

SCOTTISH JOURNAL OF
ARTS, SOCIAL SCIENCES
AND
SCIENTIFIC STUDIES

VOLUME 5, ISSUE II
NOVEMBER, 2012

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The Attitude of youths towards HIV/AIDS in Uyo metropolis: Religious and Social perspectives

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Abstract

The study examines the attitude of youths towards HIV/AIDS in Uyo metropolis. In this study, a survey design was used. A structured questionnaire was adopted for data collection. Three research questions and two research hypotheses were formulated to guide the study. The population of the study was 10,450 adolescents from Uyo metropolis. A stratified sample technique was used to select a sample size of 200 youths. The reliability test carried out using Pearson Product Moment Correlation Coefficient (PPMCC) gave the result as 0.5 which shows that the instrument was reliable. Data collected was analyzed using percentages while the chi-square statistics was used to test the null hypotheses at 0.05 level of significant. The findings revealed that unsafe sexual involvement by the youths contributes to contracting or spreading of HIV/AIDS by youths in Uyo metropolis of Akwa Ibom State. It was recommended among others that Government and Non-Governmental Organizations should embark on social re-engineering of youths towards positive attitude through the mass media.

1. Introduction

HIV/AIDS is indeed a major public health problem in Nigeria and most countries of the third world. On April 23rd 2001, *Newswatch* cover story estimated that 2.6 million Nigerians were living with the virus; implying that about this number may likely be HIV positive. The amazing statistics of youths infected by HIV/AIDS as revealed in the medical records of some health institutions in Uyo metropolis visited by researches of this paper are unbelievable. This confirms the report of the World Health Organization (WHO:1995) which showed that 50 percent of HIV infections over the world occur among young people below 25 years of age, a period characterized by high exploration and experimentation. The devastating effects of HIV/AIDS is felt in every facet of societal life as Chukuezi, (2002:145) rightly observed, cutting down the youths, the educated and so many people in the prime of their life.

HIV/AIDS is indeed a major public health problem which the Nigerian government, like other government in the world, is battling to solve. In the Nigerian experience, HIV/AIDS portends a great danger and threat to nation health system, individuals, families and communities particularly to the uninformed people. It is against this background of the rapidity of reported cases of the spread of the disease among the youths that this study is being conducted to investigate the attitude of youths towards HIV/AIDS in Uyo metropolis of Akwa Ibom State. This study is to advance the religious and social perspectives towards the reduction of HIV/AIDS infection among the youths. It seeks to achieve the following specific objectives: to determine the contribution of unsafe sexual involvement of youth to contracting HIV/AIDS within Uyo metropolis; to determine the effect of poverty on unsafe sexual attitudes of youth in Uyo metropolis. Furthermore, the study is to also determine the effect of religious bodies and belief systems on youth's involvement in sexual activities in Uyo metropolis. Finally, recommendations are made towards reducing or tackling the problem of HIV/AIDS among youths in Uyo metropolis.

It is expected that from the findings and recommendations made from this study, there will emerge a new body of knowledge that will help the youths change their negative attitude HIV/AIDS. Parents, religious bodies and policy makers will immensely benefit from the findings of this study in the area of reducing the spread of HIV/AIDS and assisting young people to change their attitudes towards this life threatening syndrome.

2. Research Questions

The three research questions used for this study are as follows:

- a) How does unsafe sexual involvement contribute to the contacting of HIV/AIDS by youths in Uyo metropolis?
- b) How does poverty influence unsafe sexual attitudes among youths in Uyo metropolis?
- c) What roles do religious bodies and beliefs play in combating HIV/AIDS among youth in Uyo metropolis?

3. Research Hypothesis

The research hypotheses are as follows:

- a) Poverty does not influence the attitude of youths in Uyo metropolis towards HIV/AIDS

- b) Religious bodies and beliefs does not influence the attitudes of youth in Uyo metropolis towards HIV/AIDS.

4. Research Design

The survey design was used for the study. This is considered appropriate because the study needs the opinion of respondents in determining the influence of religion on the attitudes of youths towards HIV/AIDS in Uyo metropolis.

5. Area of the Study

The research study was carried out in Uyo metropolis in the south-south zone of Nigeria. Uyo is the capital of Akwa Ibom State, a major oil producing state in Nigeria. The population is estimated at 4.5 as of 2006 (NPC reports). It has an area of 95km² (36.75q. ml) and a land area of 95km²,36.75q. ml¹

Uyo Local Government Area is made up of traditional clans namely, Etoi, Offot, Oku and Ikono with eleven (11) political wards and eighty-two (82) villages. The main occupation of the people are farming and trading. By virtue of its geographical location in relation to the rest of the town in the state, Uyo assumes prominence as a commercial nerve centre. The city also boasts of important road network in the state. The Local Government Area is one of the oldest centres of education in the State. Consequently, there are numerous institutions of learning where many youths are enrolled.

6. Population of the Study

The population of the study consists of adolescents in Uyo metropolis, estimated at over 10,450 thousand youths.

7. Sample size and Sampling Technique

A sample size of 200 youths were drawn from the total population of the study. Thus, a stratified sample technique was applied to select 200 youths to form the sample size for the study.

8. Instrument for data collection

Questionnaire tagged "Attitude of Youths towards HIV/AIDS questionnaire" (AYTHAQ) formed the major instrument for data collection. The instrument is divided into two sections; section "A" seeks information on demographic data from the respondents, while section "B" requires information on the attitude of youths towards HIV/AIDS in Uyo metropolis.

9. Validation of the Instrument

In order to determine that the instrument is capable of measuring what is proposed to measure, the instrument was first submitted to two experts from the Faculty of Social Sciences and one from the Department of Statistics in the University of Uyo to assess the content validity. This helped in modifying items necessary to avoid misapplication of work.

10. Reliability of the Instrument

The reliability of the instrument was observed through trial test. The test was carried out on ten respondents outside the study area. The result of the first and second test on the ten respondents was computed by using Pearson Product Moment Correlation Coefficient (PPMCC). The result was used to carry out the reliability of the instrument.

11. Method of data collection

The researcher personally administered the instrument to the respondents in Uyo metropolis. In addition, oral interview was conducted on selected youths in Uyo metropolis to supplement those not covered by the questionnaire. All the respondents were appealed to complete the questionnaire and return to the researcher to avoid loss.

12. Method of data Analysis

The data collection through the structured questionnaire was analyzed according to the research variables, percentage and table were used to analyze the research questions while the chi-square (X^2) statistics was used to test the hypothesis. The entire test was conducted at 0.05 level of significance.

13. Presentation of data

The data collected from the research questions were analyzed using tables and percentages while chi-square (X^2) statistics was used to test the null hypotheses at 0.05 level of significance. To accomplish the purpose of the study, a total of two hundred (200) copies of questionnaire were administered randomly to selected youths in Uyo metropolis. Out of this copies, 185 (93%) were appropriately completed and returned for data analysis, while 15 (7%) copies were not returned. Thus the analysis in this chapter is based on the 93% of responses rate.

14. Analysis of demographic data

Table 1: Age Distribution of the respondents

S/N	Age Range	Frequency	Percentage
A	15 – 20	40	21.6%
B	21 – 26	95	51.4%
C	27 and above	50	27.0%
	Total	185	100%

Source: Field work, 2011

Table 1 above shows that 40 (21.6%) of the respondents were between the age range of 15 – 20 years old, 95 (51.4%) were between the age range of 21 – 26 years old and 50 (27%) of the respondents fall within the age range of 27 and above. The data further show that youth within the age range of 21 – 26 years old were the majority in the population among those sampled with the research instrument.

Table 2: Gender distribution of the Respondents

S/N	Gender	Frequency	Percentage
A	Male	120	64.9%
B	Female	65	35.1%
	Total	185	100%

Source: Field work, 2011

Table 2 above shows that 120 (64.9%) of the respondents were male while 65 (35.1%) were female. The data further shows that male were the majority of the youth that the researcher used for the study

Table 3: Religious Distribution of the Respondents

S/N	Religious	Frequency	Percentage
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A	Christianity	165	89.2%
B	Muslim	15	8.10%
C	A. T. R.	5	2.7%
	Total	185	100%

Source: Field work, 2011

Table 3 above shows that 165 (89.2%) of the respondents were Christians, while 15 (8.1%) were Muslims and 5 (2.7%) of the respondents were those youth that belief in African Traditional Religion (A. T. R.)

Table 4: Occupation Distribution of the Respondents

S/N	Occupation	Frequency	Percentage
A	Student	120	64.9%
B	Civil servant	10	5.4%
C	Business	20	10.8%
D	Unemployed	35	18.9%
	Total	185	100%

Source: Field work, 2011

Table 4 shows that 120 (64.9%) of the respondent were students, 10 (5.4%) were civil servants, 20 (10.8%) were business people and 35 (18.9%) were unemployed youths.

Table 5: Educational Distribution of the Respondents

S/N	Educational Status	Frequency	Percentage
A	Non-Education	-	-
B	Secondary	64	34.6%
C	OND/HND	76	41.1%
D	University	45	24.3
	Total	185	100%

Source: Field work, 2011

Table 5 above shows that 64 (34.6%) of the respondents are secondary school students, while 74 (41.1%) were holders of ordinary/higher national diploma, and 45 (24.3%) were university students.

15. Research Question 1

How does unsafe sexual involvement contribute to the contracting of HIV/AIDS by youths in Uyo metropolis?

