using such appellations as *Ɔdeɛfoɔ*; *Adom Wura*; *Ɔkatakylie*, *Barimayi!* when talking about God. The Akan God is the Supreme Being, just as He is depicted in the Bible (Gen. 17: 1, Ex. 15: 2-3, NKJV). He is not any ordinary god but the Omnipotent One, whom they call '*Onyame*' or '*Onyankopɔn*'.

The name *Onyame* denotes quite a lot. When that name is compartmentalised, what comes out are '*wo*', '*nya*' and '*me*'. That in full, in Akan, comes out as '*nea wonya no a, na wamee*' which translates literary as "The One whom when you own, makes you completely satisfied". That means that the Akan Supreme God is the one who completely satisfies all those who come to him. Also found in that name, *Onyame* is the word '*nyam*' which means respect or honour. So the Akan Divine Reality is the Respectable One. In return, He is the one who is able to impart some *anumuonyam*, "glory" and "honour" to all those who know and love Him.

Equally important is the name *Onyankopɔn*. This divine name is made up of the words *Onyame-ko-pɔn* or *Onyame-kro-pɔn*. The name *Onyame* has just been explained and defined as the all providing, gracious and satisfying One. The Akan *Onyame* is *ko* or *kro* meaning He is One. Thus to the Akan of the Kumasi Metropolis, his *Onyame* is just One and above all. He is unique in the Akan worldview and mind set. He literary has no equal. Again the Akan *Onyame* is *pɔn*. The word *pɔn* in Akan is a suffix signifying greatness or hugeness. For example, a very huge and tall tree is said to be an *odupɔn*, while a strong, powerful animal, like the bush cow or rhino, is described as *ɔbɔpɔn*. In effect, the Akan *Onyame* who is the one and only God is also the strong, mighty, unique and great One.

### ATTRIBUTES MEANT SOLELY FOR THE AKAN SUPREME BEING

The Kumasi Akan people do associate the Supreme Being with the provision of good health so that man could work; He is associated with rains to help in man's farming activities and daily needs. He is involved in good yields from man's toil so that man could live well, as well as in procreation so as to preserve man's future generations. He is therefore known as *Twereduampɔn*, '*dua a wotwere no a, wompɔn*', which literary means the tree one leans on and does not fall. So the Akan Divine Reality is the One a person can lean on as a strong tree for support and never fall. He is the dependable One, the Lord God Almighty.

The appellation *Twereduampɔn* could be expanded as the *Twu-adu-ampɔn*. This name is believed to be a corrupted form of a North African terminology. There was supposed to be a Sumerian god known as Anu. It is also believed that the Akan people many years ago, migrated with other peoples from Mesopotamia. As a result the people of North Africa used to talk about

the *Adu* or the *Anu* of the *Twi* people. This again gives some credence to the probable religious links between the people of North and West Africa in ancient times in the days of old (Danquah, 1944: 49).

The Akan God is known again as *Awurade*, Lord, by the *Akanfoɔ* of Kumasi. When He is addressed as *Awurade Nyankopɔn*, it translates into the Lord God. He is again called *Nyansaboakwa Nyame*, to wit, the Lord God who is the citadel of all wisdom. He is *Teteboakwa Nyame*, meaning the One who has existed in eternity past who exists now and will continue to exist as the Eternal God. He is therefore given the appellation *Berebere* that is to say the God who has no beginning, who existed in eternity past and has no end. He is further addressed as *botantim Nyame*, the Rock of Ages.

He is also said to be *ɔdomankoma*, that is to say, the One who takes care of the whole earth. But *domankoma* could be separated as *ɔdom Ankoma*. *Ankoma* is an Akan name for a male. *ɔdom Ankoma* then means the helper or raiser up of the ordinary man to become somebody or a hero. The Akan God is also addressed as *Nana*. *Nana* means grandparent or ancestor. God is acknowledged by the Akan as the Great Grandfather or Great Ancestor. He is an ancestor far beyond the level of the ordinary human ancestor. *Onyankopɔn then*, is the Ancestor *par excellence* of the Akan people.

### **HUMAN ATTRIBUTES WHICH ARE ALSO ASCRIBED TO THE SUPREME BEING**

In their desire to acknowledge and worship God in a more realistic and practical manner, the Akan of Kumasi have associated the Supreme Being with some human attributes. In that sense a feeling of divine-human relationship has been developed, thus making the divine-human encounter more realistic. This divine-human encounter is akin to what is found in the Bible. In the Bible, God is seen then as either, Father, Shepherd, Husband, Master, Guide, Defender, Friend or one of such human relationships that makes Him real to the worshipper.

Basically, the Akan Supreme Being, known to the people of Kumasi is first and foremost acknowledged as a parent. He is therefore addressed as *ɔbaatanpa Nyame*. *ɔbaatan* in Akan means a benevolent parent, especially used for a woman who is a parent. To say *ɔbaatanpa* then means a good parent. The Akan Supreme Being is therefore the good parent who constantly provides all the needs of his children. The *Akanfoɔ* of Kumasi believe that the Divine Reality they know of is the Father of all humanity. As such the Akan say that *Onyame na ɔhwɛ nnipa*, that is to say, it is God who takes care of all (sick) people.

In the worldview of the Akan of Kumasi then, humanity extends beyond the Akan territory into the whole world. The Akan God is the *Ankonam boafɔɔ Agya*, to wit, the father of the lonely, the helpless and the needy. The Akan Supreme Deity is further acknowledged as *Kɔmfɔ Adu*. *Kɔmfɔɔ* means a priest or diviner. The title *kɔmfɔɔ Adu* is given to a dependable and reliable friend or a reliable diviner whose predictions always come true. The God of the Akan is known as a reliable friend, a dependable and truthful person.

This God is also addressed as *ɔbrɛmpɔn* or *ɔkatakylie*, meaning the great, powerful and brave warlord. In Akan history only very brave and powerful warriors were given the accolade, *katakylie*. The title was given by an overlord to his brave and strong warriors who successfully undertook military campaigns. In the view of the Kumasi *Akanfoɔ* therefore, the Supreme Being is the strong, valiant one. He is the *ɔnwanwanin*, the wonder working person. Again He is addressed as *Okurakwaban*, the one with the hefty strong shoulders, who is capable of defending and protecting his people (Kuma, 1980:7).

Furthermore, He is given the accolade *Omintinminim*. The usage of this word for God is quite interesting. The word is used for very strong, stubborn, unshakable and powerful, and at times



very difficult people. When used for God, the impression is about the fact that He is impregnable and 'a no push-over' person. He is the one no person can take for a ride.

Again, He is said to be *Otibrekesedu*, the strong one who is capable of divining all secrets. The Akan see the Creator as an all knowing person, from whom nothing can be hidden. The Akan Deity is again said to be *Kumamperibie*, for He does not in any way discriminate among people. To the Akan people of Kumasi, the Supreme Being is in all matters impartial as he deals with all people on equal basis (Kuma, 1980: 9).

Another interesting appellation given to God is '*Ogyam*'. *Ogyam* means friend. *Ogyam* however, seems to be the shortened form of '*ogyama*', a common tree plant in Akan forest areas. *Ogyama* is an all-round purposeful plant. It is a fruit bearing plant. The fruit is food for different types of birds while its leaves are used to prepare a concoction which is used in treating wounds and especially ulcers on the skin. The leaves, mixed with other herbs, are used in preparing other traditional medicines for treating some health hazards among the Akan people, while the stem is also used as a chewing stick among the traditional people. As seen here, every part of *ogyama* is useful to the people. When the Supreme Being is addressed as *Ogyam*, according to, Emeritus Archbishop Sarpong, an Akan anthropologist, in a personal interview, the impression being created is that of an all-round faithful, reliable and all-supplying father figure or friend.

If the Christian form of worship within the Kumasi Metropolis is celebrated through the use of some of these appellations, it would be very easy for the Kumasi *Akanfoɔ* to understand them. Again, it will be easy for the worshippers to associate themselves with these values, thus enriching the Christian worship in Kumasi. Although Akan chiefs and kings are lauded through the use of some of these forms of appellations some people in the orthodox churches feel very uncomfortable when some of these praise items are used for God in the church.

### AKAN PROVERBS, IDIOMS AND OTHER COMMENTS ABOUT GOD

Proverbs, idioms and other wise sayings form a major component of the Akan language of the people. Through proverbs and idioms the Akan people of Kumasi pass on the wisdom of the land to the younger generations. The whole philosophy of life of the Akan people of Kumasi is also embedded in these proverbs, idioms and sayings. But most importantly, the religious life of the Akan people is more or less enshrined in the proverbs and idiom.

So proverbs and idioms play a major role in the traditional worship of the Akan of Kumasi. The proverbs are used in the form of appellations for kings, chiefs, ancestors and other dignitaries. In the same way the Akan laud 'Divine Reality' through these rich proverbs and idioms. From Akan proverbs and idioms, there is every indication that the *Akanfoɔ* of Kumasi have always believed in a God who is the Creator God. '*Gye Nyame*', Except God, is an Akan wise saying indicating the Akan people of Kumasi's dependability on the Supreme Being. This proverb, *Gye Nyame*, has been graphically represented into a motif and widely applied in the visual art forms of the Akans.

It is also a common Akan idiom or expression, showing that in times of distress and trial the Akan people of Kumasi believe that it is only God who can save the situation or intervene on behalf of the needy. Some churches have used this symbol in decorating their chapels. A similar idiom like the one above goes like: *enso Nyame yɛ*; meaning it is not difficult for God to handle (a matter). In a critical situation when man becomes powerless, his only source of hope and support then comes from God. If man therefore puts his trust in this God, he then leaves his destiny in the hands of the capable God.

Sarpong (2002), describes the period when he first entered the seminary to start with his theological education. It was fashionable in those days to quote from the works of theologians like St. Aquinas and Calvin, with purely European philosophical ideas to support issues being

discussed on the African continent. According to Sarpong, almost all examples cited in academic discussions were foreign to the students. It is just like saying that through the mercies of God sinners will be cleansed and will be as white as snow. Meanwhile most educated Akan of Kumasi who have gone through the corridors of academia have never seen snow in their life time.

The liturgies being used in the worship services of the churches in the Kumasi Metropolis were developed through the use of the philosophies of people like St. Thomas Aquinas, John Calvin and Martin Luther. Likewise, theological expositions are mainly based on these same European philosophers and their philosophical ideas. The *Akanfo* of Kumasi have through their long history developed their own unique philosophy for themselves. The philosophies that they have known and used as part of their worship as well as their everyday activities are equally good and more relevant to the Akan situation than the European philosophies.

### AKAN APPELLATIONS OF GOD

As stated earlier on, one of the rich components of the cultural elements of the Akan people of Kumasi is that of appellations. In both human, as well as drum languages, the Supreme Being, great and famous people, as well as kings, queens and chiefs are lauded through both oral and drum appellations. In all traditional prayers, the appellations ascribed to the God the Akan of Kumasi know are simply amazing. Going through some of the appellations which the Akan of Kumasi ascribe to the Akan Deity, one realises how the Akan people of Kumasi see the Creator God and how highly He is placed in the Akan thought and how He is worshipped.

Here is an example of an appellation to the Creator, as given by Pastor Boahen of the African Faith Tabernacle Church, during a personal interview,

<b>Efiritefe</b>	<b>From time immemorial</b>
<i>Woyedomankoma Nyame</i>	The dependable God
<i>Se yedi w'asem so a,</i>	if we all abide by your injunctions
<i>Deeye hia nyinaa,</i>	Then shall we get whatever we want,
<i>Se yefufuo, se ye kək</i>	Be it white or red.
<i>Ey Ɔbɔdɛɛ mmɔbrɔhunufɔɔ</i>	It is the Creator, the Gracious one.
<i>Yema wakye a akudonto</i>	Good morning to you, dear One.
<i>Onyame! Yema wakye!</i>	God, we say good morning to you
<i>Neamesuayi ma me nhunu no yiye</i>	what I am learning, help me to be successful

The Supreme Being is said to *be ato-ko-a-frɛ...* or *to apenten a na yɛfr no*, the protector and defender whose support is sought for in times of war or emergency situations. He is *ɔkofroboɔ*, to wit the one who fights till he climbs mountainous regions to overcome his enemy, or in other words the one who fights and follows the enemy into difficult terrains. The Supreme Deity is also given the title *Ɔserɛmu Osei* that is the lion, which is the ruler of the savannah regions. In this sense God is compared to the powerful lion, which is the master of all that it surveys. The Divine Reality is the *ahunu-a-bɔbrim*, the one whose mere presence creates shivers or fear in the opponent (Kuma: 27).

This Deity is the *Ɔwesekramo*, the reliable and dependable diviner or fortune teller, whose predictions cannot be challenged. He is the *'bunukeseɛ a ɔwɔnsuo'*, "the deep part of a stream which contains much water", showing that God always has enough and always oversupplies the needs of his people. The Akan God is *'Ɔdɔtɔkeseɛ a, w'ase wɔnwini'*, meaning the thick overgrown forest which provides shade for the way faring man, indicating that this God provides care and protection for all who rely upon him. He is the *Ɔma dodoɔr ma-nfonoe*, the one who gives more than requested, more or less the one who always over-supplies (Kuma: 1980: 5-10).

To the Akan people of Kumasi, God is *Ɔdɔkɔto bɔnware*. *Bɔnware* is a sharp, thorny creeping undergrowth plant. It is very difficult to weed in an area covered by this plant. Many farmers

would wish that that plant never grew on their farm lands. But the Akan God is always ready to work in such areas, indicating his ability to undertake very difficult tasks on behalf of His people. He is *fentefrem a omene osono*. *Fentefrem* is a marshy area while the elephant is a huge animal that can move through all kinds of places with ease (Kuma: 9-10).

The crab is also known as *fentefrem* in Akan. One of the greatest enemies or tormentors of the elephant is the crab. As an elephant drinks water from a stream, since it cannot sieve the water, it may mistakenly pick up a crab with its trunk. Such a crab then begins to scratch and irritate the elephant inside its mouth. To get rid of the crab the elephant is said to hit its head many times against any big tree it finds in an attempt to force the crab out. The result is that the elephant eventually may wound itself and die. The Divine Reality is unseen but like a crab inside an elephant's head, He is capable of humbling all His enemies.

Furthermore, the Divine Reality is addressed as '*krotwiamansa a, ne din ne ne honam se*'. *Krotwiamansa* is the title for the leopard, which is powerful and is able to control the territory under its survey. So to the Akan, God is seen as the *krotwiamansa* whose colours correspond to his qualities. This Supreme Being is again said to be the *onwamkesebrekuo Atta a, oma ne ho so a...* *onwam* is the horn bill. When the horn bill flaps its wings and crows some winged animals in the forest get worried or get scared. God then is seen as the horn bill who, when he flaps his wings creates fear among his enemies. God is also addressed as '*daase a, ensa Nyame*', the one you cannot adequately and fully express your gratitude to. For before a person finishes saying 'thank you', God would have added more things for which the person needs to give thanks.

All the listed names, attributes and appellations clearly show that the Akan people of Kumasi have a great view of the Creator God, just as the Jews did. The Kumasi *Akanfo* then ascribe to Him all that he is supposed to be. Unfortunately, the Church in the Kumasi Metropolis has failed to use these aspects of Akan language in describing the Supreme Being, simply because these idioms and proverbs have become part of the drum language which is associated with traditional Akan worship and liturgy.

### APPELLATIONS IN AKAN HYMNS (*EBIBINNWOM*)

Another format in which the appellations of God are clearly brought out are *Ebibinnwom*, African hymns, of the Methodist Church, Ghana. The *Ebibinnwom* lyrics are a 'Fanti cultural form' that have found 'an honoured place within the life of the Church' (Williamson: 1955). There are two types of *Ebibinnwom* lyrics. There are the written ones which are found in the *Christian Asore Nnwom*, the Akan hymn book of the Methodist Church, Ghana. There are also the 'improvised' or 'spontaneous' *Ebibinnwom*, which come up on the spur of the moment during a programme (Adubofour: 1987).

Whilst the written lyrics are used in a regular order of worship, the improvised ones are used as a commentary on the sermons and serve as a punctuation. Such a commentary gives the preacher a clear feedback from the congregation. This commentary makes the preacher aware of the effects of the way he is communicating with the worshippers from the pulpit. If there is no such "interruption" then the chances are that the preacher's message was not appealing. As such, instead of saying that such lyrics interrupt the sermons, these improvised lyrics rather season sermons (Adubofour, 1987: 87).

The use of these improvised lyrics in seasoning sermons can be traced to the Akan folktales, *Anansesem*. The Akan *Anansesem* are narrated with songs (*mmoguo*) interspersed as commentary on the tale, at times to ridicule the falsehood described in the tale or to praise its hero, usually the spider, *Ananse* (Williamson 1955). The *mmoguo*, serves as a feedback, communicating to the tale teller, how exciting his tale is or how boring and absurd it is. The written lyrics, can be traced to the '*Asafo* songs of the traditional *Asafo* Companies and also the

*Mmobobe* (war songs), and *Asrayere* songs which are sung in praise of tribal heroes and valiant, the *Akatakylie* (Williamson, 1955: 103).

Both the *mmobobe* and *asrayere* songs represent a special female tradition and denote the ceremonies connected with times of war. In the days of old, *mmobobe* and *asrayere* were performed by women on behalf of the men who were at the war front (Williamson, 1955: 103). These *Ebibinnwom* also have a very close relationship with the Mfantasi *Adenkum* music.

This is a clear indication that the Akan, by becoming Christians, have not ceased to be Africans. The Akan will therefore, adapt the expression of their new life to the genius of their race and to the institutions which their past existence has produced, in so far as they are not incompatible with the Christian way of living (Westermann, 1937: 103, Adubofour, 1987, 177). It is essential then, that the Akan of Kumasi Metropolis find good ways and means of expressing themselves as Akans in their worship in the churches. This is best done through the "institutions which their past existence has produced, in other words their culture and worldview.

By using the word *Donkunyi*, the Brave General, the Akan Christians are expressing Yahweh's praise name Sabaoth. This demonstrates that the Akan Christians' faith in the saving power of God is very firm. One can then see faith expressed in God, who transforms the experience of 'hell' as the Christian had known into 'heaven'. This, then becomes a clear demonstration of the experience of the transformation of their primal innate faith in God (Oduyoye: 1986: 45).

The popularity of the *Ebibinnwom* in churches in the Kumasi Metropolis is a clear manifestation of the concept of the animation of worthwhile Akan cultural elements for the use of Christian Churches. Music forms a major component of Akan religious life and worship. Here, the Mfantse Akan, and now the *Asantefofo* of Kumasi have tapped on the rich Akan musical heritage for the benefit of the whole Akan Christian community in general and the Kumasi Metropolitan area in particular. It is clear from these *Ebibinnwom* that Akan music has a unique place in the worship life of the Church in the Kumasi Area. *Ebibinnwom*, as a cultural element, has stood the test of time as well as change. *Ebibinnwom* have nourished and will continue to nourish the faith of the Akan Christians of the Kumasi area. The *Ebibinnwom* lyric has persisted throughout the years, because the traditional worldview and cosmology of the *Akanfofo* of Kumasi still persists in Akan Christian thought. The existential battles of Akan life have not yet ended. In other words, the continuous use of the *Ebibinnwom* lyric points to its relevance for Akan Christian thought (Adubofour, 1987:178).

Other forms of Akan traditional music or orchestras, which are similar to the *mmobobe* and *asrayere* are *nnwomkorɔ*, *adowa*, *kete*, *akapoma*, and *dansuomu*. Up till now none of the orthodox churches, apart from the Roman Catholic Church, uses any of these forms of music in its worship.

The popularity of the *Ebibinnwom* in churches in the Kumasi Metropolis clearly shows that it is possible and very necessary that the Akan Christians of the Kumasi Metropolis take cognisance of their cultural heritage. They then have to explore ways and means whereby their rich cultural musical heritage, which involves drumming and dancing, could be incorporated into their worship. From what is happening within the Methodist Church, Ghana, Evangelical Presbyterian, Global Evangelical and The African Faith Tabernacle Churches, it is possible to incorporate more Akan musical concepts into the worship of Christian churches without, in any way, undermining the Christian faith.

## CONCLUSION

The study has revealed that the Akan have a very rich culture. Streaming out of that, it has clearly come out that some cultural elements, out of that culture, could be incorporated into

Christian eulogy of God. This also shows clearly, that a person does not need to behave and talk like a foreigner before effectively worshipping God but rather, God can be worshipped in different cultural modes such as the appellations used by the Akan of Kumasi in their traditional festivities.

Today, a lot of the Christian groups in Kumasi offer different forms of appellations to God in their liturgy and these are usually culled from the traditional ones. Fortunately these attributes, appellations, idiomatic expressions about the divine reality, as well as natural elements associated with God are being used effectively in the worship services of many churches in the Kumasi Metropolis. Sermons of all types are spiced up with Akan proverbs in order to draw home the points being raised by the preachers. This has helped to enrich Christian worship of God in churches within the Kumasi Metropolis, while helping the ordinary Christian to appreciate his God.

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## Beyond being the Largest Economy in Africa: An Ethical Enquiry into the Major Causes and Effects of Poverty in Nigeria

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### ABSTRACT

The reasons for poverty could be very numerous in the like manner of the effects. Some people believe that poverty results from a lack of adequate resources on a global level; resource such as land, food, and building materials—that are necessary for the well-being or survival of the world's people. Others see poverty as an effect of the uneven distribution of resources around the world on an international or even regional scale. It is further believed that overpopulation is another cause of poverty: This is a situation of having large numbers of people with too few resources and too little space. Excessively high population densities put stress on available resources. Only a certain number of people can be supported on a given area of land, and that number depends on how much food and other resources the land can provide. In countries where people live primarily by means of simple farming, gardening, herding, hunting, and gathering, even large areas of land can support only small numbers of people because these labor-intensive subsistence activities produce only small amounts of food. In many developing countries, the problems of poverty are massive and pervasive. Some nations have become fairly wealthy, however, lack essential raw materials and the knowledge and skills gained through formal education and training. They also often lack the infrastructure provided by, for example, transportation systems and power-generating facilities. Because these things are necessary for the development of industry, developing countries generally must rely on trade with developed countries for manufactured goods, but they cannot afford much. Nigeria was recently adjudged to be the largest economy in Africa, while the stark reality on ground does not seem to agree with this. Because of this assertion and counter assertion, this paper sets out to social ethically analyze the causes and effects of poverty in Nigeria while maintaining and proffering that those responsible for lifting people out of poverty should not be carried away by principles and theories while much leaves to be desired in imparting the lives of the common Nigeria.

**Key Words:** Poverty, Causes, Effects, Nigeria, Economy

### INTRODUCTION

One of the most threatening and destructive phenomena in Nigeria and the world at large is poverty. While all efforts to curb these social vices are proving abortive its effects have continued to be felt by her victims. Eating good food in the required proportion has become a mirage for most Nigerians (eating good food and having good clothes to wear and living in good housing conditions guarantees good health and long life). Cases of mal-nutrition are piled up in hospitals because of lack of proper diets. No one wants to be identified with it, and throughout the world, people wish one another long life and prosperity and never poverty.

Poverty destroys individuals and the social fabrics of the society. In order words, poverty deals with an individual physically, emotionally and psychologically as well as the social institutions. Poverty makes her victims vulnerable to sickness and diseases and above all, death (Oyedepo 2).

In the ambience of the declaration of Nigeria as the largest economy in Africa and her richness in natural resources, poverty is still prevalent among her citizens, with about 100million people living on less than \$1 a day. According to Lamido S., (Channels Television 27-1-2012), "90% of Nigerians are living below \$1 per day". Despite strong economic data and growth, Nigerians living in absolute poverty (those who cannot afford essentials of life such as food, shelter and clothing) are said to have risen to 60.9. According to the National Bureau of Statistic (Nigerian Tribune, 01-05-2013), Nigeria's economy projected to continue growing while poverty is likely to grow worse as the gap between the rich and the poor will continue to widen. Accordingly, at the end of 2012, Sokoto State remained the poorest state in the country with 81.2 percent poverty rate. Others in sequence include: Kastina, 74.5 percent, Adamawa, 74.2, Gombe 74.2, Jigawa 73, Pleatuea, 74.1, Ebonyi 73.6, Bauchi, 73 percent, Kebbi 72, and Zamfara, 70.8 percent. The state with lowest poverty rate was Niger 33.8percent, Osun, 37.9 and Ondo 45.7. Others with less than 50 percent poverty rate were Beyelsa State, 47 percent and Lagos state, 48.6. The average poverty rate of the states in the North-West geographical zone remained the highest at 71.4 percent, followed by North-East 69.1percent and North-Central, 60.7percent. The record showed that poverty was least prevalent in the South-West and South-South with an average of 49.8%, followed by 55.5 percent in South-East (Punch Mobile, Monday 12<sup>th</sup> August, 2013).

### **Definition of Major Term**

**Poverty:** According to New Webster Dictionary of English language the word poverty comes in two dominants dimensions: unproductiveness/deficiency or inadequate supply (that is lack in the face of need). Poverty delineates the state of one who lacks the socially expected and acceptable amount of money or material possession. The Dictionary informs that poverty may cover the range from extreme wants of necessities to the absence of material comforts.

The English word "poverty" came from the Latin word pauper which means "poor". Basically poverty is a violation of human dignity and denial of choices and opportunities. It also hampers ones potentials. Poverty means lack of capacity to participate actively and effectively in the society. It means insufficient possession to feed and cloth a family, having no school or clinic to go to, not having land to farm on or a job to earn a living. It means insecurity, lack of access to credit, powerless and exclusion of individuals, household and communities. It means susceptibility to violence and it often implies living in marginal or fragile environments without access to clean water or sanitation (Encyclopedia Britannica 35)

In United Nations (UN) view, poverty is pronounced deprivation in wellbeing and comprises many dimensions. It includes low income and the inability to acquire the basic goods and services necessary for survival with dignity. Poverty also encompasses low level of health and education, poor access to clean water and sanitation inadequate physical security, lack of voice, insufficient capacity and the opportunity to better ones' life (Poverty Wikipedia).

### **Major Causes of Poverty in Nigeria**

**Economic Cause:** One of the major causes of poverty in Nigeria can be said to be economic. There is high economic disparity existing between the poor and the rich irrespective of the fact that they are both subjected to the inflationary system. For example, some workers are not well rated and their pay does not come regularly and sometimes at all. Furthermore, the turn

of attention to oil boom and the total neglect of the agricultural sector which led to the rural-urban migration and wasteful spending of money in public finance management are economic scenarios causing poverty in Nigeria. Added to the above is unemployment which is caused by myriad of factors including macro-economic instability and the collapse of the educational system, which has increased the number of unemployed and unemployable persons. We also have an unfortunate situation where economic reforms have been simplistically reduced to mass retrenchments (Agbaje, in Muo 26). The petroleum pricing regime has created its own poverty impact in Nigeria as the prices of petroleum products have been adjusted upward many times.

Similarly, harsh business environment has contributed to the causes of poverty as industries and businesses have not fared well in recent years. They are therefore not able to generate employment and create wealth. The problem plaguing the industries includes poor infrastructure, high cost of operations, policy instability, multiplicity of regulations and regulators and multiple taxes. Due to these economic situations, the poor are not only made to bear the brunt of its effects, but to also wallow in their pains. Base on this, more people are falling out of the survival line thereby swelling the numbers of the indigents. By this, unemployment continues to rise, food and housing are getting out of the reach of ordinary people.

**Social and Religious Causes:** (Oboh 65) said, there are differences in the treatment of the poor and the rich socially, more respect is given to the affluent than the poor, they have no voice among their equals and their ideas are hardly regarded as meaningful, they are treated with disdain and contempt, they are treated as outcast and unwanted members of the society, they are seen and people whose miserly and distress are self inflicted. In the feeling of the rich and the rulers, the plight of the down trodden their struggle to survive seem to have no place at all. though, they see themselves as servant leaders, but as lords living comfortably large at the expense of those who were to serve, no matter how long they stay in position, they are never satisfied or fulfilled and even when there is a cause for them to leave usually against their will, they recycle themselves back to power by bringing in their children, relations and accomplice through dubious process. Ironically, the poor play along the trend of the misplaced value system of the society that has brought poverty and hardship on them, thus by so doing the statuesque is maintained. As a result they act according to the wrong societal dictate in giving undue respect to the rich simply because of their wealth, which they have robbed from the common national possessions.

From socio-religious perspective, the poverty mentality that is been instilled in some people has gone a long way to affect them. This is especially among Christians, who think poverty is a sign or righteousness. They believe those who are rich and living in abundance are unrighteousness and are living sin and will not make heaven so they decide to stay poor in order to inherit the kingdom of heaven where God promised riches in abundance. This notion and mentality will not only make one get poorer, it will make one live in perpetual unnecessary suffering. In Oboh's view, it is a system whereby some parents are raised in a poverty condition and in the same context breed their own children. The people are culturally conditioned to accept poverty as a norm of life irrespective of the suffering they go through (67).



The emergence of Pentecostalism in Nigeria around the middle of the second half of the 20<sup>th</sup> Century with prophets preaching material prosperity is another factor to be considered. They assert that the real evidence of the blessing of God depends on the amount of wealth and material possession. Thus there is this belief that most people in Nigeria go to their places of worship because of their poor state. However such blessings are consequent on person act of faithfulness and righteousness. Consequently, the poor are people who do not believe and are sinful. Hence, their suffering is an act of punishment for their unbelief and wickedness. This notion is to some large extent not encouraging. Poverty is a condition of life that some people do not have the easy means to overcome even when they desire to. But to make them believe they are in such situation because of their sins in spite of their belief in God is disheartening (Oboh 68).

The various religious, ethnic and political conflicts in Nigeria especially the recent menace of Boko Haram sect has contributed immensely to the poverty situation in the country. According to Nigeria Tribune newspaper of 14<sup>th</sup> February 2012, the North East and North West where the Boko Haram sect originated, are the poorest regions in Nigeria. These conflicts and bombing have degenerated into large scale destruction of properties and business. Poverty is also traced to the inferior mindset of the deprived group because the poor are lazy, lack education, lack personal initiative and have too many children (Abiola 17).

**Government Policies and Politics:** According to Muo (24-25) one of the key factors in the Nigerian poverty equation is that the paradoxical concepts of government policy induce poverty. The Nigeria government at various tiers and at various times had undertaken policies and actions that tended to impoverish her citizens. These actions may have been taken in pursuit of good intentions, but the way they were executed, created more problems.

The government at a time banned the importation of cars older than 5 years, second hand fridge's and air conditioners. It also introduced 100% inspection policy and moved from pre-shipment to destination inspection, banned importation of poultry through land borders and the banned on some other goods in 2014. According to IMF country report of August 2005, these policies are punitive trade regimes. These actions threw many people into poverty, because they depend on some of these fairly used imported materials and goods for trade, for example, the fish and pure water seller who can not afford a new refrigerator will go for the second hand one which his/her money can afford.

Furthermore, money has become the controlled power in Nigerian politics. Plenty of money is used for electoral campaigns, bribe electoral officers, hire thugs and buy people's votes. The people's votes are totally rendered ineffective due to corrupt electoral officers who have sold their authority in order to distort election results. Thus, both the power to context and to effect a change in an unfavorable political system is absolutely taken away from the poor. The struggle for power has led so many conflicts resulting in civil and intertribal wars. A good number of people have been killed, orphaned, widowed and physically deformed in the process, valuable properties have also been destroyed. To this end, the crave for power and the political system plaguing Nigeria plunges the poor into a more difficult and helpless situation (Oboh 66).

## **Effects of Poverty in Nigeria**

**Hunger:** The increase in the cost of living render poor people less able to afford food items for themselves. The greater portion of the poor people's budgets is spent on food as compared to their rich counterpart. As a result of this poor households and those near the poverty threshold are vulnerable to increase in food prices, and increase in hunger rate. It is believed that about 11 million children living in poverty die before their fifth birthday due to hunger. Nearly half of all Nigerian children are suffering from malnutrition and are under nourished due to the poverty state of their parents. Women die in pregnancy or during childbirth due to hunger and lack of adequate nutrients that are necessary for mother and child healthiness. Hunger and starvation are seen in almost every home in Nigeria as a result of poverty.

**Health (Disease and Death):** Those living in poverty suffer beyond proportion from diseases, hunger and starvation. Worldwide, about 270 million people most of whom are women and children have died consequent to poverty related disease since 1990 and Nigeria is not exceptional.

According to world health organization's report, hunger and malnutrition is the single gravest scourge to the world's public health. Asthma and rickets are common health condition and problems children acquire when born into poverty. In Nigeria today, most people living in poverty suffer health problems just because they lack the necessary resources to acquire proper medical care and take needed or required vitamins for body maintenance poverty is comparatively the biggest contribution to many health problems and child mortality in Nigeria today.

**Education (Illiteracy):** Education is the best and most vital legacy one could acquire but on the contrary this is not the case for people living in poverty. There is a high risk of educational underachievement for people living in poverty. There are numerous reasons that make students end up as school drop outs. For families with little or low resources, the financial support for quality education is not available. Poverty often affects drastically her victim's success in school. People living in poverty are far less successful educationally than people who are above the poverty line. Because they have less wealth, this ultimately results in many being absent from the schools during the academic year. And even when they are there, because poor people are most likely to suffer fatigue and all forms of emotional and mental imbalance they are potentially restricted and could lose focus and concentration. Poor people see going to school as suffering as most student from poor background end up with one disease or the other as a result of hunger and starvation at school that they are subjected to.

**Violence and Crime:** Robbery incidences have increased in recent years. It is not uncommon to find unemployed graduates and school dropouts among these criminals, who have become cruel and merciless in their operations. Things are really worsening in Nigeria on daily basis, ranging from kidnap, rape picking pocket, theft and all sorts act due to the prevailing poverty situation in the country. It is the source of political instability in Nigeria and social disorder. This calls to mind the regular conflict and violence that prevail in the Niger delta communities. This is a clear example of poverty experience caused by environmental degradation. Conflict erupts when people have no job food and shelter.

There are so many other effects of poverty. In Nigeria poverty constitutes an obstacle to the rapid economic growth and development of the nation as it usually affects negatively both performance and productivity. Poverty brings about grievances and feelings of resentment against the ruling authorities and elite. It breaks up families as women and children are usually the worst of her victims (E. Aluko (165). He further says that poverty leads to social and environmental degradation, that poor people can hardly be expected to care about their environment as they are persistently faced with the constant battle for survival. People in Nigeria are obviously suffering from poverty inflicted on them mainly by bad government and personal contribution and its effects is seen in everyday life in Nigeria.

### **Evaluation of Poverty Alleviation Strategies in Nigeria**

At independence in 1960 and within that period, poverty eradication efforts were geared towards education which was seen as a nucleus to economic technological and intellectual development of the nation. The popular slogan at that time was "show the light and the people will find the way" quoted by Nigeria's first president, the late Nnamdi Azikiwe.

So, eradication programmes were implemented alongside agricultural extension service which encouraged increased food production. The oil boom in the 1970s totally eroded this outlook as rising global oil prices boosted exports from N44 billion in 1975 to N 26 billion in 1980, while the GNP per capital rise from \$360 to make them \$100. When the oil price fell, nation's export receipts also translated unto negative growth and a fall in GNP per capital to \$370 in 1980s. According to the Federal Office of Statics in 1960, about 15 percent of the population was poor. However it had greatly grown in the subsequent years and by 1980 it got to 28 percent. The Federal Office of Statistics estimated that by 1980 the extent or level of poverty in Nigeria was 46% although dropped to 43% by 1992. However, by 1996, the incidence of poverty among Nigerians increased out of a population of 110 million. The UN human poverty index in 1999 which credited Nigeria with 41.65 percent aptly depicts the phenomenon as the figure placed the nation among the 25<sup>th</sup> poorest nation in the world.

Two third of the country's 160 million people are estimated to be poor today in spite of the fact that since independence Nigeria is said to have realized trillions of naira in oil and gas. Successive government regimes have variously tried looking at the issues of poverty through forming and executing poverty related programs but whether these programs have achieved the desired result is another problem for study.

The Operation Feed the Nation (OFN) as a program was initiated in 1979 by General Olusegun Obasanjo. Its main focus was to facilitate increase in food production and ensure the availability of food at a very cheap rate. And by so doing, nutritional level will be enhanced among Nigerians and thus national growth and development. OFN became history as Shehu Shagari came in with his own ideas and program from 1979-1983. Though he shared almost the same ideas as regard poverty reduction with his predecessor, he came with the Green Revolution. This programme laid emphasis on food production but could not continue as shift in office also means shift of approach and ideas in Nigeria. Thus when Shagari left office in 1983, it also mark the end of Green Revolution. At each subsequent military administration came different idea or even none. Poverty alleviation programmes became more regime oriented. Directorate of Food, Road and Rural Infrastructure (DFRRI) was another programme.

The main thrust of this programme was to open up rural areas through construction of feeder roads and provision of basic amenities that would turn them into production centers for the programmes on the nation's war against poverty. By virtue of the fact that rural populace in Nigeria are considerably poorer than their counterparts in urban areas, this programmes was not just to open the rural areas but the remotest or hinter lands which ordinarily would not have been accessible. Another programme that tried tackling the poverty scourge via agricultural sector was the Nigeria Agricultural Land Development Authority (NALDA). The programme hoped to meet this target by helping or assisting farmers with inputs and also by developing land for them to planting point at a subsidized rate. All these programmes collapsed at one point or the other. Nonetheless at least one of them enunciated by the Babangida regime. The Nation Directorate of Employment (NDE) is still powerful till date. NDE was designed and implemented to combat mass unemployment and articulate policies aimed at developing programs with labour intensive potentials.

The regime of late Gen. Sani Abacha 1993-1998 was known as the midwife of the Family Economic Advancement Programme (EFAP). This project assisted in poultry production, garri making, soap making and animal husbandry as a rider to all poverty alleviation programs enunciated over the years in Nigeria. Wives of head of state also joined in the fray with novel programs that not only elevated the state of the first ladies but also focused on issues of poverty using state funds. Most noticeable were the Better Life Rural Women heralded by late Mrs. Mariam Babangida and Mrs. Mariam Abacha's Family Support Programme.

There have been series of policies by the federal government of Nigeria since May 29, 1999 when democracy was ushered in. These policies aimed at bettering the plight of the poor, the blue print for the establishment of the National Poverty Eradication Programmes (NAPEP) as a result "Keke Nappes" was introduced. This serves as a central coordinating point for all efforts against poverty starting from the federal, state and to local government levels. Through this programme, schemes are carried out or executed with the sole aim of eradicating poverty completely such schemes include; Youth Empowerment Scheme (YES) rural infrastructures development scheme (RIDS) social welfare service scheme (SOWESS) and National Envelopment and conservation scheme (NDCS). There are other ones from non-government organizations (NGOs), individual and corporate bodies including the religious institution with different purpose oriented foundations. The salient in the government poverty alleviation programmes is the current removal of "Fuel Subsidy" which has brought about difficulty in the standard of living. But in the words of President Goodluck Ebele Jonathan and his economic advisers, this removal of subsidy is aimed at alleviation of poverty through the creation of more job opportunities, construction of accessible roads ultramodern health facilities and improvement in agricultural sector, availability of good water and improvement in educational standard etc.

Having considered the various poverty alleviation programmes put in place by the government. (Oshitel in Abiola 21) summed it up by saying that the strategies of alleviating or eradicating poverty with their good intention have all failed because the programme were politicizes to attend to those who were related and close to the ruling political party or relative of members of the directorate or commissions. These programmes became ineffective when

the number of directorates and scheme commissioned for the same purpose became so many to the extent that poverty alleviation programmes became job creation approaches and government offices for financial allocation without portfolio (which require poverty to multiply so as to sustain the existence of poverty alleviation programmes and continue as means of earning a living) and unable to make any tangible difference to the number of the poor and unemployed graduates in the country.

### CONCLUSION

This paper has seen us through the facts that though Nigeria is currently purported to be the largest economy in Africa, it remains a fact that two third of Nigerians live in abject poverty caused by variety of social factors. The attendant consequences and effects of poverty are immediately felt as typified in the living condition of so many Nigerians. Despite the fact that successive governments over times have made effort to alleviate poverty in Nigeria, policies have remained at the theoretical level or stagnated due to inconsistencies and sustainability plans. As a result of this Nigeria's poverty rate has moved to a level involving about 112,518,509 Nigerians currently. The country's gross domestic growth (GDP) had grown, but it had little impact on the poverty situation of the country. Giving the breakdown and applying the United Nations definition of a poor person in dollar terms, would show that 51.6% of Nigerians were living below U.S \$ 1 per day in 2004, but this increased to about 61.2% in 2010. Although the world bank standard now is U.S \$1.25 per day. Generally Nigeria is identified as sitting in poverty and so earned the 154<sup>th</sup> of 172 countries in the world marginal index. This means that, of countries where citizens are merely subsistence and which have the biggest task of developing the people and their resources; Nigeria is even so low on the scale that is slowly riding above or ahead of only 18 countries. This is very alarming and contradictory of the recent evaluation of Nigeria as the largest economy in Africa.

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# Assessing the Preferences of Animal Protein among Ghanaians: A Case Study in Jaman North and South District in Brong-Ahafo Region of Ghana

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## ABSTRACT

This research was aimed at assessing the preferences of animal protein among the people of Jaman North and South District in the Brong Ahafo Region of Ghana. The specific objectives were to examine the preferences of animal protein among the people of Jaman, factors that influence the choice of animal protein they make, knowledge about animal protein and the health implications associated with it. A sample of one hundred and fifty (150) respondents comprising teachers, mothers, nurses, farmers and the aged were selected from the selected towns and villages used for the study. The methodology involved field work, questionnaire, interview and survey. The results revealed that, the consumption of meat is high while consumption of fish is low in the districts. The people are also ignorant about the health implication associated with high intake of meat. Diet related diseases are common in the district. The result again revealed that, high consumption of meat does not only affect the health of the people but the environment as well. The study recommended that awareness creation should be made through education by home economic teachers, health professionals and nutritionist in the district. The preference of animal protein by the settlers of Jaman District has served as a basis for possible further research on the subject matter.