Table 6: Percentage analysis of unsafe sexual involvement and HIV/AIDS among youths

S/N	Variables	No of Respondents	Percentage
A	Sex with contraceptive	60	32.4%
B	Sex without contraceptive	105	56.8%
C	No knowledge about any contraceptive	20	10.8%
	Total	185	100%

Source: Field work, 2011

Table 6 above shows that 60 (32.4%) of the respondents indicated that sex with contraceptive reduced rate of contracting of HIV/AIDS by youths in Uyo metropolis, 105 (56.8%) indicated that the spread of HIV/AIDS among the youths in Uyo metropolis is done due to sex without contraceptive and 20 (10.8%) indicated that they have no knowledge about any contraceptive. Based on this analysis, it is deduced that the spread of HIV/AIDS by the youths in Uyo metropolis is due to unsafe sexual involvement.

Research Question 2

How does poverty influence unsafe sexual attitude among youths in Uyo metropolis.

Table 7: Percentage analysis on poverty and unsafe sexual attitudes among youths.

S/N	Variables	No of Respondents	Percentage
A	Yes	128	69.2%
B	No	25	13.5%
C	I can't decide	32	17.3%
	Total	185	100%

Source: Field work, 2011

Table 7 above shows that 128 (69.2%) of the respondents indicated that poverty influences unsafe sexual attitudes among youths in Uyo metropolis, while 25 (13.5%) indicated No and 32 (17.3%) asserted that they cannot decide from the data, hence it is deduced that poverty influences unsafe sexual attitude among youths in Uyo metropolis.

Research Question 3

What roles do religious bodies and beliefs play in combating HIV/AIDS among youths in Uyo metropolis?

Table 8: Percentage analysis on the roles of religious bodies and beliefs in combating HIV/AIDS

S/N	Variables	No of Respondents	Percentage
A	Yes	145	78.4%
B	No	10	5.4%
C	I can't decide	30	16.2%
	Total	185	100%

Source: Field work, 2011

Table 8 above shows that 145 (78.4%) of the respondents indicated that religious bodies and beliefs do play a significant roles in combating HIV/AIDS among youth, 10 (5.4%) asserted No and 30 (16.2%) indicated that they cannot decide. From the data, it is deduced that religious bodies and beliefs play a significant roles in combating HIV/AIDS among youths in Uyo metropolis.

16. Testing of Hypothesis

Ho: Poverty does not influence the attitude of youths in Uyo metropolis towards HIV/AIDS

H₁: Poverty does influence the attitude of youths towards HIV/AIDS in Uyo metropolis

Table 9: Chi-Square(x^2) computation on poverty and attitude of youths towards HIV/AIDS in Uyo metropolis.

S/N	Variables	Fo	Fe	Fo-Fe	(Fo-Fe) ²	$\frac{(Fo-Fe)^2}{Fe}$
A	Yes	128	61.7	66.3	4395.69	71.2
B	No	25	61.7	-36.7	1346.89	21.8
C	I can't decide	32	61.7	-29.7	882.09	14.3
	Total	185				$X^2 = 107.3$

Source: Field work, 2011

Significance at 0.05

The degree of freedom is obtained by:

$$(R-1) (C-1)$$

$$(3-1) (2-1)$$

$$(2*1) = 2$$

Table 9 above shows that the computed chi-square value of 107.3 is greater than the critical table value of 5.99 at 0.05 level of significance meaning that the null hypothesis (H_{01}) is rejected, while the alternative hypothesis (H_1) is accepted.

Hypothesis 2

H_{02} : Religious bodies and beliefs do not influence the attitude of youths in Uyo metropolis towards HIV/AIDS

H_2 : Religious bodies and beliefs do relate or influence the attitude of youths in Uyo metropolis towards HIV/AIDS.

Table 10: Chi-Square (x^2) computation on Religious bodies and beliefs and its influence on youths attitude towards HIV/AIDS

S/N	Variables	Fo	Fe	Fo-Fe	(Fo-Fe) ²	$\frac{(Fo-Fe)^2}{Fe}$
A	Yes	145	61.7	83.3	6938.89	112.5
B	No	10	61.7	-51.7	2672.89	43.3
C	I can't decide	30	61.7	-31.7	1004.89	16.3
	Total	185				$X^2=172.1$

Source: Field work, 2011

Significance at 0.05

The degree of freedom is obtained by

$$(R-1) (C-1)$$

$$= (3-1) (2-1)$$

$$= (2*1) = 2$$

Table 10 above shows that the computed chi-square value of 172.1 is far greater than the critical table value of 5.99 at 0.05 levels significance, meaning that the null hypothesis (H_0), is rejected while the alternative (H_1) is accepted.

17. Discussion of Findings

Unsafe sexual involvement among youths and contracting HIV/AIDS

The result of data as analyzed in table 6 shows that the majority of the respondents 105 (56.8%) indicated that sex without contraceptive increase the risk of contracting HIV/AIDS among the youths. These findings are supported by other scholars. Unuigbo and Osufu's (1999:39-44) study among adolescent girls in Benin City explored the extent of knowledge and awareness of HIV/AIDS within the sampled population and the findings review wide knowledge and identified casual sex as the main route of transmission. The study also found high sexual activity among the youth in spite of their knowledge and awareness of HIV/AIDS.

Again, in support of the findings, Onifade (1999: 102) study conducted in Ondo state among 1,758 adolescents comprising 829 males and 929 females, also revealed that 78.6% of the males and 80.7% of the females had knowledge of STDs. Also AIDS and Gonorrhoea were the two most frequently mentioned STDs known by the respondents. Yet, this knowledge did not translate into positive behaviour as substantial respondents kept more than one partner. Thus, unsafe sexual involvement among the youth contributed immensely towards contracting of HIV/AIDS among youths in Uyo metropolis. It further means that unsafe sex relationship among the youths is the main route of contracting and spreading of HIV/AIDS in the state.

Influence of poverty and unsafe sexual attitude among youths

The result of data analysed in table 7 and 9 indicated that poverty contributed immensely towards unsafe sexual attitude among the youths in Uyo metropolis of Akwa Ibom State. The result indicated that above 69.2% of all the respondents agreed that poverty influenced unsafe sexual behaviour of youths in Uyo. These findings are supported by previous findings in other places including Nigeria. Chukuezi (2002:145) asserted that vulnerability of the adolescent in the developing countries included is due to poor economy, which impacts greatly on the family income, are straining resources, burdening women in particular as well as risk of survival.

Furthermore, the findings is supported by Onifade (1999:54), who asserted that the majority of African population now living in the urban areas characterized by overcrowding, low income and lack of employment, are noticeable preponderance of females who are not certain of their daily meals, therefore leading young people to sexual risk. This implies that poverty is the root cause of young risky sexual relationship with people without considering contracting HIV/AIDS.

Religious Bodies and beliefs: it's influence in combating HIV/AIDS among youths.

The result of data analyzed in table 8 and table 10 showed that over 78.4% of the respondents confirmed the significant role that religion and beliefs played in combating HIV/AIDS among the youths in Uyo metropolis. These findings supported by other findings for example Kerby (1994:28), asserted that moral education and preaching by religious organization section played significant role in reducing the rate of spreading HIV/AIDS among the youths. To him, education is paramount because it can empower people with the knowledge they need to protect themselves from infection. Also, only education can combat the discrimination that helps perpetuate the pandemic. Thus, moral

education is very necessary to help children and young people acquire the knowledge and develop skills they need to build a better future.

18. Summary

This was carried out to examine the attitude of youths towards HIV/AIDS in Uyo metropolis and to determine the religious and social perspectives towards reducing the problem among youths. To achieve this purpose, three research questions and two research hypotheses were formulated to guide the study. A structured questionnaire was used as the main instrument to collect data from 200 respondents in Uyo metropolis, through random sampling technique. The data collected from the respondent were analysed using percentage and tables for the research questions and chi-square (χ^2) statistics for testing the hypotheses. The following major findings were revealed;

1. Unsafe sexual involvement by the youths contributed to contracting or spreading of HIV/AIDS by the youths in Uyo metropolis of Akwa Ibom State.
2. Poverty significantly influenced unsafe sexual attitudes among youths in Uyo metropolis
3. Religious bodies and beliefs do play a significant role in combating HIV/AIDS among youths in Uyo metropolis. Church as religious organization has the moral authority to promote healthy behaviour among members, and can offer more imperatives for the family, and to teach moral motivation for abstinence and faithfulness to one sex partner

The findings further revealed that casual sex and poor or inadequate awareness of the HIV/AIDS among youths coupled with cultural beliefs helped to increase the rate of HIV/AIDS among youths in Uyo. Hence it is the hope of this study that strong campaign and enlightenment be mounted on the effect of negative attitudes of youths towards HIV/AIDS on the future of the young people.

19. Conclusion

Based on the findings, the following conclusions were made. From the empirical evidence presented in this study, it is concluded some youths in Uyo metropolis tend to exhibit negative attitude towards HIV/AIDS and use of contraceptive when having sex. This suggests the lack of or inadequacy of moral education that ought to pay particular attention to HIV/AIDS scourge. Because of this deficiency, youths in Uyo metropolis become socialized with the belief system that has neither scientific origin nor proof.

Based on the above, it is concluded that the increase in spread or contracting of HIV/AIDS among youths in Uyo metropolis of Akwa Ibom State is due mainly to unsafe and casual sexual relationship among the youths.

20. Recommendations

Based on the findings of this study and its subsequent conclusion, the following recommendations are made:

1. Government and Non-Governmental organizations (NGOs) should embark on social re-engineering of youths towards positive attitude through the mass media.

2. The family as the biological, social and economic entity should wake up from slumber and spearhead the obligatory task of ensuring adequate upbringing of the children.
3. More so, parent should learn to promote the home as first school.
4. Church should counsel the youths on the life skills education, incorporate it in the youth camps and in youth centre programmes of the church.
5. The church should also recognize the importance of the role of church leadership in this fight, hence, the leaders and workers need to be equipped with the latest update of HIV/AIDS information.
6. Workshop, seminars and training programmes should be organized for the youths and young people on the risk of unsafe sexual relationship, to help them create greater awareness on the impact of HIV/AIDS on their future.
7. The church should also encourage parents to become more involved in their children
8. Government should improve its welfare package on the vulnerable groups in the society to enable them have hope for tomorrow.