**Keywords:** Preferences, Animal, Protein, Jaman District

## INTRODUCTION

Food like oxygen is a necessity for life (Gamen & Sherrington 1981). Food ranks third after air and water as a necessity for human survival. Available historical information indicates that man has often preferred certain plant and animal food product as food to other substances (Lewenbeg, 1994). These preferences of one type of food to another usually lead people to make choices of food. The practice of food preferences, food choices and selection has major influence on the nourishment and health of the body (Bennion 1995). Food is vital for life and humans as biological being require food to sustain life (Bennion 1995). This means food is supreme. Food is defined as any substance solid or liquid which when taken by the body provides it with the necessary materials to enable it to grow, to replace worn-out tissue and to function normally (Tull 1996).

The necessary materials provided by food are known as nutrient. These nutrients are protein, carbohydrate, vitamins, water, mineral elements and fats and oils. Each of these nutrients plays a vital role in the body. The health of an individual will suffer if any of these nutrients is in short supply. Food has been categorised according to the main job it does in the body. The first groups of foods are the body building foods as protein food. Examples are fish, meat and meat product and pulses. (Adow et al 1997).

The second groups of foods are energy giving food which is made up of starchy roots, cereals and fats and oils. The groups of foods are protective foods which provide the body with

mineral elements and vitamins. Examples are fruits and vegetables. They are used by the body in smaller quantities (Adow et al 1997).

Among the food nutrients and the groups of food are very important. Protein is the major nutrients found in food because of the nitrogenous substance it contains. It is used by the body for growth, repair and replacing hair, nails and skin and no other nutrient can be used as a substitute (Adow et al 1997). Bennion (1995) opined that protein comes from a Greek word proteos meaning of prime importance or to take the first place.

Protein comes in two types, vegetable and animal protein. Animal protein is the most important because it contains all the essential amino acids which are the building blocks of protein. For this reason one must eat animal proteins foods to get the essential amino acids for the protein to perform its function in the body. On the other hand, vegetable protein contains amino acids that can be produced in the body and these amino acids are termed as non-essential amino acids (Adigbo 2011).

Man eats to live and not live to eat (Clerk & Herbert 1996). There is also a saying that you are what you eat (Casereni et al, 2004). For this reason, preferences and selection of food that one eats should be of critical concern to ensure good health and normal functioning of the body. Diet influences the health and well being of an individual. No practice can influence the health of an individual as much as relating to nourishment (Shill, 1985).

Protein is a nutrient that performs a very important function in the body. Notwithstanding the important role protein plays in the body, there can be some health hazards associated with the high intake of animal protein especially meat. If people must eat animal protein, then they must be educated to choose the right kind of animal foods and to know the kind they should consumed regularly for healthy living as diet related disease such as obesity, hypertension, cancer, diabetes and heart diseases which are preventable are increasingly killing people in communities, countries and the world as a whole.

There is no such thing as unhealthy food but there are unfortunately unhealthy eating habit and monotony in the choice of food which may lead to ill-health and premature deaths (Foskette et al, 2004). Unhealthy eating habits imply that, the individual eats certain food products in excess. An observation in Jaman district indicates that most settlers practice unhealthy eating habits.

Jaman district is located in Brong Ahafo Region of Ghana. It is a forest area so the main occupation is farming. The farmers in the course of the farming activities, usually hunt for games and use as a source of protein. Again, there are no major rivers that provide fish for the district. For this reason meat has been the major source of animal protein for a long time. Consumption of meat has become food customs within the families and communities in the Jaman districts.

According to Pamplona-Roger, (2007), one study reported an increase in the risk of a type of cancer known as Non- Hodgkin's lymphoma with a high intake of animal protein and red meat. The higher a person's intake of protein rich food such as meat, milk and egg, the more he is prone to heart disease and cancer. There are evidently no benefits to be gained by consuming a diet that derives more of its energy from protein. Pamplona-Rogers (2007) further pointed out that excess protein in the diet affects liver and kidney function.



According to Whitney et al, (2001) the term obesity is referred to excess body fat that accumulate when people take in more food energy than they spend. The health risks of obesity are so many that it has been declared a disease. In the United States obesity is second only to tobacco use as the most significant cause of preventable death.

Health risks that threaten adults as a result of obesity are diabetes, hypertension, high blood lipids, cardiovascular diseases, sleep apnoea (abnormal ceasing of breathing during sleep), osteoarthritis, abdominal hernias, some cancers, varicose vein gout and gall bladder disease. Again, respiratory problems including syndrome, a breathing blockage linked with sudden death, liver malfunction, complications in pregnancy and surgery, flat feet and high rate of accident. Whitney et al (2001). Table 1 presents the diet related diseases cases at St Mary's Hospital in Drobo in Jaman district of Brong Ahafo.

**Table 1: Reported Cases of Diet Related Diseases at St. Mary's Hospital, Drobo**

<b>Diseases</b>	<b>Year</b>	<b>Figure</b>
Hypertension	2007	3,334
	2008	2,685
Diabetes	2007	2,669
	2008	3,227

From Table 1 it is obvious that the diet related diseases in Jaman district is on the increased. In 2007 and 2008, 3,334 and 2,685 people reported hypertension cases at the hospital respectively. Even though the number of cases dropped from 3,334 in 2007 to 2,685 in 2008, the reduction is not statistically significant. Again, in 2007 and 2008 2,669 and 3227 people respectively reported diabetes cases at the St Mary's Hospital in Jaman district. There was an increase in diabetes cases from 2669 in 2007 to 3227 in 2008 and this poses a serious threat to people in the community.

Food customs of one's ancestors and grandparents have influenced on the type of food families serve (Adigbo 2011). For this reason most people of Jaman district prefer meat to fish. Nutritionists are concerned about the effect of high intake of meat and its fats on the body since diet related diseases are increasing in alarming rate. The study therefore aimed at assessing the preferences of animal protein among the settlers of Jaman districts of Brong Ahafo.

The study sought to find out the references of animal protein among the people of the Jaman district. Specifically the study aimed at finding out:

1. The animal food preference of families in Jaman District.
2. Factors that influence people choice of animal protein.
3. People knowledge in animal protein.
4. The health implications of animal food.

## **Research Questions**

1. What is the animal food preference of the families in Jaman North and south district?
2. What are the factors that influence the choice of animal protein in the people of Jaman district?
3. Do the people of Jaman district have sufficient knowledge of animal protein?
4. What health related problems are associated with animal foods?

## **METHODOLOGY**

The study was based on set comprising of five categories of people in the Jaman District. Population in this context covers mothers, teachers, the aged, nurses and farmers. The target group were mostly illiterates with few educated people. People in the Jaman District are mostly peasant farmers who plant crops like tomatoes, okro, yam and cassava for consumption. Some of the farmers also hunt for games which they either sell or eat in their houses.

Mothers were included in the study because it is the mothers who are charged with the responsibility of feeding the family and for that matter they plan menu and decide on which protein to use as the main meal for the dishes in the menu. Additionally nurses were chosen because they have knowledge about health implications of high consumption of meat. Teachers were also chosen as part of population because they help impart knowledge to people so they can meaningfully contribute to the study. The sample was made up of thirty (30) teacher, thirty (30) mother, thirty (30) farmers, thirty (30) nurses and thirty (30) aged people making one hundred and fifty (150) people.

Stratified and random sampling procedures were used for the study. Under stratified sampling the study was divided in three strata in each district so Jaman North and South District were divided into three groups each. All the names under each of the three groups were written, folded and place in separated boxes. In all there were six boxes representing six groups of towns and villages, three for each district. The papers were randomly picked from each box. The names of the towns on the papers which were picked from the boxes were used to represent the sample. This technique was used because the area was too large and the characteristics of the population were almost the same.

Questionnaire and interview were the main instruments used to collect data for the study. The questionnaires were used because with the use of the questionnaire many people could be covered while the respondent could also answer freely without any personal contact.

The interview was mainly for the illiterate respondents. It was used for the farmers, the aged and mothers who level of literacy was such that they could not respond to questionnaire items. The interview was then used to translate the questions into the local dialect (twi).

## **RESULTS AND DISCUSSION**

### ***Preference of Animal Protein***

Table 2 shows the preference of animal protein of respondent. The respondents were asked to make a choice between meat and fish and out of one hundred and fifty (150) respondents, one

hundred and twenty six (126) chose meat representing 84% while the remaining twenty four (24) chose fish representing 16% of the respondents.

**Table 2: Preference of Animal Protein of the Respondents.**

<b>Responses</b>	<b>Frequency</b>	<b>Percentage</b>
Meat	126	84%
Fish	24	16%
<b>TOTAL</b>	<b>150</b>	<b>100%</b>

Table 2 results revealed clearly that, most of the respondents prefer meat to fish. This is because Jaman District is a forest zone and meat (game) is one of the available foods. Bennion (1995) opined that geography of an area and variations in climate influence two types of foods. Historically, this has had a profound influence on the availability of particular foods and in turn on the eating patterns of people in the area. Respondents were asked to indicate how many times they consume meat within a certain time period. Fourteen (14) representing 9.3% reported that they consume meat 6 - 7 times in a week, another one-third (33%) also reported that they consume meat 5 - 6 times in a week, seventy (70) representing 46.7% also indicated that they take meat 7- 8 times in a week and sixteen (16) respondents representing 10.6% consume meat 1- 4 times a week.

**Table 3: Frequency of Meat Consumption in the Diet**

<b>Responses</b>	<b>Frequency</b>	<b>Percentage</b>
6-7 times	14	9.3%
5-6 times	50	33.3%
7-8 times	70	46.7%
1-4 times	16	10.7%
None	-	-
<b>TOTAL</b>	<b>150</b>	<b>100%</b>

The result revealed that the consumption of meat is high in the diet of respondents. According to Pamplona-roger (2007), consuming meat even three times in a week is a threat to health. The author concluded that meat and cancer are best of friends. With regards to how many times fish is consumed within a period of one week, Sixty five (65) respondents representing 43.3% indicated that they consume fish 1 - 2 times a week. However, eighty five (85) representing 56.6% indicated that they do not consume fish at all in their diet.

**Table 4: Frequency of Fish Consumption in a Diet**

<b>Responses</b>	<b>Frequency</b>	<b>Percentage</b>
1-2 times	65	43.3%
5-6 times	-	-
6-7 times	-	-
7-8 times	-	-
None	85	56.7%
<b>TOTAL</b>	<b>150</b>	<b>100%</b>

The results from Table 4 reveal that, more than half of the respondents do not consume fish at all in their diet. This indicates that the consumption of fish is very low in the district and this is indeed serious as far as eating for healthy living is concerned. According to American Health Association, consuming fish regularly with low fat-diet help to prevent disease. Omega-3 found in fish is also good for prevention of heart diseases Mehas, (1994). This makes fish “a must eat food” and omega-3 in fish is “a must have nutrient” in a diet. Respondents were asked to indicate the groups of persons who consume meat more often in their meal and out of one hundred and fifty (150) respondents, seventy five (75) indicated the aged, sixty five (65) respondents indicated fathers whiles the remaining ten (10) indicated mothers.

**Table 5: Group of Persons who Consume Meat More Often in Diet**

<b>Responses</b>	<b>Frequency</b>	<b>Percentage</b>
The aged	75	50%
Fathers	65	43.3%
Mothers	10	6.7%
Adolescent	-	-
Children	-	-
<b>TOTAL</b>	<b>150</b>	<b>100%</b>

According to Adigbo (2011), as age increases activities reduce and therefore the need for calorie is also reduced. The results obtained indicated that the aged and fathers enjoy the meat used in meal preparation. This is attitude of the aged and fathers deprive children and adolescent the protein they need for development of their body. According to Whitney et al excessive intake of meat and its fat cannot be easily separated from heart diseases.

Adigbo (2011) further stated children should be given enough protein foods because of their rapid growth.

**Factors Influencing Food Choices**

**Table 6: Superstitions Affect Health**

<b>Responses</b>	<b>Frequency</b>	<b>Percentage</b>
Strongly agree	30	20%
Agree	30	20%
Neutral	-	-
Strongly disagree	48	32%
Disagree	42	28%
<b>TOTAL</b>	<b>150</b>	<b>100%</b>

With regards to factors that influence the food choices, respondents were asked to indicate the extent to which they agree with the statement that superstition associated with food have health effects. Table 6 presents the results of respondents. From Table 6, thirty (30) respondents strongly agreed with the statement representing 20%. Another thirty (30) respondents also agree with the statement representing 20%, while forty eight (48) respondents strongly disagreed with the statement representing 32%. The remaining forty two (42) representing 28% disagreed and no respondents remained neutral. The results obtained reveal that a total of 60% of the respondents were ignorant about how superstitions association with food can affect health. Superstition do not have any scientific prove but they are so strong that people adhere to it endangering their health.

Respondents' views were solicited on the statements that, food customs are passed on to the generation and sixty (60) strongly agree with the statement representing 40%, fifty (50) respondents also agree to the statement representing 33.33%, thirty (30) strongly disagree with the statement representing 20% and the other ten (10) respondents representing 6.7% also disagree with the statement.

**Table 7: Food Customs are passed on to the Society**

<b>Responses</b>	<b>Frequency</b>	<b>Percentage</b>
Strongly agree	60	40%
Agree	50	33.3%
Neutral	-	-
Strongly disagree	30	20
Disagree	10	6.7
<b>TOTAL</b>	<b>150</b>	<b>100</b>

The result obtained shows that, majority 73.3% of the respondents were in agreement with Peril (1977) who describes culture as everything passed on to the society except its biology.

For example 66% of the respondents agreed with the statement. The above tabulated result revealed that, a food custom which is a component of culture is passed on to new generation as explained in the literature review according to (Adow et al, 1997).

Respondents knowledge about the two major animal protein used in meal preparation was solicited and out the one hundred and fifty (150) respondent, sixty three (63) responded ‘Yes’ to the question representing 42%. Whiles the remaining eighty seven (87) representing 58% responded ‘No’ to the question totalling one hundred fifty (150) respondents which is 100%. The results shows that, majority (87%) of the respondent do not have knowledge about the two major animals food that is meat and fish used in meal preparation.

**Table 8: Knowledge of Two Major Animal Proteins**

<b>Responses</b>	<b>Frequency</b>	<b>Percentage</b>
YES	63	42%
NO	87	58%
<b>TOTAL</b>	<b>150</b>	<b>100%</b>

### ***The Methods of Obtaining Game***

Table 9 presents the responses obtained about the harmful effects of the methods of obtaining games, twenty (20) respondents strongly agreed with the statement representing 13.3%, forty (40) respondents also agree with the statement representing 26.6% and ten (10) respondent representing 6.6% remaining neutral. However, twenty (20) respondents disagreed with the statement representing 40% of the population.

The results revealed that a greater number of the respondents lack knowledge about the harmful effects of the methods of obtaining game. For example a total of 60% were ignorant about dangers of the methods of obtaining game. This lack of knowledge make consumers unaware about how dangerous the high consumption of game can be when inappropriate method like the use of a local concoction called “apotropom” and the injection of saccharine into the animals for it look fresh even if it has development maggot as explained in the literature review are used to obtained game.

**Table 9: The Methods of Obtaining Game**

<b>Responses</b>	<b>Frequency</b>	<b>Percentage</b>
Strongly agreed	20	13.3%
Agree	40	26.7%
Neutral	10	6.7%
Strongly disagree	20	13.3%
Disagree	60	40%
<b>TOTAL</b>	<b>150</b>	<b>100%</b>

### ***The fat in meat is an indication of quality***

With regards to the quality of meat, thirty (30) strongly agreed with the statement representing (20%), thirty (30) also agree with the statement representing (20%), sixty (60) representing (40%) also strongly disagreed with the statement and the remaining thirty (30) respondents representing (20%) disagreed with the statement.

**Table 10: The fat in Meat is an Indication of Quality**

<b>Responses</b>	<b>Frequency</b>	<b>Percentage</b>
Strongly agreed	30	20%
Agree	30	20%
Neutral	-	-
Strongly disagree	60	40%
Disagree	30	20%
<b>TOTAL</b>	<b>150</b>	<b>100%</b>

Majority of the respondents 60% did not grade the quality of meat according to the amount of fat it contains. During the administration of the questionnaire, some respondents described how meat with fat is juicy, tasty, and moist has a good flavour. According to Pamplona – Roger, (2007) meat and its, fat are extremely deficient in vitamins and anti oxidation such as vitamins A, B, C, E and K which neutralized the negative effects of cholesterol by keeping it from oxidation and being deposited in the arteries.

### ***Diet Related Diseases***

Respondents were asked to indicate if they are suffering from any diet related diseases and out of one hundred and fifty respondent thirty eight (38) indicated hypertension representing 26.3%, twenty (20) respondents indicated obesity representing 13.3%, ten (10) respondents representing 6.6% indicated heart diseases. Sixteen (16) respondents indicated diabetes representing 10.6%. Ten (10) respondent indicated cancer which is (6.6%). The remaining fifty four (54) respondents representing 36% did not answer the question at all.

**Table 11: Diet Related Diseases**

<b>Responses</b>	<b>Frequency</b>	<b>Percentage</b>
Hypertension	40	26.7%
Obesity	20	13.6%
Heart disease	10	6.6%
Diabetes	16	10.6%
Cancer	10	6.6%
No response	54	36%
<b>TOTAL</b>	<b>150</b>	<b>100%</b>

Although almost one-third (1/3) (36%) of the respondents did not answer the questions at all, the results revealed that, majority (64%) of respondents are suffering from one diet related disease or another. According to the health statistician at St. Mary's hospital Drobo, diet related disease like hypertension and diabetes are rated among the ten top diseases that are often reported at the hospital. According to Bennion 1995 USDA recommend a diet low in fat, saturated fat and cholesterol.

### **KEY FINDINGS**

The result of the study revealed that, majority of the respondents consume more meat than fish in their diet. It was noticed that majority of the people in the Jaman District do not eat fish at all especially the aged. According to the survey, most of the aged eat soup called "Nkwan Kumaa" meaning small soup. This soup is prepared with only meat especially game for the aged who do not consume fish. The reason for this special soup is that, they do not want to taste or smell fish in their soup as a result they preferred that their soup be prepared separately and in small saucepan.

Again the protein foods in meals are enjoyed by the adults, especially the fathers who are the bread winners, leaving the children, infants and adolescents who need it for their fast growth. This is so because wives want to gain favour from their husbands. Again, the result of the study shows that the choice of animal protein foods by people in the Jaman District were mainly influenced by factors such as culture and family customs, geographical location and food availability.

Furthermore, the people of Jaman district do not have adequate knowledge about animal protein and its rippling effect on health. High consumption of meat is seen as a prestige and healthy eating rather than a threat to health. Finally, the study revealed that, health related diseases associated with high meat consumption are increasing in the district. According to the health statistician at St. Mary's hospital, health related diseases such as stroke, hypertension and diabetes are among the ten top diseases that are normally reported at the hospital.

### **Major Implications Of The Findings Of The Study**

The preference of meat to fish by the people of Jaman District makes them consume meat in high proportion which is associated with a lot of health problems. The aged who take only meat put their health at risk since at their age; they do not need much protein. Apart from that, they do not need to take into their bodies more fatty foods because they are inactive and taking in more meat means, more fat will be deposited into their bodies which normally lead to obesity which is associated with hypertension, stroke and heart diseases.

Children have stunted growth and kwashiorkor as a result of parents, adults and fathers who enjoy the protein part of their meals denying children, infants and adolescent the nourishment they need for their fast development.

Knowledge about food we eat is very essential for good selection to meet the required nutrients needed by individuals in the family. Lack of knowledge about food makes people eat whatever they have appetite for putting their health in danger. This is because some foods like fat and meat need to be eaten in moderation because fat in meat contains calories in a



concentrated form which if not burnt causes health hazards. Bennion states that humans are biological beings and require food to sustain live. It is also important to have knowledge about the food to consume.

### CONCLUSION

The research study aimed at assessing the preferences of animal protein among Ghanaians (Jaman District). During the study it was identified that the people of Jaman districts have strong appetite for meat rather than fish. This is due to factors like geographical location of the districts, available food and culture. Eating for healthy living does not much concern them. They are not selective but eat what their appetite dictates for them. They do not have-in-depth knowledge about animal protein so the choice they make and the rate at which they consume that food pose health threat to the people in the districts. This confirms the opinion of Caserani et al (2004) who said you are what you eat.

The health of individual cannot be under estimated. It is the responsibility of the government of every nation to see to the health of its citizens. Some of the ways by which the government ensures the health of its people is through sanitation, food security and food safety. When the government has done its part, it is now the turn of the individual to also play their part by being selective and use certain foods such as meat and fat in moderation and consume food that has less health risk such as fish on regular basis for good health.

Finally, looking at the factors enumerated above, there is the need to formulate preventive measures. The sources of these preventive measures rest on good choice, that is, the use of meat in moderation and the introduction of fish into meals. This will help to drastically reduces diet related disease associated with meat like hardening of the heart, diabetes, stroke, cancer and hypertension if not totally eliminated.