References

1. *Newswatch*: Nigeira's weekly Magazine, (2001, April 23 2001).
2. WHO, *The Health of Young People: A Challenge and a Promise*, 1995.
3. Chukuezi, C.O. HIV/AIDS Crisis and the Impact on Children in Developing Countries: The Case study of Nigeria, *Nigerian Journal of Rural Sociology* (2002) pp 145-149
4. Uniugbe I. E. &Osufu O. *Sexual Behaviour and Peception of AIDS Among Adolescent Girls in Benin City, Nigeria*. *African Journal of Reproduction*. (1999) Vol. 3, no. 2, p.p. 39-44
5. Onifades I., *Unit Reproductive Health Needs of Adolescent: Implication needs for HIV/AIDS in Africa*. *African Journal of Health* (1999) p. 102
6. Chukuezi C. O. *HIV/AIDS Crises and the Impact of Children in the Developing Countries: The Case of Nigeria*, *Nigeria Journal of Rural Sociology* (2002) p.p. 145-149
7. Kerby R. *The Role of Religious Organization on the HIV/AIDS Patience: A Case Study of Nigeria*, (1994) p 28

Muslim Leadership in Ghana: A Critical Analysis

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Abstract

This paper addresses the problem of Muslim leadership in Ghana. It aims at underscoring the need for leadership reforms and developing a model for building a good Islamic leadership. Using Plato's theory of the "philosopher king" as framework, the paper postulates that until either secularly educated *ulama* become leaders or the present *ulama* are exposed to secular education, Muslims in Ghana will not see the end of managerial and socio-economic disequilibrium. Political forces including leaders' selection styles trigger the problems. Hence the main thesis is that if the right Islamic leadership selection principles and model are applied, the Islamic leadership situation in Ghana will be proactive and gear towards unity and achievement of goals. Two leadership selection styles were indentified while the disagreements between the Ahlus Sunnah and the Tijaniyyah were found responsible for the leadership problems. The absence of functional hierarchical leadership structure has compounded this problem which has affected Muslim unity in Ghana. Hence, the conclusion is that until a functional hierarchical leadership structure is formed at all levels, Muslim unity and community development will always be shaky. The research, therefore, recommends a leadership model that will enhance the devolution of authority among the leaders.

Key words: Leadership, Islam, Ghana, "philosopher king", Tijaniyyah, Ahlus Sunnah

Introduction

This paper examines the Islamic leadership in Ghana with a focus on its challenges. The aim is to highlight the need for leadership reforms within the Ghanaian Muslim communities. The link between leadership and the numerous conflicts in Muslim communities known as *Zongos* has been overlooked in Islamic scholarship in Ghana. The focus has been on how to maintain peace and bring about development but not how leadership incinerates disunity and undermines development. Using the Platonic philosophical theory of “philosopher king” as framework, this paper reflects on the nature of Muslim leadership in Ghana and the benefit to derive when it is exposed to secular education. It looks at the factors which lead to the problems and develops a model for building a good Islamic leadership in Ghana and enhancing its effectiveness. The question is when was Islam introduced to Ghana? What has been the performance of Islam and its leadership since the inception of the religion in Ghana?

Islam in Ghana: An Historical Overview

Islam was introduced to northern Ghana by Mandes from Mali (Hiskett, 1984). These were helped by Dyula Muslims who were themselves probably Mandes in the 16th Century (Hiskett, 1984, Yim, 2004). The Tribes that were Islamised include: the Gonja, the Dagomba, the Mamprusi, the Wala, and to a large extent the Bono (Hiskett, 1984). The relevance of Bono in the spread of Islam is that it was both a producer and distributor of gold for the trade along the route from Bono to Jenne on the Niger Bend (Hiskett, 1984). This route facilitated the transport of gold to Islamic Sudan and the transmission of Islamic knowledge from the Niger Bend to the outer reaches of the forest regions of Ghana. The Dyula were probably at the centre of this endeavour (Odotei, 2008). This gold trade led to the migration of Dyula Muslims to Asante leading to the introduction of Islam to Asante, but this was a gradual infiltration. The trade in gold was dominant in the spread of Islam in Ghana and West Africa as a whole and Bono is the reference point. One must therefore agree with Hiskett when he remarked that:

It is, perhaps, with the extension of Bono's influence towards the South that it becomes convenient to think in terms of 'Islam in West Africa' instead of simply, 'Islam in west and central Sudan' (p. 133).

The above extract shows that Bono was very important in the spread of Islam in West Africa in general. Afterwards, an Islamic community emerged in the country. Through Asante wars of expansion northwards, Islam was formally introduced to Asante (Hiskett, 1984). The Asante involvement in the cola trade led to further spread.

Islam was introduced to the coastal part of Ghana during the *Sagranti War* (named after the military commander of the British forces, Sir Granet Wolsley who led the British campaign against the Asante in 1874). Islam got to Fanteland in the 1870s through Muslim mercenary soldiers recruited by one Captain Glover of the British forces in Cape Coast to fight in the *Sagranti War* (Odotei, 2008). Benjamin Sam, a Methodist catechist who converted to Islam and took on the name Abdul Mu'min, was very instrumental in the spread of Islam in Fanteland (Odotei, 2008). The appearance of the Ahmadiyya Movement in 1921 in Saltpond, which marked the origin of the expression *Fante Kramo*, introduced a new dimension to the spread of Islam with the establishment of schools.

The above shows that wherever Islam reached, it boosted learning and minimised parochialism and ignorance through education, boosted trade, built states and created

culture and civilisation. It is, hence, no mean fact that, in northern Ghana and Asante, the art of writing, i.e. literacy, started only after the introduction of Islam. Many trade agreements between Asante and her vassal northern territories were written in Arabic (Hiskett, 1984). Indeed,

By 1235-6/1820, when the Ashantis [Asante] were in contact with the British, it was Muslim literates who conducted the negotiations (Hiskett, 1984, p. 134).

Arabic literary collections were a source of data for Ghana's history and literary collections like *Tarikh-ad-Daghbawi* and *Kitab-Ghunja*, which are important sources of scholarly reference (Fynn & Addo-Fening, 1991), give credence to this argument. By establishing centres of learning (with one at Bona in the Black Volta (Hiskett, 1984)), Islam triggered a movement of people which brought social integration among states in Ghana.

It was, again, no mean fact that Muslims had been at the forefront of leadership in Northern Ghana prior to independence. A remarkable evidence is the interesting feature of the staff of authority of the Jirapa paramountcy made up of the Holy Qur'an and a staff. Again, during the coronation of a chief, a symbol of authority handed to him is a copy of the Holy Qur'an. After independence, however, Ghana embraced the central administration bureaucracy (an administrative style involving the transfer of power from a central authority to subordinate levels, usually from a central head to regional or local levels). This was designed for local government in which the local institutions of the people would develop constitutionally. This administrative system sidelined the Islamic traditional authorities just like the chiefs of popularly non-Muslim settlements who were also reduced to mere ineffective leaders of towns and villages.

Nonetheless, Muslims supported the development of the Country and this accounted for why there are Muslim settlements in several places in Ghana including: Aboabo in Kumasi, Nima, Mamobi, Madina and New Town in Accra, Zabon or Sabon Zongo in Agona Swedru, Kotokuraba Zongo in Cape Coast, and Afiakuma in Takoradi. The European involvement in Gold Coast politics, which culminated in colonization in the 19th century, frustrated the development of a centralized Islamic leadership in Ghana. It marked the beginning of a process of subversion and exploitation which weakened the existing Islamic leadership regarded as an alternative to leadership in Ghana, with particular reference to northern Ghana. This rendered the Islamic leadership in Ghana weak and emasculated. Worst of it, its education system is rendered impotent and unproductive even where they constitute the majority.

Regrettably, however, this accounted for the neglect and sidelining in the consideration of Muslims for leadership positions. Worst still, lack of secularly educated leaders among Muslims in Ghana has robbed Muslims of the opportunity to be adequately represented in government on the pretext that they constitute a small percentage of the population. Lack of attention to Muslim celebrations like *Idul Adha* and *Idul Fitr* with respect to granting different holidays is the reason why the *Id* prayers are often observed by different groups of Muslims on different days. Hence, it can be said that the current Muslims leadership in Ghana cannot guarantee the consideration of Muslim leaders as alternative in governance. The question is: what is leadership? What is leadership from an Islamic perspective?

Conceptual Clarifications

'Leadership' is a term that is difficult to define. It is perhaps one of the most widely studied in the social sciences. Chester Barnard (1948 as cited by Rost (1993, p. 179)) indicated that "leadership is the subject of an extraordinary amount of dogmatically stated nonsense." If this was Barnard's view in 1948, one can then envision what Barnard would say today. Although, no vivid definition of the term is captured so far, metaphors like charisma and influence dominate a variety of arguments on leadership qualities. Chemers (2002) opines that leadership is a process of social influence in which one person can help and support others in the accomplishment of a common task. Alan Keith cited by Kouzes and Posner (2007) also states that it is about creating a way for individuals to contribute in making something extraordinary happen.

The above means that leadership is an essential aspect of every society, group or organization and the development of any of them depends on the quality of its leadership. It determines success in any organization be it formal or non-formal (Ather & Sobhani, 2008). Leadership is, thus, about setting agenda for development and identifying and managing the problems that inhibit it. It portrays authentic self expression that creates value (Cashman, 2000). It is the art of mobilizing people for struggle towards shared aspirations (Kouzes & Posner, 1995). Common elements in the definition of leadership point to an effort to improve well being, care, nurturing, and commitment to relationship based on mutual community influence and purpose guided by principles that are focused on change, growth, and accomplishment by way of persuasion other than imposition. In essence, leadership is the ability to guide, direct, and influence subordinates (who are themselves supreme in deciding who has to be the leader) to accomplish a task. It includes the direction as to how affairs could and should be, from the viewpoint of the leader, implemented hoping to achieve a better situation than the present in an organization. Leadership, therefore, focuses perception, attitudes, knowledge, behaviour and desired outcomes of an endeavour in an establishment.

In Islam, Muslims are not prohibited from taking up leadership roles. Allah created humans with the objective of peaceful coexistence between them (Ather & Sobhani, 2008). An important aspect of human social co-existence or living together is the opportunity to be freely involved in leadership (Patwary, 2003). Given the above, one realizes that Aristotle made a lot of sense when he opined that every sane human being is a political animal [leader] (Read Aristotle: *The Republic*). To that extent, an Islamic leadership can influence and support people to work toward an objective (Koontz & Weihrich, 1994). Who then is a leader? A leader

... is a member of a team who is given a certain rank and is expected to perform in a manner consistent with it. A leader leads a group who [sic: and] is expected to exercise influence in forming and accomplishing the ethical goals and objectives. The success of a leader is dependent on team building that leads to team spirit (Ather & Sobhani, 2008: p. 8).

From the above, it can be deduced that the leader himself is a member of the group he leads. The subordinates of the Islamic leader serve and respect him, while his own duty is to serve the subordinates. The Prophet is reported to have said that the *Imam*, of a community (*jama'ah*) is a servant of that community. The word *Imam* was derived from the Arabic *amma*. This has two shades of meanings. The first includes: "to go", "be take oneself", "go to see someone" (Muhibbu-Din, 2004). This shade of meaning has *ammu* as its verbal noun. The second shade of meanings indicates the following: "to lead the way", "to lead by one's example", and "to lead someone in prayer". This also has *imamah* as its verbal noun (Muhibbu-

Din, 2004). *Imam* or an Islamic leader is, therefore, the one who leads both prayers in the mosque and the people in the society by examples. The Qur'an explains the word *Imam* as follows:

And remember that Abraham was tried by his Lord with certain commands which he fulfilled. He said: "I will make thee an *Imam* (leader) to the nations." He pleaded: And also *Imams* from my offspring! He answered: "But My Promise is not for evil-doers" (Qur'an 2: 124).

Explaining this, Yusuf Ali indicates the following:

Imam: the primary sense is that of being foremost: hence it may mean: (1) leader in religion; (2) leader in congregational prayer; (3) model, pattern, example; (4) a book of guidance and instruction ...; (5) a book of evidence or record... (Yusuf Ali, 1983, p. 52. See footnote no. 124).

Another term used for an Islamic leader in Muslim political history is *khalifah* which means "a representative". Islam views a believer as a representative of God: His vicegerent on earth (*khalifatu-l-Llah*). The Qur'an says:

Allah has promised, to those among you who believe and work righteous deeds, that He will, of a surety, grant them in the land, inheritance (of power) [layastakhliḥannahum], as He granted it to those before them; that He will establish in authority... (Qur'an 24: 55).

Muslims, however, cede this birthright of deputyship for God to elected colleagues who are obliged to steer their affairs under the *Shari'ah* by way of consultation. The word *khalifah* implied in the above verse is derived from *khalafa* which means "came after" or "succeeded another that died" (Muhibbu-Din, 2004). *Khalifah* is, therefore, interchanged with the word *Imam* because that was the title the early Muslim leaders who succeeded the prophet took on. In northern Ghana *khalifah* has been corrupted into either *Afa* or *Alfa* (Hamid, 2004). Another word used for a leader in Islam is *amir* derived from *amr* with the verb, *amara*, meaning "to order", or "to command someone to do something" (Muhibbu-Din, 2004). Its adjective, *amir*, refers to a commander or prince, while *imarah* is the position of the ruler. For this reason, the *khalifah* or caliph was sometimes referred to as *amir-al-mu'minin* (commander of the faithful). The word *Sultan* is also used; however, this, together with *amir*, was responsible to the central authority of the *khalifah* or the *Imam* during the classical period of Islam. This presupposes that Islamic leadership devolves from a higher authority to subordinate office holders who finally link-up with the ordinary.

A leader must help the people to move forward (Ather & Sobhani, 2008). The Islamic doctrine of leadership emphasizes the dexterity of dealing with individuals and the competence of influencing and guiding human conduct toward specific ends in such a way as to guarantee obedience, mutual respect and trust with the purpose of seeking the pleasure of Allah (Yakin, 1984). This makes the Islamic perspective of leadership differ from secular ones, although, just as the secular democratic leader is subject to the law, the Muslim leader (*Imam*) is subservient to the *Shari'ah* (Islamic law). However, this subservience is unconditional unlike secular leadership where the doctrine of immunity creates exceptions to some hierarchy of government official.

Anisuzzaman and Majumder (2006) identify some distinctions between the ideal Islamic leadership and its secular counterpart. In secular leadership, management of affairs is not done by consulting a scriptural source but Muslims refer to divine sources. Secular leadership is rule-bound and involves no trust, but Muslim leadership is guided

by the tenet that the leader is accountable to Allah and is judged by the services he renders to his followers. The plan toward the management of affairs is done by meetings or conferences and study of enquiry reports, etc, in secular leadership, but Islamic leaders manage affairs by consultation with the learned (Anisuzzaman & Majumder, 2006, p. 49). Finally, the two leadership styles are different due to the sources of their rules: secular leadership derives its powers from a set of laws approved by majority of members in government. However, Muslim leaders' ultimate source of power is derived from divine laws being fully aware that majority can err in decision making.

The *jama'ah* are the subordinates of the leader (*Imam*) just as the masses are subordinate to the secular leader; however, more than that, the Muslim leader, in turn, is subservient to Allah, and as a result, subservient to the same law, the *Shari'ah*, that subjugates the congregants (the subjects) to him. Management of affairs in Islam is based on consultation (*shura*). It, therefore, consists of constant and peaceful dialogue between the stakeholders until mutual agreement is reached (Nuamah, 2001). What then are the features of the Islamic leadership in Ghana?

Features of Islamic Leadership in Ghana

There are two basic types of leadership in every institution: civil and religious or spiritual leadership (Chidomere, 2004). Presently, however, there is a survival struggle between the two, obviously, due to their sources of authority. In communist societies, civil leadership wields such a power that it appears as if religious leadership is nonexistent while in Islamic countries religious leadership leaves no room for the operation of civil leadership (Chidomere, 2004). Nonetheless, in all cases, the other operates underground. Whether at the community or national level, the two types have one feature, i.e. management (Ather & Sobhani, 2007). In Islam, civil and spiritual leadership blend to produce good results.

In Ghana, the central government system allows both civil and spiritual leadership to operate. The Islamic leadership is, therefore, supposed to feature prominently. However, owing to its spiritual (religious) nature, it is characterized by leading of prayers in the Mosque and so, despite the fact that Islam has its own civil aspects; the national government manages the public physical affairs of Muslims in Ghana.

However, there are some conflicts of ideology between the various Islamic groups or sects about some basic religious laws. At the centre of this ideological struggle are the *Ahlu-Sunnah wal-Jamaa'ah* and the *Tijaniyyah* Muslim brotherhood. These two groups criticize each other's theological positions. This increases suspicion on both sides which increases leadership crisis as each of them wishes to command the majority of the people. Such a rancor works against the interest of the Muslim community itself. Hence, it is vital that the right form of leadership compatible to these ideological groupings is formed so that there can be adequate rapport between Muslims and the government. The Islamic leadership in Ghana has five principal features.

1. *Learning and Intelligence*: This leadership is basically spiritual; and competent knowledge of Islamic literature is very important. One cannot lead prayers without adequate knowledge of the Qur'an. However, a feature of some Muslim leaders in Ghana is that they are not well grounded in Islamic knowledge, particularly, the sciences of the Quran including the recommended mode of recitation, *tajwid*. This is probably due to lack of advanced Islamic colleges to train them. This observable lack of proficiency in the

recommended knowledge of Islam has cost most Muslim communities and retarded development. In some mosques in the Central Region, for example, the Friday sermon (*khutbah*) is delivered in Arabic as it is traditionally required but no translation is made. As most of the congregants are not Arabic speakers, this approach ultimately misplaces the purpose of the sermon, which is to preach the message. The *Imams*, themselves are crippled by inadequate grasp of the Arabic language.

2. *Deficiency in Western education*: owing to lack of advanced English-Arabic schools in Ghana, it is difficult for one to benefit from both Arabic and English education at equal levels, i.e. get a sound background in both Islamic and secular education. The tradition is that one could get a little knowledge of Arabic (Islamic education) and adequate secular education and vice-versa or more of one of them and nothing of the other. Better still one could get little of the two. The latter is uncommon. It must be clarified that a few fortunate ones get adequate knowledge of both Islamic and secular education. As the leadership is a religious one, adequate Islamic knowledge is solely emphasized and so majority of functional Muslim leaders in Ghana are secularly non-literate.
3. *Inadequate knowledge of Islamic law*: the depth of understanding of *shari'ah* in its details is very necessary for the *Imamship* in Islam but some Ghanaian cases, in this regard, are questionable.
4. *Lack of allegiance*: one feature of Islamic leadership in Ghana is that each leader (*Imam*) is independent. The office of the National Chief *Imam* is not only ceremonial and ritualistic; but it does not have a universal recognition, as other groups like the Shi'ah and Ahlus Sunnah have their own National Chief *Imams* that supervises their activities. The current National Chief *Imam*, Sheikh Usumanu Nuhu Sharubutu is a *Muqaddam* (a Sufi Sheikh) of the Tijaniyyah brotherhood. He is, however, supposed to be the Chief of all *Imams* in Ghana. Hence his administration is not fully functional in terms of controlling all Muslim groups in Ghana. For this reason, many of the *Imams* are not bound by this office. This does not present the Muslims with any united front for development.