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## Importance of Education in Mother Language for Iranian Bilingual Students

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### ABSTRACT

Language is the very essence of communication in class but submersion instruction makes students frustrated and increases underachievement in non-Persian Iranian students. Teachers report diversity of problems in students learning process and parents are struggling with their children's educational problems in elementary grades mostly. It seems that application of strong type of bilingual education like immersion is recommended in most provinces of Iran in order to provide students with a warm and pleasant learning situation by respecting their rights as learning in their mother language and helping them develop to the highest level of their potentials in the society by leaning national language. This lead students, their families and communities to feel they belong to this country. Consequently, the unity of the country will be strengthened.

**Key words:** mother language, underachievement, bilingual education

### INTRODUCTION

Native or first language is the language in which a person finds identity. This language plays an important role in his/her personal relationships and it is used for thinking and imagination. So first concepts of the language are formed in his/her mind with this language.

Education is a process of communication. Levels of communication constitutes a language that is the only effective approach in the education process. People cannot communicate without language properly. Without communication education is impossible. Moreover, transition of cultural heritage and civilization is impossible without education. Family education is the first stage of human education which is done with family communications. Children in their social environment, family, learn their own language whose richness of vocabulary and grammar depends on the sociological and cultural environment of the child. Going to school is an important event for children because its form and content is different from family and environment of the children. However, if the school language is different from the child's language, the consequences of this event will be broader and it will have negative impact on pupils' education lives.

In terms of psychology, learning with native language leads to a better understanding of the content and provides cognitive development for pupils. They are attracted to the social environment easily. Language as a key element of culture, puts the pupils in touch with their cultural past. Emotionally application of mother language in education causes persistent use of their linguistic symbols; therefore, it stops the emotional disconnection due to not using the native language. Starting school, Iranian non-Farsi students do not find their mother language in School curriculum because instruction and course content language is based on only Farsi language which has no bond with their mother language with which they achieved previous experiences. While informal communication within the school may be done with their native language, such a dissociation between school language and the students' native language causes difficulties for their motivation.

Conflict between family-based communications and school official communication circuit is both qualitative and quantitative. It is qualitative because non-Fars students face with a language which is not the result of their cultural and life traits. It is quantitative since its syntax, phonetic and morphology is different from their native language. As a result, a gap emerges between students' native and school language. (Sarban, 2010)

The purpose of this study is to explain problems of monolingual education, ignoring minority language students' mother tongue, learning problems of Iranian elementary minority students in order to address the ministry of education and science of Iran to improve the current educational policy and allow the minority language students of Iran to be literate first in their mother language then acquire the national language.

## **REVIEW OF THE RELATED LITERATURE**

### **Mother language**

Morosu (n. d) elaborates 'mother tongue' as the notion that linguistic skills of a child are developed by the mother and, therefore, the language spoken by the mother would be the primary language that the child would learn. The mother tongue, native or first language, is what a person has learned from birth or within a critical period, where the ability to acquire a language is biologically linked to age, and thus becomes the basis for social identity.

The mother tongue is part of a child's personal, social and cultural identity. We get this identification from speaking our mother tongue that creates successful social patterns of acting and speaking. Our different social backgrounds make us unique and interesting in society.

The mother tongue is an essential instrument for the development of intellectual, physical and moral aspects of education. Mother tongue forms habits, conducts, values, virtues, customs and beliefs. Needless to say, weakness in the mother tongue indicates a paralysis of all thought and power of expression. (Morosu, n. d)

### **Literacy**

Literacy means the ability to read, write, competence and knowledge in a specified area.

Baker (2011) states that literacy has many uses in bilingual and multicultural situations. It can be used for learning, citizenship, pleasure and employment. Cultures, subcultures and localities diverse in the application of literacy in religious groups, transmission of heritage values and beliefs. Approaches to literacy include: the skills approach (functional literacy), construction of meaning, sociocultural literacy and critical literacy. A transmission literacy style to classroom literacy is contrasted to a critical approach where matters of power, status, equality and justice are addressed through a language minority perspective.

### **Advantages of education in mother language**

Ludi (2006) puts that many conditions enable or facilitate success at school. They include the quality of the relationships between adults and children and the fit between the requirements of school and the child's potential. It is necessary to stress the importance of the language of instruction which plays an essential role since knowledge of that language is the key to communication processes in class and, therefore, to children's acquisition of knowledge. A great deal of research has proved that mother tongue-based education in the sense established above significantly increases the chances of success at school, if not gives the best results. The most important of these are as follows:

- Learning the written language is enormously more effective when pupils already know the language. They are able to apply psycholinguistic strategies to form hypotheses about the relationships between an image and a word they know; they can also start to

communicate in writing as soon as they understand the fundamental spelling rules of their language. However, in submersion situations students may be able to decipher words written in a language they know only imperfectly or not at all.

- If a student's knowledge acquisition occur in first language, it starts not only much earlier but also at the (much) later stage when he/she is proficient enough in second language. The construction of new concepts in the negotiation between teacher and learners makes participatory acquisition contexts that accelerate cognitive and linguistic developments simultaneously. On the contrary, submersion practically excludes such interaction because of the limited linguistic knowledge.
- The teaching/learning of second language is not subordinated to the acquisition of the written form and a new conceptual network; it can be more systematic, according to orality and children's abilities and needs.
- When children have developed written proficiency in first language and communicative proficiency in second language, they will easily transfer the writing techniques and cognitive faculties obtained in the familiar language to second language. This occurs through what Cummins (as cited in Ludi, 2006) has called the "theory of interdependence", or "common underlying proficiency" which makes such cognitive and linguistic transfers possible and explains why it is unnecessary to acquire these faculties a second time.
- Students' development is easier to evaluate if they are tested in first language whereas, in submersion, linguistic competencies and knowledge of subjects are so confusing that teachers are not able to tell whether children do not understand a concept or have difficulties expressing themselves.
- The affective aspect, especially children's self-confidence, self-assurance, self-respect and identity, is reinforced if first language is used as the language of instruction. It boosts children's motivation, initiative and creativity and enables them to develop their personality and intelligence. However, submersion makes them silent and passive; mechanical repetition leads to frustration and, in the end, failure at school. (Ludi, 2006)

Baker (2011) believes that when home language is used at school, children may feel themselves, their home, family and community to be accepted, hence maintaining or raising their self-esteem. Bilingual education can help foundation of a more secure identity at a local, regional and national level.

### **Disadvantages of switching to another language in education**

If children are forced to switch abruptly or transition too soon from learning in their mother tongue to schooling in a second language, their first language acquisition may be weakened or even lost. Even more importantly, their self-confidence as learners and their interest in what they are learning may decline, leading to lack of motivation, school failure and early school drop-out. (Morosu, n. d)

Additionally, Baker (2001) mentions that when a child's home language is replaced by the majority language, the child, the parents, relatives and not least the child's community may feel inadequate and disparaged by the school system.

Cummins (2001) puts that any convinced educator will agree that schools should founded on the experience and knowledge that children bring to the classroom, and instruction should also develop children's abilities and skill. Whether we do it intentionally or inadvertently, when we demolish children's language and destroy their relationship with parents and grandparents, we are conflicting the most basic of education. Moreover, children's cultural and linguistic

experience in the home is the foundation of their future learning and we must build on that foundation rather than undermine it.

### **National language and Bilingualism**

In countries with different minority language having a national language is a must to help all nation communicate to each other; moreover, learning the national language as a second language is necessary for children in that society. Moreover, there are many reasons for second language learning that will be explained as following:

First, social and individual reasons include external (out of the classroom) goals and internal (classroom) goals (Cook, as cited in Baker, 2001). Here national politics insist on the teaching of a national language for unity and social cohesion, while people may prefer instruction through the regional language. Basque separatists in Spain and Eastern Europeans rejecting Russian as the language of communism, are two examples of difference between social and individual wishes.

Second reason is social one. For language minority children, the purpose of second language instruction may be assimilationist and subtractive. Assimilationist ideology tends to work for the dominance of the second language. Learning the national language as a second language may be a step towards economic, social and political freedom. In Ireland, English-speaking children are taught Irish for this reason. A different societal reason for second language learning other than assimilationist or preservationist is to decrease conflict and obtain increased harmony between language groups through bilingualism.

The last one is individual reason. According to Baker (2001), "you need to understand other people, not just expect them to understand us".

### **Advantages of being bilingual**

Children or adult can benefit from being thought a second or third language as the following reasons:

1. Cultural awareness: To break down national ethnic and language stereotypes. It widens human understanding and tries to encourage sensitivity towards other cultures and beliefs. While cultural awareness may be conveyed in the first language, the inseparability of culture and language indicates that such awareness may best be achieved through simultaneous language learning.
2. Cognitive development: Given the memorization need to negotiate in communication, language learning has been regarded as a valuable academic activity in itself. (Baker.2011)

Another reason is to get a language for social, emotional and moral development, self-awareness, self-confidence and social and ethical values. Such affective purposes include the possibility of incipient bilingual being able to make more effective relationship with target language speakers. Mechell at al. (as cited in Baker, 2011) suggested that learning a second language increases the density of grey matter. Grey matter density was greater in bilinguals than monolinguals with early bilinguals having increased density comparing with late bilinguals.

Bilingualism has positive effects on children's linguistic and educational development. When children continue to develop their abilities in two or more languages throughout their primary school years, they obtain a deeper understanding of language and how to apply it effectively. They have more practice in processing language, especially when they develop literacy in both, and they are able to compare and contrast the ways in which their two languages organize

reality. More than 150 research studies conducted during the past 35 years strongly support what Goethe, the German philosopher, once said: The person who knows only one language does not truly know that language. The research puts that bilingual children may also develop more flexibility in their thinking because of processing information through two different languages. (Cummins, 2001)

Tse (as cited in Baker, 2011) states that literacy practices in two or more languages increases functions to a language, widens the choice of literature for enjoyment, gives more opportunities for understanding different perspectives and viewpoints, and leads to a deeper understanding of history, heritage, traditions and territory.

In some cases of bilingualism underachievement is seen with different reasons. According to Baker (2011), some people blame the child to be bilingual. But only when both languages are not sufficiently developed to cope in the curriculum can blame be attributed to bilingualism itself. Even in that case home, neighborhood or societal circumstances that made underdeveloped languages must be blamed.

The second reason may be lack of exposure to the majority language. In the US and UK, a typical explanation for the underachievement of some language minorities is insufficient exposure to English. Therefore, mainstreaming and transitional forms of education attempt to ensure a fast conversion to the majority language. It is necessary to mention that a fast conversion to the majority language could do more harm than good, because it denies the child skills in the home language, denies the cognitive and academic competence already available through that home language and often denies the identity and self-respect of the child.

Instead of building upon existing language proficiency and knowledge, the sink or swim approach tries to replace such language abilities. (Baker, 2011)

When bilingual children exhibit underachievement, then related reason is sometimes a mismatch between home and school. For instance, advice by some educational psychologists and speech therapists has been for language minority parents to grow their children in the majority and school language such a mismatch is seen as not just about language differences but also about dissimilarities in culture, values and beliefs. As an extreme, this tends to reflect a majority viewpoint that is assimilationist, imperialist and even oppressive. (Baker, 2011)

According to Baker (2011), the alternative view about bilingual children's underachievement is that the school system should be flexible enough to incorporate the home language and culture. A mismatch between home and school can be positively addressed by strong forms of bilingual education for language minorities. By dual language and heritage language programs, by the inclusion of parents in the operation of the school, by involving parents as partners and participants in their child's education, the mismatch can be a merger. An additive and not subtractive outcome is then probable.

Cummins (as cited in baker, 2011) states that another reason of bilingual child's underachievement is the type of school a child attends. The child will have desire to attain more if placed in programs that use the heritage language as a medium of instruction rather than in programs that searches to replace the home language as quickly as possible. A system that concealing the home language is likely to be responsible for individual and ethnic group underachievement where such problems exist.

## DISCUSSION

The education system in Iran is basically divided into five cycles namely, pre-school, primary, middle (or guidance), secondary and post-secondary. Three outstanding characteristics of the Iranian education system must be mentioned at this point. First, elementary education is mandatory under the Iranian constitution. Secondly, due to increasing number of applicants, admission to post-secondary institutions is through a nation-wide entrance examination and thus only the most talented students can enter universities. Finally, in general, education (in primary, secondary, and post-secondary levels) is free of charge though private schools and universities authorized by law are allowed to charge tuition fees. The language of education is only Persian or Farsi.

Moreover, according to the 2008 census, population of Iran includes more than 70,472,000 people. More than half of the population of Iran is active population and about 39.5% of population is under 14 years old. The main ethnics of Iran are named Turks, Persians, Kurds, Lurs, Baluch, Bakhtiari, Talysh, Turkmen, Qashqai, Arabs, Gilaki and Laks. However, considering the vastness and variety of the Iranians, smaller ethnic groups live in Iran, as well. According to the Constitution of the Islamic Republic of Iran, the country's official and script language is Persian. But given the fact that Iran is a very large country more than 75 languages and dialects spoken in the country. The major spoken languages of Iran are, Turkish, Persian, Kurdish, Turkmen, Gilaki, Mazandarani, Khalaji, Lori, Bakhtiari, Arabic, Balochi, Leckie, Tati, Armenian, Assyrian, Mandaeen, Georgian, Hebrew and Chaldean. According to the fifteenth principle of the Iranian constitution, textbooks in Iran must be taught in Persian language and script. However, the use of regional and ethnic languages in the press, media and teaching their literature in schools beside Persian is allowed.

Based on aforementioned data a large number Iranians are at school age. Generally it is told that Turks are the largest population of Iran after Persians but there is no exact number available because authority tries to conceal that. However, a great number of students are non-Persians but not only they are not allowed to be educated in their mother tongue but also they are robbed of learning their own language literature which national constitution allowed. Consequently, these minority language students have diverse problems especially in elementary school.

Hoseini (as cited in Sarban, 2010) investigated the causes of underachievement in Tabriz (East Azerbaijan) and concluded that one of the reasons of underachievement in children whose native language is not Persian is that they have communicated with others to meet their needs at home and outside for 6 years. After this long time, they face with unfamiliar Persian rather than their familiar mother language at school. In such situation the first phases of education content may not be transmitted well and comprehended. Consequently, the likelihood of achieving the objectives of training and education will be reduced and dropouts in education will be caused.

Osareh (2008) conducted an experiment in Turk and Arab regions of Iran. She compared language functions and structures of 2 languages of Turk and Arab with Persian in first 3 months of educational year. Findings of her research indicate that students in elementary grades in bilingual regions have problems with oral comprehension of Persian, hence they cannot be placed in education circle easily and cannot cope with the school instructions. These problems are severe in first two months, but they are decreased later. Teachers have to use students' local language to teach them to let them understand subjects. Due to incomplete comprehension of Persian, students cannot react suitably to questions or they are not able to

understand simple words and school curriculum well. According to Osareh (2008), students have pronunciation problems, they pronounce Persian words with local accents. Some of these pronunciation problems are because of phonetic differences between Persian and those languages. Students cannot use nouns correctly and no compound nouns are seen in their sentences. Arab students have problems in conjugating verbs and verbs are not used with proper subject and pronoun. However, Turk students do not bring adverbs correctly and have difficulties in adjectives.

Oral sentences of students are short and combined with limited vocabulary. Their sentences have not adverb and adjective. Moreover, adjective clauses are rarely found in their sentences. Facing with questions, they do not react properly so that they are shocked, crying, silent and present unrelated answers and repeat peers answers. Generally, they answer the questions and explain subjects with the least words and sentences. Their conversation is full of pauses without correct structure because their being bilingual is a type of combined, unbalanced, unstable and artificial and often occurs in school. Since their knowledge of Persian is weak, they cannot reach to a stable level deeply. Conversation in Persian is restricted to home and out of school. As a result, the format of that limited conversation in Persian is flawed. Students reading problem has different reasons. Some of them are due to not being prepared in pre-reading stage. Another set of problems in reading disability can be attributed to failure in recognizing letters and words. Some other symptoms are because of not comprehending the meaning during reading process.

Pronunciation errors and reading slowly with pauses can be found in abundance. Some of their problems as disability in writing subjects are very visible. Their writing has drawbacks in terms of structure and message. The number of words in their sentences are limited.

She adds that there are a lot of differences and some similarities between Persian and other two languages in construction of phonetic, morphology and syntax. It seems that the differences between them are the basic for creating language-learning difficulties.

However, Magga at al. (2004) declare the children's education right as the Convention on the Rights of the Child (CRC) states in Art. 29 that the education of the child shall be directed to "The development of the child's personality, talents and mental and physical abilities to their fullest potential" and "The preparation of the child for responsible life in a free society, in the spirit of understanding, peace, tolerance, equality of sexes, and friendship among all peoples, ethnic, national and religious groups and persons of indigenous origin". Based on ILO Convention No. 169, Art. 29, "The imparting of general knowledge and skills that will help children belonging to the peoples concerned to participate fully and on an equal footing in their own community and in the national community shall be the aim of education for these peoples". The most essential educational Linguistic Human Right (LHR) in education for ITM children is an unconditional right to mother tongue medium education in a non-fee state school, at least during the whole primary education (minimally 6 but preferably 8 years). (p. 2)

## CONCLUSION

As Baker (2011) elaborates, there two kinds of bilingual education. Some of them are weak forms which their basic purpose is assimilation of language minorities rather than maintenance of their home languages and cultural pluralism. In non-Persian regions of Iran although teaching in another language is not allowed, some teachers converse to students' mother language to help them understand the basics. It seems that at least they try this type of



bilingual education at first grade to help students be assimilated in Persian language and they are not taught their own culture.

As Baker states the basic purpose is still assimilation and not bilingualism or biliteracy. They are named as mainstreaming/ submersion, segregationist, transitional bilingual and separatist forms of bilingual education.

Regarding the fact that majority of Iranian students are non-Persian, most of their parents, teachers are struggling with children's learning problems and the children themselves tolerate big pressure of underachievement and disappointment. It is time even so late to give back their real right of education in their mother language. It is worthwhile to use other countries experiences on having bilingual instruction in their schools, train bilingual teachers and stop wasting the smart human resources of Iran. There are some varieties of strong bilingual education where the application of both languages, national language as majority language and mother language as minority language, in the curriculum is fostered. Strong forms of bilingual education determined for students to become bilingual, biliterate and bicultural sometimes multicultural, multilingual and multiliteracies. Some of the well-known strong bilingual education types are immersion, heritage language and dual language education. (Baker, 2011)

The vital solution for dropouts in schools is bilingual education which can help students obtain knowledge in their mother language to build strong educational foundation. If they learn their own culture at school, their self-esteem will be given back to them. As a result, they will have tendency to learn national language in order to have success in higher stages of education and to have a proper job deserving their talent and hard-working. This kind of additive education will support the unity of the country and erase the threat of separationist beliefs.

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## Opinion of College Students About Comprehensive Learning and Didactic Instrumentation in The Classroom

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### ABSTRACT

This paper reports the opinion of a group of engineering students from the Polytechnic University of Pachuca, Mexico about the comprehensive learning and didactic instrumentation in the humanities courses within the university as an opportunity area for analysis of real situations. It was used mixed methodology: in the first part a questionnaire was applied and, in the second part, the focus groups technique was used. For this research were considered contributions of Delors (7) Morin (19), and Torroela (23). The discoveries of this research revealed the importance of the contents of humanities courses and some other essential factors in the didactic instrumentation that impact comprehensive learning.

**Keywords:** Students Opinions, Comprehensive Learning, Didactic Instrumentation

### INTRODUCTION

Nowadays, educational policies shows the need of enhance students development in a holistic way. The impact of education process in the transformation of the individual has been emphasized. That's why it is very important to prepare the student for life.

In this context, the educational model of the Polytechnic University of Pachuca (Universidad Politécnica de Pachuca, UPP) includes among its objectives to promote a comprehensive education in their students. It identifies two main points to enhance the overall education of students. Cultural diffusion programs outside the school constitute the first one. The second one is about the curriculum of undergraduate programs. This research is focused in the last point.

Comprehensive education must have an impact on the development and performance of a highly competent professional on the field and not just only apply an administrative reform in the curriculum.

The process of comprehensive education requires an ethical commitment, and the effort of the entire university community, first of all, to understand it and apply it because depends of various factors and circumstances in the university life. Comprehensive education needs to transcend the whole educational process and educational practices by putting humanities as the principal educational objective.

The UPP educational model has six humanities courses in the curricula as strategy for comprehensive learning: Human values, Emotional intelligence, Interpersonal Skills, Thinking Skills, Organizational Skills and Professional Ethics.

These courses were designed in order to potentate meaningful learning, ethics, values, emotional and social intelligence, harmonious and productive relationships, leadership skills and teamwork. However, the multidimensional character of their contents does not imply that

they only will be taught as a subject, they must remain as values, principles, attitudes and behaviors throughout the educational program to be part of the student environment.

As a first approach to analyze the impact of these courses in the comprehensive learning of engineering programs, percentage of subject failure in the 2012-2013 period was checked and compared. The highest rate of failing was found in Interpersonal Skills (41%), Thinking Skills (29%) and Emotional Intelligence (27%). These courses cover a range of content that are focused on develop capabilities to build collaborative relationships with others, effective communication, teamwork, self-awareness, managing emotions, developing critical thinking and creative problem solving.

It is important to note that currently the training of university students should be multidisciplinary to develop skills that contribute to the pillars of education: learning to know, learning to do, learning to live together, learning to live with others, and learning to be. That's why it is important listen to them. We asked to 280 students what they think about comprehensive training and the didactic instrumentation.

### **Research questions**

Which themes in the humanities courses impact the comprehensive training of engineering students?

What are the opinions of a group of engineering students about the conditions that promote comprehensive training in didactic instrumentation of courses development human?

This article presents results of a mixed investigation, which shows the contribution of humanities courses in comprehensive learning of students of engineering. In addition to identifying which elements of the didactic instrumentation enhances integral formation. It is organized into five sections: general characteristics of the educational model of the UPP, theoretical approach, methodological design, results and discussion, conclusions and suggestions.

### **GENERAL CHARACTERISTICS OF THE POLYTECHNIC UNIVERSITY OF PACHUCA**

In 2001 a new system of higher education in Mexico was created: Polytechnic Universities gave young people alternatives to study in graduate and undergraduate programs with the aim of meeting the educational demand, attend the needs of business, industry and services sectors in Mexico, and generate innovation through science and technology.

Mexico's Polytechnic University System (UUPP) as part of the Ministry of Public Education (Secretaría de educación pública, SEP), opens the first Polytechnic University in the Mexican state of San Luis Potosi, in September 2001. The educational model is based on competency-based learning, which aims to develop humanistic, scientific and technological capabilities in the student.

For Polytechnic University System, the concept of competence is defined "as the set of capabilities that is reflected in knowledge, skills and attitudes that are a priority in the professional context". It aims to develop humanistic, technological and scientific skills with the training process UPP (24).

The curriculum is divided into three stages that include a total of nine periods in college and one extra in different sectors. The goal of the curriculum is conduct the education process

focused on the development of meaningful learning, which requires the use of strategies such as cooperative learning and different teaching tactics and evaluation processes to identify the level of development of students skills.

The model has an intensive profile, in spite of students finishing the undergraduate program in 3.5 years. In the design process of each curriculum, professional performance is established with the advice of productive, social and academic sectors by the functional analysis method, to identify the specific skills needed to develop satisfactorily in any activity.

Curriculum of each undergraduate program at Polytechnic University System has the following criteria: ten periods, each one of four months (Named "*cuatrimestre*", in spanish); includes approximately 600 hours of training and the only academic requirement for certification is the entire conclusion of the curriculum.

The Polytechnic University System has established 50 polytechnic universities so far. Notably, the state with the largest number of polytechnic universities is Hidalgo with a total of five schools: Polytechnic University of Tulancingo (Universidad Politécnica de Tulancingo, 2002), Polytechnic University of Francisco I. Madero (Universidad Politécnica de Francisco I. Madero, 2005), Metropolitan Polytechnic University of Hidalgo (Universidad Politécnica Metropolitana de Hidalgo, 2008) Polytechnic University of Huejutla (Universidad Politécnica de Huejutla, 2012) and the Polytechnic University of Pachuca, founded in January 2004.

### **Comprehensive Learning and Educational Model of Upp**

The 21<sup>st</sup> Century Education requires tasks that are not only to provide knowledge, also to prepare for life, so their focus is directed towards the teaching of knowledge, skills, attitudes and values. This type of education goes beyond continuing vocational training; Delors (7) suggests that education throughout life "emerges as one of the keys to the twenty-first century" (p.112). ... "Must give each individual the ability to direct his destiny in a world in which the acceleration of change, accompanied by the phenomenon of globalization, tends to modify the relationship of men and women with space and time" (p.113).

The most important reform in Higher Technological Education is the competency-based educational model (EBC). Change is observed in the curricula of the technological subsystems, with each course identified as a necessary competence.

In this context, academic curriculum of engineering acknowledges that is necessary to learn solving exercises, which are also widely accepted as an appropriate instrument for learning evaluation Callejas et al (4). However, the most important part in this process is the reflection that the student does and that it has to do with thinking skills.

The ubiquitous transmission of already developed knowledge, collections of solved exercises ("no exercises") and the "laboratory practices", with exercises developed like recipes and detached from the logical structure of the subjects. Nevertheless, the growth of the student population and academic failure is producing a social problem (Ibid).

In this context, exercise solving, is a way that can support the incorporation of concepts from different disciplines to student thinking, encouraging students to "take ownership" of them and achieve meaningful learning to assist them in decision making throughout life and not only consider this concepts a way to "approve" a course.

Previous knowledge of students is a specific tool with which they arrive to college, and when they use them in the classroom, promotes, sometimes, critical thinking to identify and solve a problem as the learner builds actively knowledge Driver et al., (8). But then, why should engineers acquire competences?

Being a good engineer is not only a matter of knowledge but also "know-how". There are traditional values such as efficiency, that defines the "engineering virtue" and they are reflected in the outcome of the activity. Those are values in technological education should not be neglected. Nowadays, when technology has gained extraordinary importance, there are other values that should also be present in the education of engineers to make them a professional adapted to their context. This is about educating to innovate and educate to participate López and Valenti, (18) (p. 56).

Transformation of society into "knowledge society" has certainly impacted all sectors. Morin (18) analyzes that human formation cannot be seen from only one aspect neither as the sum of unstructured efforts. The education has traditionally been entrusted to educators, but it is responsibility of society as a whole. The social complexity demands a kind of education that is taken from an inter and trans-disciplinary perspective, looking for synergy between the contributions from various fields.

Technology has changed relationships in work: In the past, up to twenty people were required to do an activity, nowadays a single person is enough. Social processes within work were performed with more people than now, so it is important to identify the role of engineers against technological innovation that require social participation to be viable and consolidated. This increases the need for professional training that prepares engineers for participation and technological innovation, the synergistic work, a critical attitude, autonomous and reflective required to apply it in different contexts.

Due to the last point, Hernández (12) (p.140) notes: " ... acquiring competences that would be associated with knowledge fundamentals, the ability to take on new situations and act with understanding, accountability and efficiency in different contexts [...] capable of appropriating new knowledge through active commitment to the intellectual work and adapt to relatively unpredictable social situations. "

In general, changes in the curriculum had been implemented, but the problem still exists in the process of teaching instrumentation. Most of the teachers were educated in the traditional way; they have some serious problems in breaking paradigms as to accept new teaching strategies. It's a big challenge take complex problems in the classroom for develop certain competence.

Process of instrumentation is similar to the teaching - learning process Eusse, (9) says that this process involves addition of activities, techniques, resources and procedures that represent the operative part of the procedure as well as certain learning situations and different evaluation forms.

There are many proposals to create an environment that enhances teaching and learning. The Mexican System of Higher Technology Education (Subsistema de educación superior tecnológica. SEP, (22) suggests five aspects to consider in the process of teaching instrumentation; 1) Analysis and organization of content, 2) Clear learning concept, 3) Organization of learning activities, 4) Organization of teaching activities 5) Establishment of evaluation criteria.

In the same vein, UPP considered a teaching strategy as a chosen course of action among alternatives provided to obtain the objective of the task. Teaching strategies are the actions taken by the teacher to organize and present the contents of their subject so directly and indirectly promote student learning CUP,(6) ( p.33).

Because of the last idea, student support is essential in teaching and learning process as a factor that allows feedback different viewpoints of stakeholders to generate an enriching dynamic between them. With this we can see that the personalization of education is emerging as one of the main objectives and challenges of the contemporary educational system. Therefore it is important to analyze the opinion of a group of students from several undergraduate programs at the Polytechnic University of Pachuca regarding factors that may favor their comprehensive training.

### **METHODOLOGY**

Some researchers like Perez (19), Bolívar and Fernandez (1) agree when they address the topic of educational research saying that the production of generalizable knowledge is complex, and it never will be enough because the ones who participate in this process perceive the education phenomenon from different points of view and is nuanced by their own knowledge, behaviors and attitudes toward its object of study.

However, the visible characteristics of an event in the educational field are as important as the interpretation of those involved in it from their own point of view. "Therefore there is no single reality in the social sphere in general and to the educational in particular, but there are multiple realities that complement each other. From each of these realities, different perspectives are shown delineated for each singular individual or group. Individuals are active agents who construct in a conditional way, the sense of reality in which they live (Pérez, (20). To achieve the goal of this research, a mixed methodology was used. About the last point Hernández, Fernández and Baptista (13) (p.21) argued that this type of research (...) represent the highest degree of integration or combination of qualitative and quantitative approaches, both are mixed (...) but provides all the advantages of each one.

Similarly, Johnson and Onwuegbuzie (16) (p.17) defined mixed designs as "the type of study where the research combines research techniques, methods, approaches, concepts or quantitative or qualitative language in one study ".

As a result of the point exposed in the last paragraph, a concurrent triangulation design was used, because it was organized in two stages simultaneously, quantitative data was collected and analyzed to identify contents that promote comprehensive training in engineering students. Also qualitative data were analyzed through focus groups technique to investigate engineering students opinions, thus comparisons of the two results were performed during the course of test interpretation Sampieri, (21).

During the research both paradigms supplemented each other, in the first moment (quantitative) data were obtained to continue the second one (qualitative). The steps were considered as processes, according to Cifuentes (3) in qualitative research, every process is built, written and rewritten, updated, qualified and makes in-depth analysis when new knowledge is addressed or when the researcher did reflection and has more information. The random sample was formed by 280 students of the UPP, of different programs who at that time were taking subjects detected with more reprobate students: Interpersonal Skills, Thinking Skills and Emotional Intelligence.

The following figure shows the research process:

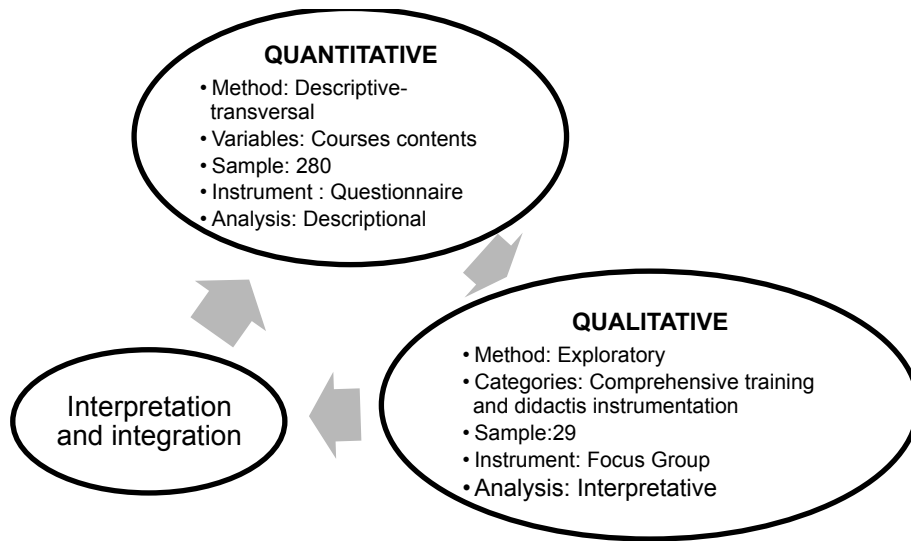


Figure No. 1 Methodological design.

As a part of a first approach in the first part of the research, a quantitative questionnaire was used to identify, in the opinion of 280 students, which humanities courses had content that promote comprehensive training. On the other hand, in the qualitative stage of the research, the use of focus groups technique allowed to identifying the factors that helps the comprehensive training of the students.

The focus group technique allows an approximation to the way a certain number of people with common characteristics build an approximation to the reality of a problem or social circumstances according to their experience. This context is characterized by a face-to-face communication, involving different aspects of social and cultural nature that form the perception of the participants and it had to be considered to achieve a wider comprehension of the factors that we want to know, in this case, the importance of comprehensive training for engineering students.

According to Korman (17), a focus group is "the meeting of a group individuals, selected by researchers, to discuss and elaborate, from their personal experience, a thematic or social fact that is under investigation." In the focus group, the emphasis was on interaction and making in-depth analysis of the most relevant aspects of different topics that were the matter of interest among the researchers and the students. This process led the interaction, discussion and drawing conclusions, as a result of the opinion of participants.

In a methodological review of the focus group technique, four criteria of applicability that allow assessing the strategy used for data collection based on the purpose of the research were identified: 1) focus and depth of the subject, 2) targeting and conformation of groups 3) targeting and characteristics of participants and 4) level of involvement of the researcher. Each of these criteria allows the establishment of data quality, and the validity of using the focus groups technique in order to get a greater depth and richness of qualitative information elements, achieving a deeper analysis of the problems identified.

Three student groups and teacher groups were formed from eight to twelve participants each one. From the data collected during fieldwork with the instruments applied to students, three categories of analysis are presented: 1) the meaning of the comprehensive training, 2) the importance of humanities for the comprehensive training and 3) positive aspects that strengthen the comprehensive training in didactic instrumentation of humanities subjects.

## RESULTS AND DISCUSION

In the first part of investigation, the used questionnaire was validated with the cronbach's alpha test and a score of .82 was obtained, which means an acceptable degree of reliability. Contents of humanities courses that strengthen comprehensive learning were identified from the students' point of view, the results are shown in the following table:

**Table No. 1 Contents of HD subjects favoring comprehensive training**

Subject	Contents	No.	1 %	2 %	3 %	4 %
Interpersonal Skills	Communication	191	0			68.2
	Social Intelligence	134	0		48.2	
	Collaborative work	127	0	45.4		
Emotional Intelligence	Multidimensionality	98	0	35.2		
	Emotional Intelligence	126	0		45.2	
	Motivation	204	0			73.2
	Self-Regulation	163	0			58.3
Thinking Skills	Concrete Thought	100	0	35.8		
	Inferential thinking	169	0		60.4	
	Critical and creative thinking	182	0			65.3

Table No. 1 shows the percentage of answers of Likert scale: (4) Important, (3) Moderately Important, (2) Of Little Importance and (1) Not important. It can be observed that the first option (1) has no answers, this reflects the widespread agreement of humanities courses importance for the students' comprehensive learning.

The essential contents for the comprehensive learning according to students' opinion were: Motivation with 73.2%, Communication 68.2%, Critical and Creative thinking 65.3% and self – regulation with 58.3%.

In the other hand, content elected as moderately important were: Inferential Thinking 60.4%, Social Intelligence 48.2% and Emotional Intelligence 45.2%. Results in option 2 were: Collaborative work 45.4%, Concrete Thought 35.8% and Multidimensionality 35.2%.

With the findings identified in the first stage of the investigation was possible to elaborate a first asseveration: All contents of humanities courses are important for the comprehensive learning of students, however, opinions reflect different assessments according to content's characteristics. These results highlight the relevance of integrating humanities in engineering program curriculum.

Gonzalez (11) states that the comprehensive learning is a concept that has diffusely affected the curriculum, and it is often associated with areas of social and human sciences, something that it is still hard to integrate into the engineering curricula.

Derived from what was addressed above, it also was identified in the responses to open questions that some teachers and students consider the comprehensive learning as something



complementary and external to the curriculum. In this regard, Bravo de Nava et. al., (2) note that comprehensive training is a point where a variety of highly complex elements join together and this implicates certain aspects that make a network of specific and particular variables.

In the second stage of research, focus groups technique was organized into four stages in a semi- structured way: a) An introduction in which a document about comprehensive training was analyzed by researchers and the individuals of the group, b) Questions and answers session about humanities classes, their didactic instrumentation and their impact in comprehensive learning, c) identification of conditions that promote comprehensive learning in humanities classes instrumentation, and d) suggestions for improving their comprehensive learning.

To continue the analysis of the results of the questionnaire, as part of the second phase of research open questions used as a trigger for reflection in the focus group were prepared to identify categories, the percentages obtained are shown in the following table:

**Table No. 2 Categories of analysis**

Categories	Indicators	No.	2 %	3 %	4 %
Importance of humanities for comprehensive learning	Knowledge	13	44.8		
	Professional Development	14		48.2	
	Development as individuals	17			58.6
	Social development	10	34.4		
Meaning of comprehensive learning	Physical, psychological and spiritual balance	18			62.0
	Personal and professional development	22			75.8
	Own welfare	9	31.0		
	Shared experiences	12		41.3	
Teaching strategies that promote comprehensive learning	Relationship Theory - real life	19			65.5
	Teamwork	13		44.8	
	Taking into account the opinion of students	18			62.0

As it can be seen; 58.6% said that humanities are indispensable for development as humans in students' comprehensive training. 75.8% said that the personal and professional development, physical, psychological and spiritual balance reflect the true meaning of comprehensive learning. Teaching strategies that favor the comprehensive training are: 65.5% theory - real life relationship of contents and 62% keep in mind points of view of students. Another aspect that strengthened the above results were relevant comments by the degree of consensus on the importance of humanities. These opinions realized the need to address the different content globally. The students reflected that:

*"Humanities are quite important, because they provide knowledge that is usually considered useless or not important in engineering"*

In this regard Yuz (25) (p.43) highlights the significance of globalization in education, which refers to how we approach knowledge of reality and how it is perceived, if it involves a totalizing intent regarding their elements. To implement an approach to globalization, proposals of organization of knowledge are important, as well as generate a challenge in teaching instrumentation. So that information can be transformed into knowledge and in turn

mechanism that enriches the quality of life of students. Students claimed that the contents of the subjects of human development:

*"...Are important because they allow us to develop not only as professionals but also as individuals"*

Different ways to address the complexity of comprehensive learning can be found. From an anthropological dimension, it focuses in the development of physical, intellectual and moral faculties of man, from a psychological level is considered rational, cognitive, behavioral, sensitive and spiritual. These elements can be seen translated from pedagogy in the development of thought, actions and feelings.

From the approach of didactic methods, Zarzar (26) distinguish the components that promote comprehensive learning in teaching - learning process, integrated in knowledge, abilities, attitudes and ethic values.

Zarzar talks about a system that integrates: information, intellectual skills, psychomotor skills, methods of obtaining knowledge and work systems, habits, attitudes and ethic values. About that, students detected the need of complement various factors from the perspective of their specific curriculum and, with that, strengthen comprehensive learning:

*"Personal and professional development of an individual, both should be 'together'; address weakness that could exist in both of them"*

Students' opinions showed the search of balance in their formation. Torroella (23) acknowledges the importance of "pedagogy of being", which consists in education for life, focused in two aspects: individual and social. It is addressed to comprehensive development of personality, potentiality, and plenitude of human being.

In this regard, different authors agree when pointing out the following guiding principles: student focused education; respect and acceptance of student, as a fundamental attitude of educator; a link with life, in the sense of "take school into life and bring life into school", school as a life lesson. Something that was reflected by students' opinions:

*"Work with fisical, psychological and spiritual facets equally"*

In order to get this balance, students' academic side can be enhanced inside and outside school to favor teaching - learning process of the contents that derives in comprehensive learning, all of this through the outline of every course in curriculum and with scholar activities. From this perspective, humanities will become the cross-curricular topics that will be used to humanize scholar process. However, in order to do this, opinion of students is needed:

*"Professors with enthusiasm and ethic values that use a wide variety of teaching strategies and technological tools inside the classroom"*

This, with the objective of plan, organize and implement curricula in a more humanistic and cross-curricular way, in order to link their contents with real life situations and students' personal development as human beings. That's why, all teachers need:

*"We need enthusiasm and positive attitudes. An interactive way of teach themes, linking them with real life situations"*

In this regard, university education must offer a wide range of scientific, technological and humanistic experiences, all of them related to "real life". Is important to say that university education must not be under rules imposed by market dynamics: It has to contribute to independence of individuals and development of human being, in a permanent definition of pedagogic utopias and social, Inciarte, (15).

### CONCLUSIONS

The findings show the challenge of technological higher education, which implies taking responsibility of being in educational field and try to take awareness in a more demanding world that requires individuals formed in a holistic way.

It is necessary orient curricula towards expectations of social, scientific and institutional context. This work requires that educational institutions consider they can not be passive and/or indifferent to social demands, which should promote reflection of society itself, and the institution as a social organization, whose essence are the formation processes inspired by the desired society Inciarte, (14).

To do this, it is necessary to generate a change in institutional culture that promotes solidarity work, so that promotes collaboration between disciplines and, ultimately, eliminate fragmentation in curricular contents. González [(10) (11)] "social problems analysis are necessary to consider in curriculum.

Besides this Morin (19) also says that addressing tomorrow education a re- attachment of knowledge resulting from the natural sciences to locate the human condition in the world, those resulting from human sciences to clarify the human multidimensionality, human complexities and the need to integrate the invaluable contribution of the humanities. This can reassert the value of the opinions of students that emphasize the importance of the subjects of human development for their comprehensive training, however they noted that there are still challenges to face because in these subjects is necessary to enhance empathy and collaboration with other subjects.