Sometimes, it is tribal based: in northern Ghana, *Imams* are appointed from specific tribes. This, sometimes, rotates between the various tribes (Nuamah, 2001). The next topic will, therefore, review the selection procedure in Ghana?

Mode of Selecting Muslim Leaders in Ghana

Islam does not uphold the doctrine of imposing leaders. This is because Islamic religious rules are built on democracy and, therefore, endorses collective involvement of the believing adults available in any particular locality in electing a Muslim leader (the *Imam*). For this reason, there are no laid down rules specifying the process for electing *Imams* in Ghana. Some Islamic literature, however, specify what is known as *shurut-il-imam* (conditions governing the selection of an *Imam*) and Imam al-Ashmawi has outlined a number of these conditions in his *Matn-al-'Ashmawiyyah fi-l-'Ibadat*. Nonetheless, there have been two practical modes of selecting *Imams* in Ghana. These are election by Muslim tribal heads and nomination by a committee of the *ulama* (Nuamah, 2001).

1. *Election by Muslim Tribal Heads*: Most Muslims in predominantly Muslim communities popularly known as *Zongos* are made up of tribes. Each of these tribes has its own *Imam* who sometimes doubles as the chief of the tribe. These *Imams* or chiefs usually constitute themselves into what is known as Council of Muslim Chiefs which monitors the selection and approval of new *Imams* when such positions become vacant (Nuamah, 2001). When the need arises for selecting an *Imam*, this council meets to decide which tribe should be given the honour to host the *Imamship*.
2. *Election by Council of Ulama*: This procedure is similar to the state appointment done in some Arab countries. In some Muslim countries, there is a Ministry for Islamic Affairs, *Wazaratu-sh-Shu'un-al-Islamiyyah*. In such ministries, there is usually a section that oversees the building and running of Mosques. This section has an oversight role to appoint *Imams* for the mosques built under state funds. Such appointment is highly competitive and open to highly educated college men (Nuamah, 2008). Selection is done after competitive interviews which are based on proven scholarly records. It is obvious that such people are taken care of by the state even though their profession cannot be regarded as a paid one. In Ghana, however, this committee operates under the auspices of a regular *Imam* and either shortlists candidates after interviews or put in place a succession plan (Nuamah, 2008). The former is rare. The latter involves the appointment of *Imams* and their deputies (*Na'ibs*) concurrently so that in the event the substantive *Imam* vacates, his deputy automatic becomes an *Imam* (Nuamah, 2008).

Each of the above procedures has its own implications in fostering unity among the people. Muslims in Ghana are facing problems of unity. Consequently, these councils usually comprise the influential *ulama* in the locality. This means that if the leader of the council has personal interests in the community where this *Imam* will operate, it will work against the effectiveness of the selection process, and subsequently, undermine cooperation. Indeed, this has led to some ideological conflicts.

The Choice of Leaders and the Ideological Conflicts

Leadership conflicts emanate from doctrinal premises. Two principal theological groups are at the forefront of these conflicts. They are: the *Tijaniyyah*, a Sufi order founded by the South-western Algerian born scholar Ahmad Tijani and revived in West Africa by Ibrahim Inyass, a Muslim cleric of Kaulack in Senegal; and the *Ahlus-Sunnah*, itself a remodelling of the Wahhabi Movement named after Abdul Wahhab, a Muslim cleric of Saudi origin. While the latter advocates an unconditional observance of the prophetic *Sunnan*, the former thinks that some modification in response to the needs of times does not contradict Islamic norms. The two are therefore always at each other's throat. Another new but growing group in Ghana is the Shi'ah.

The *Ahlus-Sunnah* and the shi'ah have National Chief *Imams*. At the national level, therefore, they do not give total recognition to the office of the National Chief *Imam*. Ideally, the National Chief *Imam* is supposed to be the head of all *Imams* in the country, irrespective of theological affiliation. However, as it is now one wonders whether, really, there is a Chief *Imam* at all. This is because, in some cases, the *Tijaniyyah* see the current Chief *Imam* as their own Chief *Imam*.

Sometimes, the conflict is internal. Leadership crises in *Ahlus Sunnah* mosques have created various divisions within congregations. For example, in the central region a power struggle between the *Imams* at the regional level, in 2010, led to leadership crisis at the Abura central mosque in Cape Coast, and this disrupted daily prayers on several occasions. For over a month, two contending *Imams* were leading two groups in prayers simultaneously. *Jumu'ah* was disrupted on many occasions while the mosque was even closed down by the regional police command frustrating *jumu'ah* prayers for two conservative weeks (Eye Witness Account by author). At an *Id* ground in Abura in the same year, an *Imam* was assaulted when he failed to disembark from his attempt to lead the *Id* prayer. This turned the occasion into a brawl between supporters of the two *Imams*. This made the police close down the mosque that Friday to avoid further clashes. In the same mosque the *taraweeh* prayer on 3rd Ramadan of 2010 came to a halt for a similar reason. This conflict subsequently affected the daily congregational turnout and the maintenance of the mosque. This is a tip of the iceberg as far what really goes on in other mosques is concerned. Hence, it is clear that the Islamic leadership in Ghana is grappling with challenges.

Challenges of the Muslim leadership in Ghana

Among the challenges the Islamic leadership in Ghana faces is the problem of general recognition of the various *Imams* by their congregants. This results from the improper procedures for appointing them. The procedure for electing *Imams* in especially *Zongos*, as indicated earlier, is by the committee of Muslim chiefs. This procedure has many problems associated with it. The composition of this council which is based on tribe is disapproved, for tribes draw no merit in Islam (Nuamah, 2008, p. 39). This implies that the selection is not based on merit but tribal sentiments. This can make it possible for a person whose level of learning is questionable to win the bid. This thinking stems from two premises:

1. Majority of the present Muslim chiefs are not scholars and subsequently lack the basic understanding of the tenets of Islam that are needed for the selection of an *Imam*.
2. The chiefs usually rotate the *Imamship* among the various tribes; therefore, a tribe whose turn it is must have its member fill the vacuum. Their choice may not be based on the merit of learning and hence make it possible for a not-so-learned person to win and lead the people into a misguided path.

These challenges demand an evolutionary, not revolutionary, move away from the emphasis on mere Islamic learning to a blend of secular learning and Islamic religious ones. Thus, we need to fashion out an Islamic model of Plato's "philosopher king" (*al-faylasuf-al-mulk*), a rule based on critical knowledge. The next section, therefore, looks at how this inclusive wisdom-based rule can help restore confidence in Ghanaian Muslim leadership.

The "Philosopher King" Theory and the Muslim Leadership in Ghana

According to Plato, the human race will never see the end of suffering until either philosophers become kings or kings become philosophers (Anton-Hermann, nd.). In his *Republic*, Plato unequivocally states:

Until philosophers are kings, or the kings and princes of this world have the spirit and power of philosophy, and political greatness and

philosophic wisdom meet in one ..., cities will never have rest from their [kings'] evils, nor will the whole of mankind (Anton-Hermann, nd., p. 1).

This theory of “philosopher king” of Plato is relevant to the concept of community or civil as well as Islamic religious leadership because a similar logic applies. The notion of the “philosopher king”, for Plato, was that a ruler should be governed by sensible argument and thought grounded in any form of logic and reason (be it intuitive or sensual). At the same time, philosophy is the highest manifestation of reason and logic. It is, hence important that Islamic leaders are well versed in the rules of sound religious logic and ruled by the sound reasoning of the *Shari'ah*. On the reverse is the undesirable alternative of an *Imam* or Islamic leader ruled by his sentiments leading to both a corrupt leadership and a disastrous state, i.e. under development for its subordinates or citizens, Plato’s concept of suffering emanating from the *evils* of *unwise* leaders. Although, Islam has its own sublime philosophies that could impart wisdom to its leaders, the notion of an intelligent and incorrupt leader is still relevant in today’s Ghanaian Muslim society. Nonetheless, it must be emphasized that by the ‘philosopher king’, we are not advocating a theocracy.

This concept of philosophy or wisdom can be likened to secular knowledge. Due to the foreseeable challenge of multi-cultural, multi-lingual and multi-ethnic and even multi-religious existence in Ghana and the sharing and flow of religious ideas, religious knowledge alone without secular wisdom (the spirit and power of reason) is gradually falling short of the requirements for sound leadership in Islam in Ghana. It is hence appropriate that either the Islamic *ulama* in leaders expose themselves to secular education or secularly educated *ulama* should be in the helm of affairs to enhance proactive leadership that is responsive to the challenging demands of modernity. Hypothetically, therefore, Muslims in Ghana cannot end economic suffering until either Islamic leaders expose themselves to secular education or secularly educated *ulama* be at the helm of affairs.

In spite of this, one must admit that Plato’s concept of the “philosopher king”, just like all other philosophies of his, never gained acceptance without criticisms. Indeed, the theory was repudiated and it really paid its debt to the passage of time. In an extract commonly considered as a fragment of Aristotle’s lost piece, *On Kingship*, Themistius (see Themistius, Oratio VIII. 107 D as cited by Anton-Hermann, nd., p. 1) refers to the following critique of Plato’s “philosopher king” theory:

Plato, even if in all other respects he was divine and deserving our unlimited admiration, was utterly reckless when he made the statement that evils would never cease for men until either philosophers became kings, or kings became philosophers (Anton-Hermann, nd., p. 1).