Under this approach university education requires expand its choices with the following levels: understanding the technical terminology of various disciplines, critical use of technology, mastery of symbolic languages, developing sensitivity to humanities and arts, and exercise the body through physical activity. All of this implies promote scientific and technological reasoning, ethical sense, personal responsibility, commitment to sustainability, diversity and social commitment. Learning would become a practical experience and not just an experience based on abstraction and theoretical discussion.

According Campo and Restrepo (5) when an educational organization is looking for Integral training of people, the teacher-student relationship should be exemplary, "model to" and "model for" think and understand other relationships in all areas of everyday life, work with colleagues, between different hierarchical levels between academy and administration.

Students perceived the importance of humanities as an indispensable part of their professional development. Motivation was also highlighted, as an important factor in learning, thinking, communication and cooperation process, so it is convenient to use different teaching strategies that promote students' interest in their development as individuals.

So it is essential planning and organize curricula and courses with a great humanistic sense, that's why is important the relationship between different disciplines and converge to real life situations, especially to experience lived by the student. When students link real life situations with school contents, it favor significant learning that could impact, in a good way, their academic performance and quality of life, in a way that an engineer will have acquired knowledge and attitudes of service and attention to others. There are elements that, nowadays, are lacking in graduates.

The results can generate a challenge to teachers to carry develop skills to work in a collaborative and multidisciplinary manner, that allows placed in the center of the educational process the comprehensive training of student.

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## Practical Reflectivity as a Context for Teachers' Professional Development: a Mixed-methods Study

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### ABSTRACT

This study aims at analysing the influence of practical reflectivity, as a context for professional learning, and its impact on teaching practices. Therefore, a mixed research method has been selected, based on qualitative and quantitative procedures, combining an enquiry to high school teachers and interviews to supervisors, given their privileged knowledge on the educational reality of schools and especially on the performance of teachers in classroom. These two areas of analysis, in spite of being different in terms of methodological nature, enable a comparative analysis. The study shows that all the participants, teachers and supervisors, recognize the importance of a contextualized reflection-in-action as the means to achieve greater quality of practices and an effectiveness of professional teaching development. It is also consensual the importance of a reflective teacher, who is able to question and improve his practice using investigation-in-action as basis. However, reflection is not always applied during the educational process, demanding more collaborative work between peers, pedagogical didactic update and investigation placing the student as centre. Although there is still a long way to go in terms of professional training, participants of this study perceive reflectivity as the right way to be a teacher in an educational community.

**Keywords:** Reflective teacher; Practical reflectivity; Teachers' professional development; Educational community; Mixed-methods study.

### INTRODUCTION

Nowadays, a new pedagogical attitude is required from the teacher, enabling him not only to acquire further knowledge but also to develop personal training skills and social intervention. The demands and challenges faced by teachers are becoming more complex, given that they translate the changes that have been occurring in the economic, cultural and political fields. It is expected from the teacher to fully question his practice and develop professionally as a lifelong learner.

School has the mission of, through the means of a social useful curriculum, promote the development of the young learner and his educational success. In this context, a new paradigm for professional learning emerges, leading to the interconnection of the training processes with the School's educational processes (Robson, 2006). Therefore, research in the educational field has been focusing on professional development, in terms of its interrelation with practical reflectivity in the context of each educational community.

The complexity of a reflective improvement process, focused on the classroom and community (Hargreaves & Shirley, 2009) justifies the present study about practical reflexivity and professional learning, exceeding the individual performance within the classroom, englobing a

collective work shared among teachers. It matters, therefore, to analyse the potentialities of reflection and the profile of the reflexive teacher, towards the teaching responsibilities of planning, guiding and assessing an integral process of teaching and learning, in a perspective of improving the practice.

### **Teachers' Practical Reflectivity**

The concept of practical reflection is based upon the conceptions made by Schön (Schön, 1983, 1987, 1991), on the reflective component of professional training, from practical situations. Schön considered a reflection- in- action, before, during and after action. Practice is the main line of the curriculum for teaching training, initiating a development of attitudes, skills and abilities, necessary to a "knowledge-in-action", possible through reflection (Argyris & Schön, 1978, 1996). Contrary to the theories of technical rationality, in which practice comes at the end of the process of development of the curriculum, in the model of teaching training as reflective professionals, teaching practice is the centre of action, reflection and construction of the teaching knowledge (Alarcão, 2009).

Reflection is not linear, but it occurs in a linear, procedural and recursive way. Reflective thinking in action and its respective reconstruction can elapse separately or simultaneously. This process involves processes that go from introspection, more personal and regularly registered in diaries, portfolios or autobiographic interviews, to collaborative reflection and discussion, between teachers, sustaining the enquiry-in-action (Moon, 2004).

The concept of reflective teaching covers attitudes and skills for reflection. Zeichner and Liston (Zeichner & Liston, 1986) and Zeichner (Zeichner, 1993) based on the thoughts of Dewey (Dewey, 1933, 1938) enumerate three attitudes fundamental for reflective practice. The first one is the one of receptivity towards other ways of acting, admitting the possibility of making errors. The second one focus on responsibility, involving reflection on the action to be performed. The third one concerns honesty about the practice. In the search for a balance between reflection and practice, reflection- in- action occurs before, during and after action, aiming an educational improvement. This stage of reflection on what and how to evaluate practices, through the use of *metareflection* or awareness of the mechanisms of regulation used in the process of questioning is essential (Rodgers, 2002).

Following Dewey's ideas, Perrenoud (Perrenoud, 1998, 1999) also conceive three inherent attitudes for a reflexive teaching process. Initially, the teacher must adopt an open mind, free of preconceptions, impartial and prepared to accept new ideas. Secondly, an intellectual responsibility must be assumed, so that the teacher is able to consider, timely, the consequences of actions and standpoints previously taken. The final attitude, contributing to a reflective teaching, is enthusiasm, ability to reinvent and oppose to the routine some commitment and dynamism, in the performance of the activities. In this context, educational change focuses on the professional identities of teachers and on continuous training, enhancer of the reflective improvement of the practices, inside the classroom.

### **School as Reflective Community**

Reflective teachers build and rebuild their knowledge with professional practice, mobilizing what they know within a collective practice. As a consequence, they are professionals who answer the demands of the contexts where they work, interpreting and adapting them to their own performance, changing their own preconceptions, if necessary (Collier et al., 2010). This perspective refers to the concept of reflective School, as a community that continuously rethinks itself, in its social mission and structure. Following these thoughts, school assumes itself as a learning educational community, through the means of enquiry and reflection-in-

action (Senge, Cambron-McCabe, Lucas, Smith, & Dutton, 2000). It starts from professional teaching improvement to the development, as a group, of action skills, enquiring and reflective, in the context of a learning and reflective school (Alarcão, 2009).

The most important aspect is collaborative work through team learning (Hargreaves & Shirley, 2009; Nolan & Hoover, 2004). The way teachers learn depends on contextual factors, which interconnect personal biographies to the educational features of interpersonal relationships of each context. In this process of self and group training, developed as a community, interpersonal relations are essential for the construction of routines and dynamics of teaching work among peers. This work of peer regulation is yet strengthened by recent performance, in Portuguese schools, of teachers who perform the role of supervisors and evaluators of their teacher colleagues (Glickman, Gordon, & Ross-Gordon, 2001).

Current supervision demands someone with professional skills appropriate for the mediation of educational processes, namely, an ability for perception to analyse educational realities and stimulate teaching reflection. It is the duty of the supervisor to promote the enquiry in action of classroom practice, but mainly, he must be able to, along with teachers, build an environment for change and innovation, inductive of a democratic practice, reflection, enquiry and collaborative assistance in pedagogical decision-making processes (Pawlas & Oliva, 2007). The work performed between teacher and supervisor must depend on a relation of dialogue, collaboration and reflection.

Thus, a reflection of collaborative nature can stand as a strategy of enormous training potential, by stimulating the resolution of common educational issues. Therefore, professional teaching improvement and growth increases, when the students' process of learning is assumed as a collective work. This work encompasses continuous interactions between teachers and the shared construction and reformulation of educational practices, success and failure, on school or class levels (Peel, 2005; York-Barr, Sommers, Ghore, & Montie, 2006).

Accordingly, the ecology of personal and professional development of the teacher implies a mutual interaction between the teacher's experiences and the particularities of the educational community. According to the model of influence and regulation of Bronfenbrenner systems (Bronfenbrenner, 1979, 1994, 2005), it is essential to understand the different levels of influence that act in human development, in which school, and in a vaster extent the educational system, are included. Within this process of reciprocal influence, of ecological nature, the professional development of the teacher and the school is processed, in a process of interrelation with the environment, characterized by its contextual, continuous and specific aspects. Consequently, the construction of a shared reflection in community, following an ecological supervision receives primordial importance in the educational context, when aiming to potentiate the quality of the learning process, targeting educational success, either individual or collective, of all the elements of the same learning educational community.

## **MATERIALS AND METHODS**

This research focuses on teachers' perceptions about the influence of practical reflectivity, as a context for professional learning, and its impact on teaching practices.

In accordance, a mixed methodology was applied, combining both quantitative and qualitative approaches (Ercikan & Roth, 2006; Punch, 2011). The data were collected in 2014 from questionnaires applied to 80 secondary school teachers and from structured interviews to 10 supervisors, all from Oporto public schools. After transcribing the *interviews*, a category-based



analysis was applied to the discourses of teachers, supported by numerical data. Categorical aggregation, *a priori* and *a posteriori*, was based in the characteristics previously referred to, in literature reviewing (Coimbra & Martins, 2013; Stake, 1995; Yin, 2011).

This way, questionnaires were able to provide evidence of patterns amongst a large amount of teachers, while qualitative interview data deepened understanding about teachers' perceptions and opinions, how they experience practical reflectivity in schools and improve teaching and continuous professional development. The aim was to combine two types of data, with a minimal time gap, in order to obtain consistency and confirmatory results, in a questionnaire-interview comparison study (Harris & Brown, 2010; Reams & Twale, 2008).

## RESULTS AND DISCUSSION

### The enquiry by questionnaire

Results of a questionnaire enquire with the characterization of the sample are presented below. In 80 teachers, the female sex prevails. As far as age is concerned, it prevails the age level between forty and fifty, followed by, in decreasing order, teachers over 51 and the ones between 30 and 40. The prevailing academic qualification is a degree from University and most teachers claim to be in a stable professional situation. In this group of teachers some detain roles in management or supervision.

As far as the importance given by teachers to reflection-action is concerned, 100% of the sample agrees that it is fundamental. The same result was obtained for reflection before, during and after action, demonstrating that there is a great awareness of the importance of reflection.

A selected set of questions and the respective results are shown below.

**Table 1. Contribution of reflection to the improvement of practices.**

	%
Improvement of planning	38.7
Improvement of action in classroom	25.0
Contextualization of practice	15.0
Reformulation of practice	15.0
Procedural evaluation of practice	6.3
Total	100.0

In terms of the contribution of reflection to the improvement of practices, results are in table 1. According to the answers given by teachers, improvement of planning (38,7%) and improvement of action in classroom (25.0%) are highlighted. Both the contextualization of practice and its reformulation attained the same value (15.0%). Finally, procedural evaluation of practice (6.3%) appears last, showing the reality of the evaluation and self- regulation that many teachers carry unsystematically, frequently based on the students' final results. Consequently, reformulation of the practice is not implemented or is done in an incomplete way.

**Table 2. Contribution of reflection for professional development.**

	%
Questioning of practice	40.0
Promotion of investigation-action	18.7
Improvement of professional skills	17.5
Promotion of collaborative work	12.5
Promotion of individual work	6.2
Pedagogical update	5.0
Total	100.0

The results of table 2 are elucidative about the contribution of reflection to the development of teachers. Questioning of practice (40.0%) is more relevant when compared to other results. It is followed, very closely, by promotion of investigation-action (18.7%), improvement of professional skills (17.5%) and the promotion of collaborative work (12.5%). Promotion of individual work (6.2%) as well as pedagogical update (5.0%) reached the lowest numbers. This last category reveals little concern about updating, in spite of being so essential for the substantiation of reflection, to investigation-action, and, especially, for the improvement of classroom practices.

As far as teachers' insights about considering themselves as reflective teachers and why are concerned, the general answer was yes. The justifications are found in table 3.

**Table 3. Justification for being a reflective teacher.**

	%
Reflection before, during and after action	45.0
Reflection as the basis for action reformulation	21.2
Collaborative reflection among peers	18.8
Teacher as researcher of the practices	12.5
Longlife learner	2.5
Total	100.0

A justification has been requested to each teacher. Reflection before, during and after action (45.0%) was the predominant given answer. Next, teachers present reflection as the basis for action reformulation (21.2%) and collaborative reflection among peers (18.8%) as a valid justification. The teacher as researcher of practices (12.5%) is revealed to be less common among teachers, corroborating the results of subcategory promotion of investigation-action (18.7%) in table 2. Among the few (5.0%) that do not consider themselves to be reflective teachers, the prevailing justification is lack of time due to the high number of classes. In general, teachers reveal answers that follow the lines of the advantages of reflection-action as featured by Schön (Schön, 1987, 1991). However, results show that they not always practice them in a systematic way.

### Enquiry by Interview

The enquiry by interview was carried out to 10 supervisors. Theirs duties are the evaluation of teachers' performance, including classroom observation, which gives them a privileged position for analyzing the performance of reflective teachers' action.

The analysis of the interviews considered four different categories sustained by the revision of literature. The selected categories consider the process of reflection in action, the potential of reflection of the practices, the profile of the reflective teacher and the improvement of professional abilities. Counting of simple occurrences in the transcribed discourses, after respective semantic carve, was made for each category and subcategory, considering the *corpus* in analysis. Considering the first category of analysis, reflection in action, results are displayed in table 4.

**Table 4. Substantiation of the process of reflection-in-action.**

Category 1 Process of reflection in action	
Subcategories	Oc.
Reflection before action	13
Reflection during action	8
Reflection after action	10

**Subtitle:** Oc. – Occurrence

All supervisors consider that teachers perform reflection before action, however the same does not happen for reflection after action and, mainly, for reflection during action. From a total of 31 discursive occurrences, the majority indicates reflection before action (13), referring to the decisions to be taken along the planning process, previous to pedagogical work. These numbers are considerably different from the ones obtained from the enquiry by questionnaire in which reflection before, during and after action reaches 100.0%, although the different moments of the reflective process already present results of 45.0% (table3). The difficulty of implementing reflection during action is confirmed due to the simultaneity of actions that it implies, as it was explained by the supervisors.

**Sup. 2:** “For reflection before action there is no problem. But reflection during action is difficult to observe, unless teachers verbalize later on their decisions in the classroom or register in diaries and portfolios (...) The problem is with reflection after action because teachers avoid it, if it is done among peers or with a supervisor. Some, instead of understanding it as an opportunity to improve practice, consider it to be a personal criticism”.

**Sup. 3:** “Reflection in action is not easy. The majority of the teachers I observed in classroom, perform some kind of previous reflection when selecting curricular contents and strategies for annual or classroom planning. But reflection during action is not interiorized. And reflection after action is, many times, performed only when there is lesson observation, by a supervisor. It is clear that teachers make comments like “The lesson went well” or “This lesson could have been better” or yet “Students didn’t participate today”. But this is not a grounded reflection. These comments frequently heard in the teachers’ room, soon are forgotten and nothing changes”.

Previous examples show that, according to the perceptions of the supervisors, there is some resistance of teachers towards reflection after action, mostly, in the moment of performing

evaluation. Both quoted supervisors underline that reflection processes are not still interiorized by the teachers. Very often, they are reduced to a utilitarian reflection used to plan and perform the activities. Being so, teachers should be conscious about the potential of practice reflection.

**Table 5. Identification of the potential of practical reflectivity.**

Category 2 Potential of the practical reflexivity	
Subcategories	Oc.
Substantiation of decision-making	11
Contextualization of pedagogical action	10
Relation between theory with practice	9
Pedagogical update	8
Grounded reformulation of action	7
Questioning of teachers' action	6
Integration in a process of investigation- in- action	6
Diversification of educational strategies	5
Evaluation of the teaching process	3
Promotion of the student's development	2

For category 2, potential of practical reflectivity, results are presented in table 5, totalizing 67 occurrences. Substantiation of decision-making is referred by the majority of the supervisors (11) properly contextualized (10), as it is the relation between theory and practice (9). It is still meaningful the influence of a reflective attitude in the pedagogical update (8). According to the supervisors, teachers' reflection does not always promote a grounded reformulation of action (7), which means that it is still difficult the change of teaching methods and the diversification of educational strategies (5) according to an integrated reflection in the learning and teaching process. In agreement, the potential of questioning teachers' action (6), together with the integration in a process of investigation- in- action (6) are not always taken into account. Regarding the evaluation of the teaching process (3) it is mentioned by only a few supervisors showing not the potential, but the fragilities of the teacher's procedural reflection, still very restricted to the planning and grounding of the activities.

One aspect that can be highlighted is the focus attributed to the potential of teachers' reflection over the student's reflection. Indeed, the focus on the student only occurs for one single subcategory of analysis, promoting the development of the student (2). Despite the fact that innumerous authors mention joint development of teacher and student as a potential of reflection, such is not confirmed by supervisors in their discourses or by teachers in their questionnaires. Some significant excerpts related to this category and respective subcategories, taken from the discourses of the supervisors are transcript bellow:

**Sup. 5:** "For both teachers and supervisors, reflection is not easy. For teachers, the majority of the classes are heterogeneous, so it becomes difficult to reflect on pedagogical decision-making, considering the context and the difficulties of the students. (...) For the supervisors, it

is also very difficult to lead teachers to reflect about their performance, when there is classroom observation (...).”Unfortunately, some teachers don’t accept criticism and what could be a productive reflection, becomes for all a source of problems.”

**Sup. 9:** “Reflection must relate theory to practice. Sometimes I consider that we don’t worry enough about pedagogical updating, unless when there are training courses. Much of what teachers and supervisors do is already internalized, year after year, always the same, with no variation (...) Reflection can help us to see what needs change and to vary strategies. (...) Although the time that teachers have available for research is not much, the ideal is for each teacher to do a self- investigation- in- action and is able to question the practices”.

These examples reveal the potential of reflection, both for teachers and supervisors. Potential of reflection in decision-making, in the relation between theory and practice, in the relevance given to context, in investigation- in- action and in the questioning of the practices are highlighted, meeting the perceptions of the teachers who participated in the enquiry by questionnaire. Nonetheless, the difficulties experienced by supervisors are clear in the discourse of the first quoted supervisor, when those difficulties promote a reflection that challenges attitudes which are rooted among teachers. Therefore, it is essential to participate in the construction of a reflective teacher.

**Table 5. Description of the profile of the reflective teacher.**

<b>Category 3 Profile of the reflective teacher.</b>	
<b>Subcategories</b>	<b>Oc.</b>
Reflection before, during and after action	12
Reflection as a basis for action reformulation	10
Collaborative reflection among peers	9
Sharing the work in community	8
Teacher as researcher of the practices	7
Work on research in action	7
Commitment to auto and hetero learning	5
Lifelong learner	2

For the third category, profile of the reflective teacher, results are inserted in table 6, totalizing 60 occurrences. For the supervisors, it is clear the predominance of systematic reflection, before, during and after action (12) as the basis of action reformulation (10), performed collaboratively among peers (9). This reflection implies sharing the work within the community (8), of a teacher investigator of practices (7), capable of developing a work of investigation-in-action (7). Finally, the profile of the reflective teacher presupposes commitment to auto and hetero learning (5), englobing continuous training, both formal and resultant of practice reflectivity, within a perspective of reflective school, in a learning community, to be undertaken throughout (2). This profile is outlined by supervisors in the following way:

**Sup.1:** “The reflective teacher is the one who is capable of thinking critically all the moments of the educational action, within a process of continuous questioning. He is capable of sharing

doubts and progression with his educational community.”

**Sup.6:** “The most significant feature of the reflective teacher is reflection before, during and after practices, in a way that he is able to maintain or change action. Most of all, it is important that after action, he is capable of investigating its effectiveness and ask: What do I need to change?”

**Sup.10:** “The reflective teacher works in team, investigates and listens to the opinions of students, teachers or supervisors. He is capable of changing his plan of action, based in authors, theories and especially in self action- investigation, in the classroom. He is an eternal learner, always in the search for a more effective strategy and a more attractive projects for his students”.

The profile of the reflective teacher, built by the supervisors, combines highly complex features, also referred to, though only partially, by teachers who participated in the enquiry by questionnaire. For that reason, the last supervisor to be quoted uses the expression “an eternal learner”, with the aim of highlighting the continuous search for professional development.

Relating to the previous question, the results concerning category 4, reflective improvement of professional abilities, are found in Table 7, totalizing 76 occurrences.

**Table 7. Description of the profile of the reflective teacher.**

<b>Category 4 Reflective Improvement of professional abilities</b>	
<b>Subcategories</b>	<b>Oc.</b>
Ability to question the practices	13
Ability to perform critical reflection	12
Ability to update pedagogical didactics	10
Ability of the teacher to work collaboratively	10
Ability to research in action	8
Ability to improve the quality of teaching	8
Ability to motivate the students	7
Ability to improve the quality of the teaching process	5
Ability to work with the students	3

In their perceptions, supervisors consider that a reflective teacher improves the ability to question the practices (13) and perform critical reflection (12). Accordingly, they state that reflection improves the ability to update pedagogical didactics (10) and to research in action (8). In general, they point out the ability to improve the quality of teaching (8) and the student's motivation (7). Contrasting with the subcategory teachers' ability to work collaboratively (10), collaborative work with the students (3) registers low values.

Some parts of the interviews made to the supervisors are transcript bellow. These underline the importance of the improvement of professional abilities, aiming a teaching and learning process centered in the student.

**Sup.4:** “Undoubtedly, the teacher can, through the means of reflection, improve his professional abilities and, at the same time, go beyond his reflection. The important thing is to never forget that the aim of teaching is to develop the student and his training as a citizen. “

**Sup.7:** “A reflective teacher searches knowledge, and does not wait for training sessions (...) He searches new theories, new authors, therefore the ability to update in pedagogical terms is essential to his professional development. Along with many other abilities (...) such as to know how to work as a team with teachers and students, or to be able to investigate in the classroom. It does not mean that this is easy, but reflection applied to investigation is a strategy for improvement. “

**Sup.8:**” Without constant professional reflective improvement there is no evolution in teaching. A teacher who reflects has an active attitude and manages to improve the quality of classroom work and motivate students. But, for that, further investigation and collaborative work are needed, instead of the individual work that is still carried out in so many schools.”

The words of the supervisors point to the need of deeper involvement of teachers in their professional improvement. The teacher mustn't be «only waiting», but should work actively contributing to higher quality of the teaching-learning process in classroom. Once again, and for all the mentioned abilities, reflection emerges as more important than action.

## CONCLUSION

The study confirms the central role of reflective practice by teachers, before, during and after action, setting its professional development on a reflective and learning School. Following this new pattern for professional learning, reflection-in-action becomes a strategy and tool for training and teaching improvement. This research demonstrates that both teachers and supervisors perceive and value contextualized reflection, implemented in a systematic and collaborative way, through questioning and investigation-in-action. So, the contribution of reflection to the quality of practice and teaching development, based on the reflective improvement of professional skills in different contexts, is evident.

However, in spite of recognizing the potentials of reflection, teachers are still distant from a reflective teacher profile. As it is recognized by them and confirmed by their supervisors, there is still a long way to go, due to the high complexity of the job itself.

First, reflection continues connected to curricular features of selection and substantiation of contents and activities. Although teachers reveal awareness of the advantages of reflection-in-action, the results show that they don't always practice it, once that the reflection processes are not interiorized. As a consequence, instead of becoming a recursive reflection process of reflection, before, during and after action, it is too much centralized on planning and unsystematic interventions. In addition, a certain resistance to reflection after action, related to teachers' evaluation, is confirmed.

Secondly, a shared vision of action is not always perceived in terms of collaborative work among peers, based on reflection and on practice questioning. Moreover, there are still some teachers who understand the teaching practice as the center of teaching knowledge, connected with the construction of the student's learning.

Thirdly, reflective questioning should be anchored on investigation-in-action. Nevertheless, the investigation of practices is unusual among teachers, since it demands investigation skills, a theoretical and practical framework, comprehensive of essential authors and theories for

research in the field of Educational Sciences. As this knowledge is only dominated by a few teachers, who usually detain Masters or PHD qualifications, an insignificant value given to investigation and pedagogical update is observed.

In spite of the analyzed constraints, it is important to outstand that, in general, teachers recognize the need of commitment to reflection in community, allowing the development of all the educational actors, teachers and students, in a school perceived as a learning educational community.

Finally, the study enables to conclude that the essence of practical reflectivity is set on the group's interpretation of every day pedagogical experiences and on collaborative work, as paths of creation of the learning community. Thus, the role of reflective teacher, who is able to evaluate and undertake in a sustained and organized way a quality teaching-learning in classroom, is essential.

In a future perspective, the role of the supervisor is also emphasized, for the influence he has and will continue to have in the construction of the reflective teacher. So, the praxis will be able to conceive an interrelation development between those who are implied, and interactive with the context where they move, in order to obtain practice improvement in school community.

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## Determinants of Life Partner Choice for University Girls

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### ABSTRACT

This study examined the Determinants of life partner choice for university girls. Survey data drawn from the 100 girls in Saudi Arabia. The measures of study were demographic data form for girls, Determinants of life partner choice questionnaire. Results indicated that the first determinants importance of life partner choice for girls was health, personal was the second, Aesthetic was the third, followed by Religious, social, cultural and Economic, there was negative correlation between age and cultural determinants of life partner choice, there was no correlation between age and determinants of life partner choice, there was no correlation between family size and determinants of life partner choice, there was no correlation between father's education and determinants of life partner choice, there was no correlation between mother's education and determinants of life partner choice, there was positive correlation between income and health determinants of life partner choice, there was no correlation between income and determinants of life partner choice, there were differences between town and village in social determinants, where the girls who living in villages were better than Girls who living in cities, there were no differences between town and village in determinants of life partner choice, there were differences between girls who are studying theoretical study and girls who are studying practical study in aesthetic determinants, where practical study was better than theoretical, there were no differences between the practical and theoretical study of girls in Determinants of life partner choice.

**Key Words:** determinants, life partner choice, university girls

### INTRODUCTION

Family is nucleus of society growing in it children until reaching puberty and maturity and since the birth, child receives a summary of experience of his family and the family with social concept works on her continued her survival and ingrained and stability by continuing social and cultural relations, and through education and training and family organizes child behavior and monitors his relations with other members of society, and family with simple form consists of husband, wife and unmarried sons, the family is the first cell in the society which is the basic unit of social construction and family Don't compose expect with marriage (Al ksas, 2008). Marriage is fungal and thinking about it is a request of healthy growth because it works to achieve a group of psychological, biological and social functions, including: forming a family, and having children, and to achieve psychological and social security, and to satisfy sexual instincts in legal (Anzi, 2009). So it is the legitimate relation which possible between women and men in family and society, which may be achieved through satisfaction, happiness and marital interaction, and this may be a relative, because this relation may have some psychosocial and social problems that lead to dissatisfaction (Al Gamaly, 2008). Human don't care in his life with any something, as much as caring his partner in life and a partner in the construction of marital home and happy family and perhaps marriage is the most important event in human life for man or woman, but there is a basic process before marriage, it is the choice of partner, good choice determines the future of marriage, the future of family and all society (Al Saaty, 2005). The most important two decisions in the human life is the choice of job and partner (husband or wife) and the final decision is a psychological process

intervention in the responsibilities of the individual at his psychological health development, and in this context the choice of partner is the most important thing to research and study (Shamsan, 2009). marriage customs in Arab society depending on that mothers, sisters, relatives selecting a wife, and this is reasonable in a society respects its values and habits, but this does not prevent the man who get marry to choose his partner, and find the appropriate qualities such as her beauty or thinking or behavior or otherwise (Al Shamsi, 2013). Wife also dreaming who can understood her with her personality and privacy, and give her mind and respect and saturation of each intimate wishes which do not appear otherwise with legal marital relation, if husband failure in understanding the needs of her wife, and insist to treat her according to the prevailing stereotypes about women, we find him introducing things to her, he believes it will delight her, while she was waiting from him introducing other things to her, and vice versa on the part of women to men (Bassoal, 2008).

A happy marriage is a relative concept is not easy to measure and circulated, which means pleased with couple about their married life in general, marital happiness linked to successfully marital relation in their functions and tasks, such as secure the co-existence, housing and love, and do the psychological, emotional, sexual to them, as well as in having children and raising them, and do the requirements of the house and living, and achieve the requirements and several social roles (Mslaty, 2009). The marriage is the most important social systems, and the most impact on human life and society, it is the link between two sexes, and achieve the safety of social conditions and the survival of species, and improve the relations between men and women to the level of legitimacy, and regulating those relations according to human values, and with marriage the family will be composed, which is the basic unit of all societies, and a lot of scientific research were emphasized that the selection of a partner comes as the first step in influencing the efficiency of family formation (Al-Belhan, 2008). There are many of youth who will get marry if you asked him about the purpose marriage, you may not find has a clear answer to your question, or you may find it understands marriage with misunderstanding, each of the spouses and parents of wife the right to choose the matching and equivalents to her and achieve with him stability and harmony in the family and avoid the great discord and damage and humiliations, and that was the best and the first is that there is a convergence between the couple in the lineage, age and culture to avoid a gap between them, may be the cause of conflict and discord (Hmish, 2009).

The convergence and harmony to achieve marital compatibility keep the cohesion of married life and, by contrast, the consensus loss of some couples is one of the most important causes problems, and may not be causes physical, social or intellectual, but the absence of an understanding and harmony, this item requires flexibility in dealing patience and careful, and may not be achieved quickly, but requires some time and living together until both husband and wife discover the other character and begins to deal with it (Al Shamsi, 2013). And public life full of problems and pains and tragedies caused by marital life failure, and that could prevent if the man or woman choose a good partner, and every man or woman must have enough awareness to the dimension of step of marriage selection (Al saaty,, 2005). The urgency in the approval or choose by couple and the lack of investigation and accuracy in ask each other about other and his family is the most important reasons to fail marriages, you may find that the parents of wife are investigating thoroughly, but the parents of husband ask only about the easy things and phenomenon. In contrast, men or women exaggerate in the qualities required and whenever there is a man want to marry woman, they apologized so their age increased, and each other begin to offering concession cause a bad consequences, then the trip will be the most painful and ultimately pain final (Al-Amari, 2010). The lack of efficiency in the selection of a partner leads to alienation and cruelty, and have each other exalted over the other with his money or lineage or age or level of education, which leads to disharmony and

spacing (Hmish, 2009). Success in marriage is a mainstay in the integrity of the life, in other way, the failure in marriage is often causes weak souls and the corruption of life and due to bad choice of partner, a bad choice linked to the difference in multiple aspects such as moral principles and literature or differing behavior or social and economic status or education or religion or other aspects of the position, including a negative impact on the interaction between the two couple and family in general (Al Belhan, 2008). Create a marriage or a happy marital relation between both men and women is a complicated thing or can be described as a double-edged sword, either success and calm family and either divorce which leads to splits in the family, some may ask if there was a way to maintain this eternal relation, the relation between man and woman is a contract and when this the contract agreement invalidated, the communication are being chill and thus adversely effect on relation with various aspects (Al Daef, 2010). The good and rational choice, leading to the decision to marry, it would serve to deepen the confidence of all men and woman that new life waiting them and they carry all positive intentions and mental preparations for the beginning of this stage in their lives and not to leave the selection process for the parents only, but should take responsibility and make the effort to investigate the required specifications that will achieve the initial assurances that indicate that there is consensus in the attributes and behavior among young people (Al Shamsi, 2013). It is clear from the foregoing that the marriage requires from the couple high adaptive ability and a good understanding of the marital relation, and if diminished or extinguished ability may lead to various problems and difficulties that impede their marital adjustment (AL Gamaly, 2008). Many marriages are exposed to emotional drought, who leads the relationship to fail, it may be a bad choice is an essential factor for the occurrence, and a bad choice linked to the difference in various aspects such as ethical principles and decency or social, economic or education or religion or other aspects of the place, including a negative impact on the interaction between the couple, it must be the right choice for a life partner, also the most important images of social choice, and the first thing a person does after making a marriage decision is to think of who will marry and shared his life, and determine the specifications of life partner (AL Anzi, 2009). It is clear that there are differences between people, every individual is different from the others in his level of (mental - personal - physical - emotional or mood) that would stabilize and the continuity of marriage and achieve emotional warmth of the couple and find suitable environment to raise children properly, bad marital choice may lead to a mismatch between couple and failure of marriage and then divorce happen (Al Belhan, 2008). Most of the previous studies on the determinants of life partner choice association with many variables in the choice, such as economic, social, personal, aesthetic, religious, cultural and health determinants. The life partner choice process is a mental process which human uses his mind when examining alternatives, so the four guiding research questions were as follows:

*Research Question 1: What are the determinants of life partner and their order according to their priorities of university girls?*

*Research Question 2: Is there a relationship between demographic variables and the determinants of life partner choice?*

*Research Question 3: Is there a difference in the degree of life partner choice related to some demographic variables?*

## **Hypotheses**

*Hypothesis 1: There is no statistically significant correlation relation between the determinants of life partner choice and their dimensions (economic determinants, social determinants,*

personal determinants, aesthetic determinants, religious determinants, cultural determinants, health determinants), and some demographic variables (age, family size - parents educational level - monthly income).

*Hypothesis 2:* There are significant differences in the determinants of life partner choice and their dimensions related to study type.

*Hypothesis 3:* There are significant differences in the determinants of life partner choice and their dimensions related to place of residence.

To study these hypotheses we conducted comparative descriptive analyses

## METHOD

### 3.1 Participants

The sample consisted of 100 of university girls, who studying practical and theoretical, continuing in study and unmarried, from various social and economic levels, which selected in purposive way, the application was at Taibah University in Medina of Saudi Arabia on November 2014 AH.

### 3.2 Measures

The researchers designed the following data collection tools:

General data for the student form. It have included questions to indicate the age of girls with ( $M= 21.12$ ,  $SD = 1.486$ ), the college were divided into two categories (Practical and Theoretical) encodes (1-2) respectively, then the place of residence and divided into two categories (Town - Village ) encodes (2-1) respectively, and the size of the family is also divided into categories (small family - moderate family - large family) encodes (3-2-1) respectively, and educational level both father and mother were divided into categories (do not know read and write - Intermediate Certificate - Certificate of High school or equivalent - institutes - university Graduate) encodes (1-2-3-4-5-6), respectively, monthly income was divided into categories (less than 2000 - 2000 to less than 4000 - 4000 to less than 6000 - more than 6000) encodes (1-2-3-4), respectively. Determinants of life partner choice questionnaire. The questionnaire included 44 phrases divided by 7 dimensions: economic determinants, social determinants, and personal determinants, aesthetic determinants, religious determinants, cultural determinants, health determinants.

Economic determinants: included 6 phrases ( $\alpha = .70$ ) included information on the level of economic and house level of life partner. And the answer is on a bilateral scale (yes - no) encodes (2-1).

Social determinants: included 6 phrases ( $\alpha = .80$ ) included information on the social relations of the life partner, number of friends, polygamy, and the quality of the relationship between the couple. The answer is on bilateral scale (yes- no) encodes (1-2).

Personal determinants: included 7 phrases ( $\alpha = .90$ ) about life partner information in terms of educational level and the age difference between the couple, the way of marriage and engagement period. The answer is on bilateral scale (yes- no) encodes (1-2).

Aesthetic determinants: included 6 phrases ( $\alpha = .85$ ) on the physical qualities of a life partner. The answer is on bilateral scale (yes- no) encodes (1-2).

Religious determinants: included 6 phrases ( $\alpha = .85$ ) described the case of a life partner the

religious aspect. The answer is on bilateral scale (yes- no) encodes (1-2).

Cultural determinants: included 6 phrases ( $\alpha = .90$ ) described cultural of life partner. The answer is on bilateral scale (yes- no) encodes (1-2).

Health determinants: included 7 phrases ( $\alpha = .90$ ) described health of life partner information in general. The answer is on bilateral scale (yes- no) encodes (1-2).

### 3.3 Analytic Strategy

1. Percentages and duplicates
2. The mean and standard deviation
3. Cronbach's alpha coefficient.
4. Spearman coefficient
5. Pearson correlation coefficient
6. T test
7. One way ANOVA

**Table 1. Girls Demographic Variables, Girls Family Relations and Girls Reproductive Health in Egypt and Saudi Arabia: Descriptive Statistics**

Variables	N=100				
	M	SD	Range	n of items	$\alpha$
1. Age	21.12	1.486	18-27	-	-
2. Family size	-	-	1-3	-	-
3. Father's education	-	-	1-6	-	-
4. Mather's education	-	-	1-6	-	-
5. Income	-	-	1-4	-	-
6. Economic determinants	10.07	0.998	1-3	6	.70
7. Social determinants	10.61	1.081	1-3	6	.80
8. Personal determinants	11.58	1.273	1-3	7	.90
9. Aesthetic determinants	11.08	1.002	1-3	6	.85
10. Religious determinants	10.84	1.061	1-3	6	.85
11. Cultural determinants	10.47	0.904	1-3	6	.90
12. Health determinants	13.17	1.111	1-3	7	.90
13. Determinants of partner choice	77.82	3.778	44-132	44	.90

## RESULTS

*Hypothesis 1:* There are no statistically significant correlation relationship between the determinants of life partner choice and their dimensions (economic determinants, social determinants, personal determinants, aesthetic determinants, religious determinants, cultural determinants, health determinants), and some demographic variables (age, family size - parents educational level - monthly income).

Table 2. showed that there was no correlation between age and determinants of partner choice with their dimensions (economic determinants, social determinants, Personal determinants,

aesthetic determinants, religious determinants and health determinants), there was negative correlation between age and cultural determinants  $P > .05$ .

There was no correlation between family size and determinants of partner choice with all their dimensions (economic determinants, social determinants, personal determinants, aesthetic determinants, religious determinants, cultural determinants, health determinants).

There was no correlation between academic level and determinants of partner choice with all their dimensions (economic determinants, social determinants, personal determinants, aesthetic determinants, religious determinants, cultural determinants, health determinants).

There was no correlation between father's education and determinants of partner choice with all their dimensions (economic determinants, social determinants, personal determinants, aesthetic determinants, religious determinants, cultural determinants, health determinants).

There was no correlation between mother's education and determinants of partner choice with all their dimensions (economic determinants, social determinants, personal determinants, aesthetic determinants, religious determinants, cultural determinants, health determinants).

There was no correlation between income and determinants of partner choice with their dimensions (economic determinants, social determinants, personal determinants, aesthetic determinants and religious determinants), there was positive correlation between income and health determinants  $P > .05$ .

*Hypothesis 2:* There are significant differences in the determinants of life partner choice and their dimensions related to place of residence.

Table 3. Showed that there were no differences between girls who residing in villages and Girls who residing in cities at determinants of partner choice and their dimensions (economic determinants, personal determinants, aesthetic determinants, religious determinants, cultural determinants and health determinants).

There were statistically significant differences between town and village in social determinants  $P > .05$ , where the average degree of girls who living in villages was better than girls who living in cities.

**Table 2. Demographic Variables for Girls, determinants of partner choice: Correlations (N = 100)**

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Age	-												
2. Family size	0.312**	-											
3. Father's education	0.127	0.052	-										
4. Mather's education	-0.083	0.094	0.560**	-									
5. Income	0.112	-0.052	0.440**	0.369***	-								
6. Economic determinants	0.040	0.145	0.074	0.175	0.071	-							
7. Social determinants	-0.121	-0.147	-0.140	-0.174	-0.023	-0.102	-						
8. Personal determinants	0.147	0.057	0.149	0.126	0.133	0.207*	0.138	-					
9. Aesthetic determinants	-0.032	-0.090	0.008	0.117	0.023	-0.139	0.214*	-0.007	-				
10. Religious determinants	0.047	-0.104	0.023	-0.006	-0.008	0.032	0.254*	0.189	0.170	-			
11. Cultural determinants	-0.202*	-0.092	-0.069	-0.045	-0.122	-0.012	0.223	-0.030	0.091	0.233*	-		
12. Health determinants	0.080	-0.086	-0.016	0.030	0.199*	-0.195	0.161	0.239*	0.281**	0.224*	0.067	-	
13. Determinants of partner choice	0.029	-0.45	0.050	0.057	00.074	0.222***	0.552***	0.528***	0.451***	0.571***	0.436***	0.458***	-



**Table 3. Structure of determinants of partner choice related to Residence**

Variation source	City (T)		Village (V)		Independent samples <i>t</i> test	
	<i>N</i> = 93		<i>N</i> = 7		<i>t</i> value	T VS V
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
Economic determinants	10.09	1.007	9.86	0.900	0.583	<i>ns</i>
Social determinants	10.55	1.079	11.43	0.787	-2.113	*
Personal determinants	11.60	1.270	11.29	1.380	0.632	<i>ns</i>
Aesthetic determinants	11.12	1.009	10.57	0.787	1.399	<i>ns</i>
Religious determinants	10.83	1.090	11.00	0.577	-0.412	<i>ns</i>
Cultural determinants	10.43	0.914	11.00	0.577	-1.622	<i>ns</i>
Health determinants	13.20	1.089	12.71	1.380	1.127	<i>ns</i>
Determinants of partner choice	77.82	3.831	77.86	3.237	-0.027	<i>ns</i>

Note: coefficients not marked with asterisks were not significant

\**p* < .05.

*Hypothesis 3:* There are significant differences in the determinants of life partner choice and their dimensions related to study type.

Table 4. Showed that there were no differences between Girls who are studying theoretical study and girls who are studying practical study at determinants of partner choice with their dimensions (economic determinants, Social determinants, personal determinants, religious determinants, cultural determinants, health determinants), where the average degree of practical study was convergent with theoretical study. There were statistically significant differences between girls who are studying theoretical study and girls who are studying practical study in aesthetic determinants *P* > .01, where the average degree of practical study was better than theoretical.