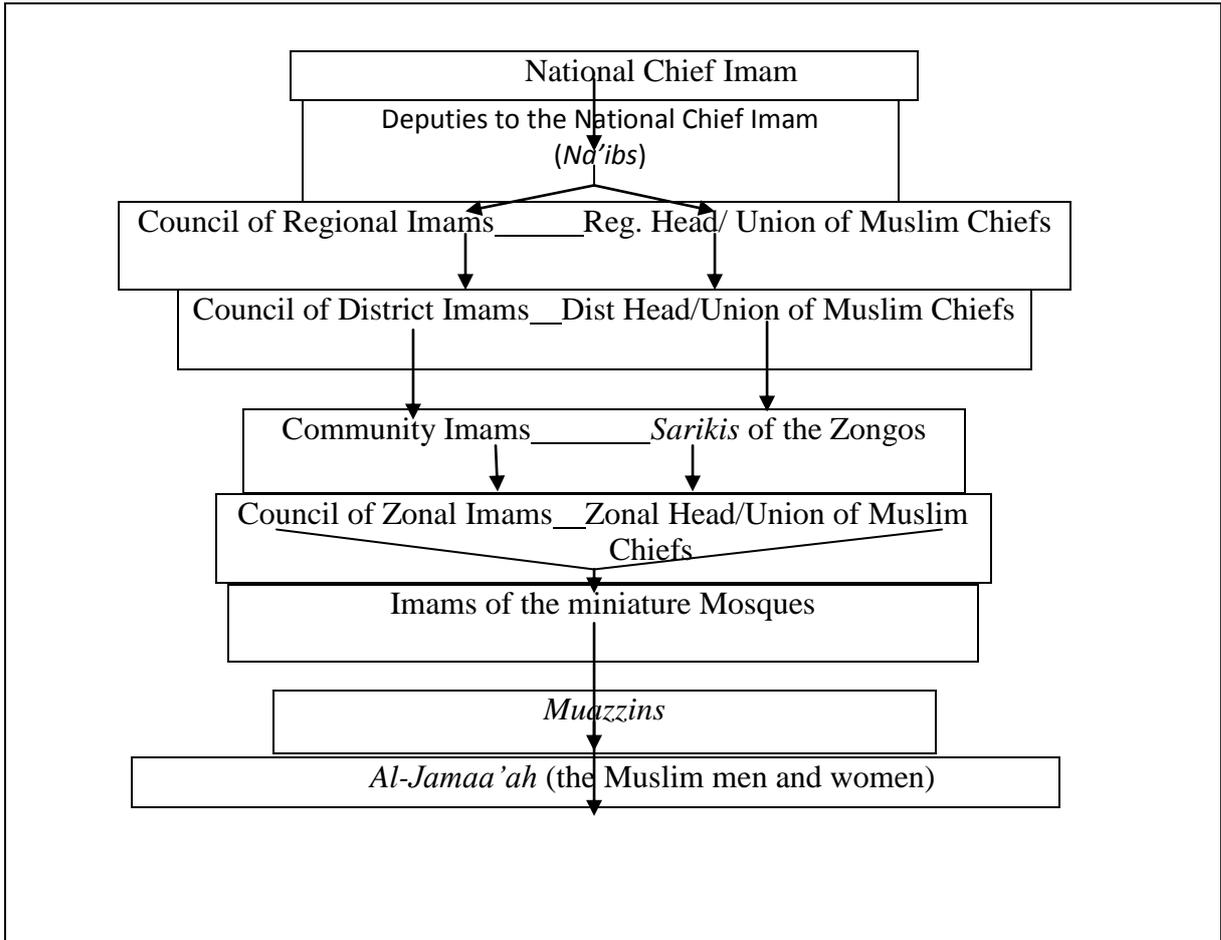
Certainly, Plato himself had conceded that his theory of “philosopher king” would herald heavy disagreement. However, he contended: “all great effort are attended with risk. Everything excellent is difficult” (Anton-Hermann, nd., p. 17). Aristotle is believed to have altered this “philosopher king” concept of Plato to make it “credible”. For Aristotle, it is inaccurate for Plato to say that a king has to be a philosopher because that would be a clear disadvantage. For him, what a king ought to do is to listen to the admonitions of true philosophers. If a ruler does this, then, for Aristotle, it would “enrich his reign with good deeds and not merely with fine words [reminiscent in the expositions of philosophers]” (Anton-Hermann, nd., p. 1). Incontrovertibly, Aristotle’s demurral or modification of this “philosopher king” theory of Plato is in tune with the rational

existential outlook and the applicable requirements of the political life of the community of his time. However, Aristotle should have recognized that true philosophers make no claim to knowledge, i.e. they never claim to know; they only listen and ask questions to know from men who claim to know (what they, in fact, do not really know). The constant questioning of political, economic or social decisions of some leaders cost some philosophers their lives in the past. A clear case in point is the poisoning of Socrates because of his opinions which differed from those of political office holders of his time. Being a good listener is, thus, a quality of critical thinkers, i.e. philosophers. This implies that rulers must be wise to love the quality of listening. This is accurately so because Aristotle himself, quite unfaithful to his view, in his association with Plato unquestionably professed Plato's opinion on leadership. In *The Politics*, Aristotle upheld Plato's theory of the "philosopher king" by submitting that "the good ruler must be a wise (practical) Man" (Anton-Hermann, nd., p. 2); even though, elsewhere he still argues that leaders must help themselves with advice from other people. This, for Plato, was absurd because a leader must be an independent thinker. Critically considering the above, however, one notes that Plato and Aristotle were practically unopposed to each other. This is because even the "philosopher king" still needs the suggestion of his colleagues. The question then is: can having secularly educated Muslim leaders really affect the effectiveness of the leadership or growth? Leadership is critical for growth. The issue is that a diversified educational attainment among leaders is necessary for promoting growth and a community is secure having leaders who are highly educated in the diverse sciences necessary for human existence. In the Islamic tradition, this is known as *fardu kifayah* (obligation for sufficiency) (Qaradawi, nd).

Lack of knowledge leads to lack of ideals, an *Imam* of low intelligence will lack competency in reasoning and therefore will run out of quick alternatives in decision making. The challenges of the 21st century demands leaders with all-round knowledge to lead, and secular education is one of the ways to track that in a person. Being well educated means that one reasons well about issues and therefore devises effective mechanisms to resolve problems. Secularly educated *ulama* are able to properly evaluate the past events and also make sound estimates for future development. A well educated *alim* who is a leader can take independent decisions for the good of his followers. Hence, the Islamic version of the philosopher kings shall be the *Imams* or leaders who are well grounded in the multi-sciences of the modern world including Islamic (Arabic) education, be it formal or informal, and formal secular education. It should be noted that, in spite of this, an educated Muslim leader cannot reach out to everybody at the grassroots himself. He, therefore, needs devolution of power and authority. The next section, hence, looks at how a hierarchy of leadership that can aid effective administration and management of Islamic affairs in Ghana and also propose a model that is consistent with the regional distribution of the country.

Experimenting a Hierarchical leadership in Ghana: A New Model for Muslims

An Islamic leadership which has firm control over the *ulama* is proactive. Nevertheless, owing to lack of coordinated hierarchical leadership structure among Muslims in Ghana, the central authority ends with the regional *Imam*. There is, therefore, the need for a coordinated hierarchical model that would take the form below.



Source: Construct by the Author

Figure 1: A Diagram Illustrating a Proposed Model of Hierarchy for Islamic Leadership in Ghana

Explaining the Diagram

At the top of the hierarchy should be the National Chief *Imam*. Although, this position is currently available, as indicated earlier, it is ineffective and needs modification. He would now be the ceremonial head of all the *Imams* in Ghana including the Chief *Imams* of the various sects, Tijaniyyah, Ahlus-Sunnah, and Shi'ah. His duty would no more be ritualistic, as it is now, due to the theological differences. This ecumenism within the leadership can work because in Islamic majority countries where leaders are presidents and monarchs who are to rule with *Shari'ah*, the various sects recognize him and they move on.

Next to this office would be the office of the Deputies to the National Chief *Imam*. These would be the National Chief *Imams* of the sects mentioned above. This would be the group from which a new National Chief *Imam* would be elected when vacancy is created. This would perhaps not only make it possible for other theological groups to have the chance of hosting the office of the National Chief *Imam* but would also serve as a check on his performance. Following these is the Regional Chief *Imams* of the various groups. Just like the National Chief *Imam* and his deputies, this position is also available but its function is sluggish as there is no united hierarchy. Again, all these officials are not elected/appointed by any properly constituted body that has a nationwide

recognition of the Muslim population in Ghana, and this is, perhaps, the source of its dysfunction. Furthermore, none of these offices has a council of experts to help it achieve its leadership objectives.

The features of this model that are new include the following. The Regional Head of the Union of Muslim Chiefs in every region of the country. This should be at a parallel rank with the Regional Chief *Imams*. This is because Muslim chiefs now form an integral part of the Muslim administration and tribal politics in Ghana and just as government has recognized the need to care for traditional chiefs in the pursuit of leadership, so also must they be involved in every decision making in Muslim communities. That implies, in effect, that their installation criteria must be redefined to pave way for their relevant input to Islamic religious affairs. Their role in maintaining peace and unity among Muslims and safeguarding Islamic culture in the areas of their dominion cannot be underestimated. Furthermore, since their views in the selection of *Imams* in areas where they exercise jurisdiction are paramount, they should be represented on the overall Islamic leadership hierarchy in Ghana. Below these offices should be a representative of the Council of District *Imams* while at the other end corresponding to the regional head of the Union of Muslim Chiefs should be the district head of the Union of Muslim Chiefs.

At the next lower level would be the Council of Zonal *Imams* and the Zonal Heads of the Union of Muslim Chiefs popularly known as *Sarikis*. These would also be followed by the Community *Imams* and the *Sarikis* of the various *Zongos*. They would also be followed by the *Imams* of the miniature Mosques and these should also be followed by the *Muazzins* of the various mosques. At the base of the hierarchy would be the *Jama'ah*, the Muslim men and women in Ghana who hold none of the above positions.

Recommendations: Mechanisms for Implementing the Model

Before the above model can materialize, certain mechanisms should be put in place. The model has many provisions which are not yet functional. It is, therefore, necessary that the required organizational framework is put in place to scaffold the model. These mechanisms are as follows.

1. *Creation of a Council of Imams*: The various *Imams* in each of the ten (10) regions should form councils which should be headed by an *Imam* in the region who would apply, get shortlisted, interviewed, selected and voted fairly on by the members of the Regional Council, based on Islamic learning, leadership trait, truthfulness and piety. This activity can be undertaken by a subsidiary council constituted with the consensus of the members of the given council. There should also be similar councils at the district and zonal levels through similar procedures.
2. *Creation of the Council of Muslim Chiefs*: Just like the *Imams*, the Muslim chiefs in the ten regions should form Regional and District Council of Muslim Chiefs (*Sarikis*). It could be headed by a member elected by the council. Candidates should be screened based on Islamic learning and piety and leadership experience by a subsidiary council composed by the council. Membership of the two offices should be reviewed through appropriate procedures periodically to avoid complacency and selfish tendencies.

3. *Leadership Training*: The appointed/elected Islamic leaders should be exposed to training on management of the affairs of the body to make them responsive to the challenges of the times.
4. *Conferences*: These should be organized from time to time at various quaters where leaders and the entire *jama'ah* would be abreast with the duties of leaders and the obligations of the followers in line with the tenets and injunctions of Islam.
5. *Creation of Offices*: Offices should be created at the regional, district, zonal, and community levels to serve as receiving points for the complains and misgivings of the *jama'ah* of the catchment areas of the elected officers; and these should be amicably settled. This would enhance effective flow of both information and ease general difficulties in administration.
6. *Exposure to Secular Education*: Islamic leadership transcends spirituality. Aside that, modern leadership has been more scientific in nature. Hence, modern leaders, no matter what institution they head, must be dynamic; although, without compromising guiding principles. Muslim leaders in Ghana ought to be more critical in thought and reason in view of modern challenges. Owing to migration and urbanization of rural settlements, it has become clear that the Hausa language which some Muslim clerics in Ghana have taken as a *lingua franca* is no more effective for communication even among Muslims, although, it is still useful. However, in large gatherings, English has been a more effective language of communication; and this obviously gives the secularly exposed *ulama* a higher advantage in leadership discourse. This situation necessitates either exposing secularly nonliterate *ulama* to secular education or allowing secularly educated *ulama* to be in the helm of affairs to ensure the achievement of goals.

Until an informed and functional hierarchy of leaders like this is formed at all levels, Muslim unity and community development in Ghana will always be shaky. This re-echoes Plato's thesis that the human race will not see the end of suffering until either philosophers become kings or kings become philosophers. This also implies that our education system should be redefined to cater for this development. The religious studies departments in the universities should take up this challenge to not only make Islamic and, probably, other religious leaders contribute better to community development in Ghana but also make religious studies more relevant to society.

Conclusion

The paper examined the problem of Muslim leadership in Ghana with the objective of underscoring the need for leadership reforms. The main proposition is that the time has come for Muslims to have a secularly educated and hierarchical leadership in Ghana. Using Plato's "philosopher king" theory as framework, the paper postulates that until either secularly educated *ulama* become leaders or the present *ulama* are exposed to secular education, Muslims in Ghana will not see an end to managerial and socio-economic disequilibrium. The main finding is that political forces including leaders' selection styles trigger the problems. The main thesis is that if the right leadership selection styles and model are applied, the Islamic leadership in Ghana will be proactive in ensuring unity, development, and achievement of goals.

References

- Al-Qaradawi, Y. trans. by El-Helbawy, K. et-al, (nd.), *Halal wal-haram fil-Islam (The lawful and the prohibited in Islam)*, USA, American Trust Pubs.
- Anisuzzaman, M & Majumder, M. Z. A. (1996). *Leadership: Western and Islamic – A conceptual and explorative study*. Dhaka: Bangladesh Institute of Islamic Thought.
- Anton-Hermann, C. (nd.). Aristotle's criticism of Plato's "philosopher king". Retrieved from <http://www.rhm.uni-koeln.de/111/Chroust.pdf> 26/07/2012
- Ather, S. M. and Sobhani, F. (April 2008). Managerial leadership: An Islamic perspective. *IIUC STUDIES*. vol. 4. Pp. 7-24.
- Cameron, D. (1935). Meaning of "indirect rule": The principles of native administration and their application. *African Affairs*, Vol. 13, no. 86. Pp. 283-286. Retrieved from: <http://afraf.oxfordjournals.org/content/XXXIV/CXXXVI/283.extract>, 26/06/2012
- Chemers, M. M. (2002). Meta-cognitive, social, and emotional intelligence of transformational leadership: Efficacy and Effectiveness. In R. E. Riggio, S. E. Murphy, & F. J. Pirozzolo (Eds.), *Multiple Intelligences and Leadership*.
- Chidomere, A. (2004). The relationship between the civil and religious leaders in the old testament with referece to Nigeria. In R. D. Abubakre, E. A. Odumuyiwa, O. Olajubu, R. Omotoye, & D. Oguntola-Laguda, *Religion, leadership and society: Focus on Nigeria*. Ikeja, Lagos, Nigeria: Free Enterprise.
- Fynn, J.K. Addo-Fening, R & Anquandah, J. (1991). *History for Senior Secondary Schools*, Accra: Ministry of Education.
- Hamid. M. (2004). The Afa as a pivote of Dagomba participation in the Islamic tradition. Thesis submitted to the Department of Religious Studies, University of Cape Coast, Ghana.
- Hiskett, M. (1984). *The development of Islam in West Africa*. NY & London: Longman. Koontz, H. & Weihrich, H. (1994) *Management: A Global Perspective, 10th ed.* London: Mc-Graw Hill International
- Kouzes, J. & Posner, B. (2007). *The leadership challenge*. CA: Jossey Bass
- Muhibbu-Din, M. A. (2004). Leadership in Islam. In Ade P. Dopamu, et al *Religion, Leadership and Society: Focus on Nigeria*, Lagos: Free Enterprise Pubs.
- Nuamah, I. I. (2001). The concept of leadership and imamship in Islam. Paper presented at Islam and Leadership Seminar organised by the Istitute of African Studies, University of Ghana, Legon. Published in 2008 by Dezine, Kumasi.

Odotei I. K. (2008). History of Ghana. Paper presented for visiting students from the US at the Department of Social Work, University of Ghana, Legon, January 11, 2008. Retrieved from: <http://irenekodotei.org/content/history-ghana>, 25/06/2012

Patwary, E. (2003), Leadership in Islamic perspective. *Executive Views, Vol. 2*. PP.56-70

Rost, J. C. (1993). *Leadership for the twenty-first century*. Westport, Ct.: Praeger.

Yakin, F. (1984). *Islamic movement problems an perspectives*. U. S. A.: American Trust Publications.

Yim, C. (2004). "Understanding Islam, its history in Ghana and an effective evangelistic strategy overcome Islamic influence in Ghana". A PhD Thesis, Liberty Theological Serminary, Lynchburgh, Virginia.

Yusuf Ali, A. (1983). *The Holy Qur'an: text, translation and commentary*. USA: Amana Corp.

Cross-Cultural Studies and the Myth of Value-Free Judgements

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Introduction

Supporters of the view that social scientists must of necessity be neutral as regards value judgements in their 'objective' study of primitive or alien societies are numerous. Their argument is based on the belief that, from the scientific study of the cultural practices in a particular culture, no evaluative judgements follow. This view has not however enjoyed a universal acceptance among social scientists and philosophers. Many of them have argued that from the study of an alien culture, nothing stops the social investigator from evaluating the belief-system of that culture, thereby assessing the level of rationality or otherwise involved in such cultural practices.

In this essay, I intend to pitch my tent with the latter group and argue that value-neutrality in the social sciences is but myth. In this regard, I will argue that the type of 'consideration' (a sort of invitation to cultural relativism) being given to some cultural practices in the so-called primitive societies by some social scientists betrays rather than portrays the natives (participants) as thinking people capable of being assessed or evaluated alongside with peoples from other parts of the world. That is to say, nothing really stops the social investigator from making value judgements concerning his research findings on a particular culture. This conviction stems from my belief that armed with some objective principles or criteria as his tools for research, it should be possible for the social scientist to judge how rational a particular cultural practice is, be it in Africa or elsewhere. What this author takes to be some of the objective criteria or principles of cross-cultural study will be stated later in this write-up.

However, I shall not be misunderstood here as defending hyper-rationalistic stance of the Victorians. That is to say, I recognize (as Weber did) the limitations of rational procedures of enquiry and understanding. The Victorian – 'Civilizing mission' to the 'Primitive' or 'Childish' society is no concern of ours here. In doing this, we are not adopting the functionalist approach that justified the study of non-rational behaviour by reference to the not so irrational 'hidden hand' by which all things worked to sustain each other (Wilson:1970). Rather, we shall defend a thesis that may appear to be unpopular – unpopular in the sense that its antithesis has had a sizeable number of adherents. The thesis I want to defend therefore is simply this: That in spite of the claim that one always come to moral judgement with some principles in mind which principles have been influenced by one's own culture, the social investigator (i.e. sociologist, social anthropologist, etc.) is professionally and morally competent to pass value judgements on his findings in respect of the alien cultures studied by him provided these same judgements are informed by the objective principles with which he works.