**Table 4. Structure of determinants of partner choice related to Study Type**

Variation source	Practical (P)		Theoretical (T)		Independent samples <i>t</i> test	
	<i>N</i> = 77		<i>N</i> = 23		<i>t</i> value	P VS T
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
Economic determinants	10.05	1.050	10.13	0.815	-0.330	<i>ns</i>
Social determinants	10.65	1.073	10.48	1.123	0.664	<i>ns</i>
Personal determinants	11.66	1.382	11.30	0.765	1.186	<i>ns</i>
Aesthetic determinants	11.23	0.902	10.57	1.161	2.913	**
Religious determinants	10.91	1.054	10.61	1.076	1.194	<i>ns</i>
Cultural determinants	10.40	0.907	10.70	0.876	-1.370	<i>ns</i>
Health determinants	13.26	1.056	12.87	1.254	1.487	<i>ns</i>
Determinants of partner choice	78.17	3.891	76.65	3.171	1.706	<i>ns</i>

Note: coefficients not marked with asterisks were not significant

\*\**p* < .01

## DISCUSSION

The first determinants importance of life partner choice for girls was health, personal was the second, Aesthetic was the third, followed by Religious, social, cultural and Economic, because girls want a good married life and birth healthy children.

Some studies showed that the most common marital selection criteria for youth were religious commitment, the reputation of family, beauty, morality, income and afford ability respectively (Al-Anzi, 2009). The most important determinants among females were emotions (Al Zamil,

2007). University youth prefer mutual attraction, good mood, good literature and morals, religious commitment and good health respectively (Al Shamsan and Darwish, 2009). The favorite determinant for university girls was economic aspects (Asma Al Rwaili, 2006). The factors leading to marriage were religious factor, health factor, social factor, psychological factor and economic factor respectively (Nazmi Abu Mustafa, 2007).

Marital adjustment elements are arranged from the viewpoint of university girls as follows: emotional maturity, social and emotional support of the family, religious element, cultural element, convergence in age, educational level and economic level (Wafaa Abdul Razak, 2009). The older girls in college waived for cultural determinants that are interested in the life partner more than younger girls, as a result of few opportunities to marry because of the customs and traditions of Arab societies, while age had not any an influential role on the determinants of economic factors, social, personal, aesthetic, religious and health determinants. This result agreed with Nazmi Abu Mustafa who showed that There were no differences between the factors leading to marriage according to age (Nazmi Abu Mustafa, 2007).

There was no role of Number of members of the girl's family or educational level of her Parents in determining the determinants of life partner and their dimensions, while the increase of the monthly income for a family girl had a positive role in health determinants for a life partner, Some studies showed that There were no differences between the factors leading to marriage according to variables: age, educational level and income level, while found differences in health factor according to income in favor of the lowest income (Nazmi Abu Mustafa, 2007). When parents' education increased, Awareness of parents in life partner choice was the best (Asma Al Rwaili, 2006).

Girls who live in villages more capable, deeper and more positive in social determinants than girls cities. This may be due because the villages are still is keen on the customs and traditions of marriage, while the cities affected by societal development and opening to the outside world The university girls in the practical study were more ability to develop aesthetic determinants than girls in theoretical study.

## CONCLUSION

Establishment family Counseling Centers, providing extension services of marriage. Raise the community awareness of the importance of proper marital choice by do many of educational symposiums for all segments of society. Recommendation that the curriculum include in secondary education and university courses and some topics about family and marriage. Do more research to choose a life partner and family formation.

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## Personality Traits and Administrative Effectiveness of Secondary School Principals in Southwestern Nigeria

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### ABSTRACT

The thrust of the paper was to investigate the personality traits and administrative effectiveness of secondary school principals in Southwestern Nigeria. This was with a view to improving administrative skills of secondary school principals. The sample size comprised of 53 principals and 821 teachers who were selected from 53 public secondary schools from four states in Southwestern Nigeria using multistage and purposive sampling techniques. Principals' Personality Traits Questionnaire" (PPTQ) and Principals' Administrative Effectiveness Questionnaire" (PAEQ) were the instruments used to collect data from the respondents. Descriptive statistics and chi-square statistics were employed to analyse the data. The results showed that 65.8% of teachers indicated that their principals were very effective. The mostly exhibited personality trait as reported by principals (56.6%) was conscientiousness. Also, the result showed that there existed a significant relationship between personality traits and administrative effectiveness of secondary school principals ( $\chi^2 = 42.4, p < 0.05$ ). The study concluded that conscientiousness was the necessary personality trait which predisposed secondary school principals to be effective in discharging their administrative duties.

**Key words:** Personality traits, principals and administrative effectiveness

### INTRODUCTION

In secondary schools in Nigeria, the administrative efforts of principals are necessary in realising schools' goals and objectives. To a considerable degree, principals play multifaceted roles in setting the direction of secondary schools. What they say, do or think may have a significant effect on school performance. This is because their abilities are central to the task of building schools that could promote effective teaching and learning for all students. Hence, they are at the central point within the schools to influence the quality of individual teachers, instruction, the level of students' performance, and the efficiency in the functioning of school.

The hallmark of achieving an effective school begins with creating conducive school environment. It is believed that school is essentially a co-operative organisation, in which every member big or small, high or low has vital role to play. In this situation, the responsibility lies on all stakeholders in the school to work together with their school principal in order to provide a safe school environment that will facilitate meaningful instructional activities. However, a principal cannot achieve this without being able to perform his internal relations and organisational roles effectively. It is believed that an effective principal should be someone who is able to promote an atmosphere of respect and trust and makes the teachers and students have a sense of belonging.

According to Adeniyi (2012), administrative effectiveness referred to as the ability of school principals to carry out administrative tasks related to instructional management, internal relations, organisation management, administration, students' performance and school community relations toward achieving the school goals and objectives. It is the degree to which

secondary school principals achieve goals and objectives of their schools. In view of this, the tasks of proactive principals involve, among other things, coordinating both human and material resources available and using them systematically for the achievement of educational objectives.

The study of Oyedeji and Fasasi (2006), regarded a school principal as the chief executive of the school, who is responsible for all that happens in the school. They are of the opinion that a "school growth plan" is directly related to the identification, attraction, development and appointment of high performing school principal. The position he occupies places him in a great position to coordinate the entire school operation and moves it forward. More importantly, it is the administrative responsibility of a school principal to strive at creating a climate that will foster students' and teachers' growth. As a principal in the school, he needs to work with teachers, empowers them and gets them involved in developing wholeness, connectedness at work, deeper values, initiative, and team spirit in a way which benefits the school as a whole.

Arising from the above salient points, it can be inferred that the administrative responsibilities of secondary school principals cannot be under-estimated. Principals are a responsible avenue for the smooth running of schools. Consequently, for any principal to excel in his official duties, such a principal must possess certain qualities. For instance, an effective principal must be someone who is pragmatic, dynamic, warm-hearted, attentive, emotionally mature and of pleasant personality. Besides, an effective and efficient principal is regarded as a standard-setter and a crucial component of the social system. However, a school without the right type of leadership can best be described as a scene of confusion and chaos. According to Ross and Gray (2006) and Ibukun (1997), when leadership in an organisation is effective, there is progress but when the leadership is defective, the organisation declines and decays.

Considering the above, it is assumed that the school needs leadership with proven characters, a principal who is cool-headed, collected and who is ready to carry along his subordinates in discharging his professional functions. However, the study has shown that some of the principals in secondary schools in some states in Southwestern Nigeria did not possess required skills and personal attributes in school management. For example, Okotoni and Okotoni (2003) remarked that the attitudes of school principals in Osun State in Nigeria have resulted in the prevailing administrative problems in most secondary schools in the state. According to these authors, the administrative ineffectiveness of secondary school principals has resulted in high rate of conflicts in secondary schools. In furtherance of this, Arikewuyo (2009) confirmed that principals' effectiveness has resulted in poor performance of students in their examinations. The above result suggests that there is a link between behavioural characteristics and the principals' performance. Based on this, it is pertinent to ascertain the extent of relationship between personality traits and principals' administrative effectiveness.

Owuamanam and Owuamanam (2002) defined personality as the attributes of the individual which make him unique and different from other individuals. To Klein (2002), personality is an individual's characteristic patterns of thinking, feeling, and behaving. In agreement with the above definitions, Oladele (2004) opined that personality is the unique and distinctive characteristics which set a person apart from another. Warren (2002) concluded that personality should include how a person acts, the impression that a person creates in others, and the person's typical patterns of behaviour.

In their own submission, Saucier and Goldberg (1998) indicated that there are five models of personality traits. These dimensions are referred to as the "Big Five" and they consist of

openness; conscientiousness, extraversion, agreeableness and neuroticism. Every leader has one of these traits dominating his personality. The type of trait that is dominating in one's personality will determine his behaviour and more importantly, his administrative style. For instance, Weisenbach (2004) is of the opinion that a principal with highly dominant (extraversion) trait appears to be unable to create favourable school climate. Furthermore, Loos (2001) believed that the principal with open (openness) personality can increase the overall positive climate. Based on this, it is pertinent to find out which of the traits has the greatest influence on administrative effectiveness of a principal.

In their studies, Matthewson (1995) and Marzano (2003) indicated that personality traits have a relationship on the likelihood of school principals engaging in shared decision making. While in their own views, Coleman (2005) and Maciel (2005) established that leadership behaviour has positive impact on school effectiveness and the implementation of professional learning communities. To corroborate the above, Avery (2004) concluded that traits that appear effective within one situational context may be seen as ineffective in another situation. Hence, Reave (2005) summed it up by asserting that people who are effective as leaders tend to exhibit certain traits. From the above findings, it is believed that not all traits are equally effective in predicting administrative effectiveness of principals. Hence, it seems to be unclear as there are variations and contradictions in the empirical results regarding which of the particular personality traits can promote principals' effectiveness.

Also, Buckmaster (2008) opined that extraversion is related to leadership effectiveness. According to Buckmaster, people that are considered as extraverts are sociable, assertive, and energetic people. They enjoy interacting with others in their environment and demonstrate self-confidence. Because they are both dominant and sociable in their environment, they emerge as leaders in a wide variety of situations. He went further by saying that out of all personality traits, extraversion has the strongest relationship to both leader emergence and leader effectiveness. In addition, Buckmaster, (2008) believed that conscientiousness and leadership effectiveness are related. Again, Buckmaster (2008) revealed that conscientious people are organised, take initiative, and demonstrate persistence in their endeavours. They equally confirmed that conscientious people are more likely to emerge as leaders and be effective as leaders. However, Judge, Bono, Ilies, and Gerhardt, (2002) submitted that some traits are negatively related to emerging as a leader and being successful as a leader. The scholars revealed that agreeable people possess the attributes of being modest, good natured and avoid conflict, hence are less likely to be effective in their administrative roles. It can be inferred from the above that not all traits are equally effective in predicting leadership potential across all circumstances. Some organisational situations allow leader traits to make a greater difference (House, & Aditya, 1997). For instance, in small, entrepreneurial organizations where the leaders have a lot of leeway to determine their own behaviour, the type of traits leaders have may make a difference in leadership potential. In large, bureaucratic and rule bound organisations such as the government and the military, a leader's traits may have less to do with how the person behaves and whether the person is a successful leader (Judge, et.al 2002).

Consequent upon this, the study was conducted to establish the administrative effectiveness of secondary school principals as well as examine the influence of personality traits on the administrative effectiveness secondary school principals in Southwestern Nigeria.

## Research Objectives

- a. determine the administrative effectiveness of secondary school principals in Southwestern Nigeria;
- b. investigate the personality trait that is mostly exhibited by secondary school principals; and
- c. examine the relationship between personality traits and administrative effectiveness of secondary school principals.

## Research Questions

1. How effective are the secondary school principals in Southwestern Nigeria in discharging their administrative duties?
2. Which of the personality traits is mostly exhibited by secondary school principals?

## Hypothesis

There is no significant relationship between personality traits and administrative effectiveness of secondary school principals in Southwestern Nigeria.

## METHODOLOGY

The study employed the descriptive survey design. The population for the study consisted of principals and teachers in secondary schools in Southwestern Nigeria. The sample size comprised of 53 principals and 821 teachers who were selected from 53 public secondary schools. The multistage and purposive sampling techniques were employed to select the study sample. Four states were selected from the six states in Southwestern Nigeria using simple random technique. From each state, five local government areas (LGAs) were selected using simple random sampling technique. Three schools were selected from each LGA using purposive sampling technique making a total of 53 schools. The principals and teachers were selected from 53 schools using purposive sampling technique. Purposive technique was used because only the principals and the teachers who have spent at least two years in their current schools could qualify for the study. Two research instruments used to collect data were: Principals' Personality Traits Questionnaire" (PPTQ) and Principals' Administrative Effectiveness Questionnaire" (PAEQ). PPTQ was a 40- item instrument adapted from Martson (1928), while PAEQ contained 48 items and was adapted from Arikewuyo (2007), Orange County Schools (2008) and Grissom & Loeb (2009). The Spearman Brown Coefficients and Spearman Brown Split-half reliability tests conducted on the instruments showed that PPTQ yielded results of 0.71 and 0.83 while, PAEQ had 0.95 and 0.90. Both at 0.05 level of significance. Descriptive statistics and chi-square statistics were employed to analyse the data.

**Research Question 1:** How effective are the secondary school principals in Southwestern Nigeria in discharging their administrative duties?

**Table 1: Descriptive Analysis of Principals' Administrative Effectiveness**  
**Principals' Administrative Effectiveness**

	Frequency	Percentage %
Not Effective	34	4.1
Moderately Effective	41	5.0
Effective	206	25.1
Very Effective	540	65.8
Total	821	100.0

Table 1 shows the responses of teachers on the administrative effectiveness of secondary school principals. The Table reveals that 65.8% of the teachers reported that their principals were very effective, 25.1% indicated that their principals were effective. On the whole, 5.0% of the respondents reported their principals to be moderately effective and the remaining 4.1% of the respondents revealed that their principals were not effective. This descriptive analysis shows that majority of the teachers reported that their secondary school principals were very effective in their administrative duties.

**Research Question 2:** Which of the personality traits is mostly exhibited by secondary school principals in Southwestern Nigeria?

**Table 2a: Descriptive Analysis of Personality Traits Mostly Exhibited by Principals (Principals' Perspective)**

Personality Traits	Frequency	Percentage (%)
Extraversion	8	15.1
Agreeableness	4	7.5
Conscientiousness	30	56.6
Neuroticism	2	3.8
Openness	9	17.0
Total	53	100.0

From Table 2a, 56.6% of the principals revealed that they usually exhibited conscientiousness trait. Nine of the principals, representing 17.0% reported that they possessed openness trait and 15.1% believed that they belonged to extraversion group. Also, 7.5% and 3.8% of the respondents indicated that they exhibited more of agreeableness and neuroticism traits.



**Table 2b: Descriptive Analysis of Personality Traits Mostly Exhibited by Principals (Teachers' Perspective)**

Personality Traits	Frequency	Percentage (%)
Extraversion	302	36.8
Agreeableness	123	15.0
Conscientiousness	270	32.9
Neuroticism	39	4.8
Openness	87	10.6
Total	821	100.0

Table 2b shows that 36.8% of the teachers believed that extraversion was the trait that was mostly exhibited by their principals. The teachers who indicated conscientiousness as the mostly exhibited trait were 32.9%. Also, 15.0% of the respondents reported that agreeableness trait was prevalent with their principals, while 10.6% and 4.8% disclosed openness and neuroticism as the prevalent traits among the secondary school principals.

**Hypothesis:** There is no significant relationship between personality traits and administrative effectiveness of secondary school principals in Southwestern Nigeria.

**Table 3: Chi-Square Analysis on Responses of Teachers to the Relationship between Personality Traits and Principals' Administrative Effectiveness**

	Ext	Agr	Con	Neu	Ope	$\chi^2$	p
Not Effective	6 17.6%	9 26.5%	5 14.7%	7 20.6%	7 20.6%	42.4	<0.05
Moderately	11 26.8%	6 14.6%	11 26.8%	6 14.6%	7 17.1%		
Effective	71 34.5%	26 12.6%	79 38.3%	6 2.9%	24 11.7%		
Very Effective	213 39.4%	86 15.9%	171 31.7%	20 3.7%	50 9.3%		
Total	302 36.8%	123 15.0%	270 32.9%	39 4.8%	87 10.6%		

Significant at  $p < .05$

Key: Ext = Extraversion, Agr = Agreeableness, Con = Conscientiousness  
 Neu = Neuroticism Ope = Openness

Table 3 shows the responses of the teachers on the relationship between each of the personality traits (extraversion, agreeableness, conscientiousness, neuroticism and openness) and administrative effectiveness of secondary school principals. It could be observed from the Table that 26.5% of the principals who had agreeableness trait were not effective, while 14.7% of the principals with conscientiousness trait were also classified not to be effective. Also, 39.4% and 31.7% of the principals with extraversion and conscientiousness traits were considered as being very effective in their administrative duties. The chi-square result of  $\chi^2 = 42.4$ ,  $df = 12$ ,  $p < .05$  indicated that there is a significant relationship. Hence, the hypothesis that

states that there is no significant relationship between personality traits and administrative effectiveness of principals is, therefore, rejected.

## DISCUSSION

One of the major findings of this study is that the secondary school principals were very effective in discharging their administrative functions. This result buttressed Adeniyi's (2012) studies that most of secondary school principals in Southwestern Nigeria were very effective. However, the studies that had previously conducted in Osun and Kwara States by Okotoni and Okotoni (2003) and Arikewuyo (2009) found that most secondary school principals were not effective in their administrative functions. Copland (2001) in his explanation believed that the principals are the leading figures in whatever happens in their schools. To this end, Tirozzi (2001) affirmed that for effective realisation of school policies, the management responsibilities should not be major task of the principal. Therefore, the problem of indiscipline in school goes beyond the ineffectiveness of principals. Principals alone should not be blamed for the state of the problems in secondary schools nowadays. Rather, the problems should be shared by all stakeholders (parents, teachers, students, principals and government) in secondary education. More importantly, leadership in education sector is a dynamic process where an individual is not responsible to shoulder the group duties, but actively enjoys the partnership and dedication of all the stakeholders in achieving schools goals and objectives. Hence, schools must be seen as an ecosystem where several stakeholders work together to build successful schools. Where there is no teamwork, the effective management of schools is impeded because the principal efforts only are not enough in producing the required result in the school. The major factor is that every stakeholder should develop a positive mindset to contribute its quota towards the realisation of school goals and objectives.

It has been shown in this study that conscientiousness and extraversion were the most prevailing personality traits among the secondary school principals. The results collaborate Martin's (2004) findings that leaders who are extraverted and conscientious are usually effective in their duties. In supporting this statement, Buckmaster (2008) believed that conscientious people are more likely to emerge as leaders and be effective as leaders. The above provides the credibility to the earlier established fact that most secondary school principals in Southwestern Nigeria were very effective. Arising from this finding, it is important to note that despite the fact that some traits are good in producing effective leaders, the traits such as agreeableness and neuroticism are negatively related to emerging as a successful leader. In view of this, it is good to identify the traits that differentiate leaders from non-leaders and use this for appointment purposes.

Finally, the results of the analysis of hypothesis show that there is a significant relationship between personality traits (extraversion, agreeableness, conscientiousness, neuroticism, openness) and administrative effectiveness of secondary school principals. This implies that personality trait is a major determinant of leaders' work performance. This study established the fact that principals with extraversion and conscientiousness traits are considered to be more effective than principals with other traits. However, studies conducted by Judge et al. (2002) and Yeager (2005) revealed no significant relationship. Also, Martin (2004) observed that there is no significant relationship in the personality and the trust people have in their principals. This finding also tallies with the result that emanated from the students that there is no significant relationship between personality traits and principals' administrative effectiveness. But Martin (2004) equally believed that personality traits such as extraversion and conscientiousness are needed by leaders for effective performance. Confirming this statement, Ibukun et al. (1997), Reave (2005) maintained that people who are effective as

leaders tend to exhibit certain traits. Consequent upon this, it is good to note that some traits become relevant in specific situations. This assertion is supported by Avery's (2004) findings that behaviours that appear effective within one situational context may be seen as ineffective in another situation. From the foregoing, it is believed that personality traits such as extraversion and conscientiousness were more relevant to the principals' administrative effectiveness than the other three. However, the relevancies are situational.

### CONCLUSION AND RECOMMENDATIONS

This study revealed that secondary school principals in Southwestern Nigeria were very effective in discharging their administrative duties. It is believed that most of the principals had personality traits such as extraversion and conscientiousness which gave them the required skills for school management. By and large, the task of school administration is a collective effort, therefore, it requires the collaborative effort of every stakeholder (government, parents, students, teachers and principals) with positive mindset in order to produce positive results in schools.

It thus recommended that for principals to be able to manage their schools well, such principals need to first of all understand that they have great influence within the schools and outside the schools. Hence, it is recommended that principals should have the necessary knowledge of their subordinates and also try to establish pleasant social interactions with them. In doing this, principals should know that they should not create unnecessary familiarity or be too rigid in the schools.

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