At this juncture, it will be better to ask ourselves how the social investigator may be said to understand the alien culture he studies. This question of understanding is very crucial if the study and hence the judgements are said to be considered as objective. Many scholars have argued that the sociologist must project himself into the cultural practices of the people he is studying. By doing this, so we are told, the researcher is in the position to understand, just as the participants (natives), the meaning as well as the symbolic significance of the non-discursive ideas, or what Winch refers to as the internal relations among the people. It is not however known how long the researcher has to stay among a particular alien people in order to emphasize with the cultural practices of the people and what the colour of such findings would turn out to be. We shall have more to say on the issue of empathy on subsequent pages, but suffice it to say that this requirement as part of cross-cultural study is loaded with numerous problems. As a

matter of fact, to some scholars, that is, those who concede that a ‘foreigner’ can study a traditional culture at all, empathy is only a second-best method of studying the cultural facts of a particular society.

Others argue that the participants are the best interpreters of their culture. To this latter group, if at all there is going to be a foreign social investigator, he has to consult the native informant, who himself must be a participant in the cultural practices. This belief is to us, mistaken. Again, I think Wilson (Ibid) is correct in holding that modern man (armed with scientific principles of investigation) might come to understand the cultural facts of a primitive culture better than the participants themselves. He argues, *inter alia*, “...there is...a sense, and the statement is no less comprehensible to us, in which we may say that medieval man had little or no chance of ever understanding medieval society – and certainly far less prospect of doing so than has modern man.” Critics might wonder why this must be the case, save perhaps the level of education of the medieval man compared with that of the modern man. Of course, the reason for this is not far-fetched. It is not being contended here that the medieval people did not criticize themselves, but such criticism usually came when a man or some men deviated from the accepted societal norms. In other words, non-conformity with the general social practices attracted condemnation from the rest of the community. In that wise, one cannot say precisely the standard used in criticizing some practices, knowing very well that it was (and it is) possible for a whole community to be mistaken in validating a particular cultural norm or practice. On the other hand, the modern man is equipped with more comprehensive and more sophisticated methods than had been available either in earlier periods of history or in other cultures which make cross-cultural studies more authentic and easier than the medieval days. Again the critic (cultural relativist) may disagree with the above contention saying that the scientific method of the social investigator cannot cover all the cultural facts available in a society. There are, he might argue, many symbolic practices the meanings of which cannot be reduced to empirical investigation. No one disputes this. But, there must still be a way of evaluating such symbolic practices either by placing them together to determine their consistency, or by evaluating them *vis-à-vis* identical practices elsewhere, by bringing them under some objective rational criteria.

It does not seem to me that the primitive peoples of one society actually concerned themselves with any attempt to compare their cultural practices with those of others, a tendency which definitely debarred them from evaluating how rational these practices were in comparison with practices elsewhere. This view, no doubt, shares part of what Horton has called the non-awareness of alternatives on the part of traditional cultures. Some might even say that my view again echoes the open-closed dichotomy between Western (scientific) and traditional societies respectively. As a matter of fact, I do not know to what extent I can dissociate myself from this view once it is argued that ‘external’ criteria or standards cannot be appealed to in assessing or evaluating a particular culture. Once such comparative procedures, empirical data, are precluded in the study of cultures, then, we are left with nothing but cultural relativism. It may amount to an overstatement if we say, as Wilson says, that sociologist is conscious of the importance of eliminating emotional elements in his concepts. This may not be the whole truth. It cannot be conclusively proved that every sociologist would always do this. But the fact remains that even if such an investigator brings in emotion in his study, this can quickly be detected by other social investigators once there are established objective criteria of assessing such a belief system.

We would like to argue that what actually places him at a vantage point than the primitive man is his reliance on scientific method of enquiry. Not all sociologists embark on the study of the so-called primitive cultures. With his grasp of the objective principles of enquiry, the sociologist can undertake the study of his own culture and still come out with an objective assessment of how rational such practices are. The trouble is with Africans and other Third World Countries seeing such principles as 'Western' principles of assessment thereby rejecting them as being imported to evaluate their culture. On the other hand, some social investigators are guilty of thinking that their pre-occupation is with the study of primitive cultures, forgetting that their cultures too are susceptible to such a comparative study or analysis.

Similarly, the argument that if it is a question of spontaneous understanding of cultural practices, the participants may be said to 'understand' better than the sociologist, does not do anyone good. Scientific principles are not designed for spontaneous understanding. If our quest is the determination of the rationality of cultural practices, then, placing emphasis on spontaneous understanding will be otiose. On the other hand, the social scientist is not completely incapable of spontaneous understanding of cultural practices but he has to put this behind him and carry out his researches scientifically. What I am saying is that spontaneous understanding is not a monopoly of the participants. It will be problematic to determine how authentic such an understanding is, as well as how such an understanding is to be explained, at least to someone who does not share similar spontaneous understanding. If it is argued that the thought-processes of Western man is more rational than that of his traditional counterpart, this might be as a result of the former's employment of formally rational procedures of thought and action as argued by Wilson. There is nothing for the so-called primitive man, or even for the contemporary African to be ashamed of in this. Africa, and of course, the so-called Third World countries are only passing through a stage in history, except perhaps we are satisfied with our present stage of development. In so far as we aspire to develop technologically, and if and when we come to that stage of development, most, if not all of our traditional beliefs may be jettisoned or at least modified. There is no cause for the social research to go thus far once he makes a judicious use of his scientific criteria, spontaneous, emotional and biased judgements are already ruled out. As argued earlier, these may not be attributes of all sociologists yet, this is what they ought to do, or more appropriately, this is what their scientific principles demand of them. It is an objective ideal they ought to imbibe. Then, the monstrous question bounces back again asking: whose are these so-called scientific or objective principles or criteria? My answer is simply 'Nobody's' or 'everybody's'. That some objective standards are formulated in a particular geographical environment for cross cultural studies does not make such principles that of the society in which they are formulated. Rather, it will be a product of scientific endeavour, thrown open for debate and criticism, and this criticism may come from anywhere, traditional societies not precluded provided a similar equally objective criteria are appealed to.

Gellner (1970:18-49) has however argued that if the sociologist were to insist on imposing categories of rationality explicitly to judge (religious) belief systems, he might from certain points of view blind himself to social and sociological operation and potency of non-rational propositions. This might be true to some extent. What Gellner calls non-rational propositions are what we have earlier referred to as either symbolic expressions or internal relations, or again, non-discursive ideas. But this is not to say that religious beliefs or practices are not things that can be assessed rationally, or at least, the principles or procedures towards realizing the objectives of such religious practices. If we are to

view the world as much as possible from the standpoint of the primitive men themselves when they were the object of study, then, one wonders the number of standpoints from which we have to view this same world when it comes to assessing the rationality of some particular cultural practice. Apart from the fact that such an approach may be detrimental to comparative studies, it is not clear whether from such diverse standpoints, it will not be possible for us to evaluate one standpoint against the other within such a primitive culture, and secondly, and on a larger scale, evaluating them vis-à-vis other cultures, namely, scientific cultures where similar or even identical beliefs are in practice. All said, I am not here defending an absolutist conception of scientific enquiry. For if we take the sociologist's research findings as the best we can have at the moment (at least in comparison with the emotional and spontaneous interpretations given by the empathic or functionalist theorist), realizing that these findings are themselves capable of modification in future, due perhaps to the discovery of more advanced method of social inquiry, rather than seeing them as the final truth there is, then the type of skepticism that is often brought against such findings might be less severe as it has been so far.

Let us now look at the question of what it is to understand an alien culture and the implication which this has on making value judgements. Understanding in Winch's sense is grasping the point or meaning of what is being done or said. And Winch believes that this notion of understanding is far removed from the world of statistics and casual laws. It is closer to the realm of discourse and internal relations that link the parts of a realm of discourse. This notion of understanding the meaning of what is being done in an alien culture poses some problems. There seems to be no way by which an alien comes to a particular culture can be said to 'understand' the meaning of the propositions expressing the cultural facts of that culture except by living with the natives and doing things the way the natives do their things and learning what they mean when they utter a particular word. Winch seems not to buy our idea that even though the social investigator may not understand the symbolic demonstration involved in a particular practice, yet he may come to understand through the study of the procedure employed towards doing it. It seems to me that what Winch may be seen as rejecting here is the theoretical models (what we have referred to as the objective principles) adopted by the social investigator rather than the participants, that is, the natives. But this is begging the question. We have argued that such theoretical models, frameworks, or constructs are not those of the investigator, but ones which are objectively established and which the social scientist is now employing as tools for cross-cultural studies. Were it possible for the participants to devise some objective and empirical procedures of assessing how rational their belief system is, then, those of the investigator will have to be placed side-by-side with those of the natives, and the scientifically better ones adopted. In this process, the question of cross-cultural evaluation is not in any way abandoned. One implication of those possible criteria coming from the natives is that both parties may even come to reject some of the criteria initially adopted by each of them for a harmonization of others from both sides. It is true to some extent that human relations in primitive societies are internal, but, Winch, and others like him, seem to me to have over-stressed this factor in cross-cultural study. However, it is not our contention here that the holier than thou attitude is a better alternative to empathic study. As a matter of fact, once the anthropologist who is billed to study, say, the magical practices among a particular traditional people, starts out with the initial assumption that 'in fact there are no such things as magic, for magic is but a fiction', it will not be difficult to predict what the outcome of such a research will look like. What such an investigator will be out to detect is how 'these people fail to see the

futility of their action', which will consequently portray them as, if not completely irrational, but at least non-rational. Evaluation of the reality or non-reality of magic or witchcraft has to come after the social investigator must have employed all the objective criteria in his armory but surely not before then. I do not want to argue as some would, that reality is language dependent. Far from this, I believe that the reality of a particular cultural belief or practice may be shared by many cultures with diverse languages.

Contrary to Winch's view, it is not the fascination science has for us that makes it easy for us to adopt scientific form as a paradigm against say, empathy or functionalism, that makes it preferable to us. It is a question of the verifiability, hence confirmability or falsifiability of the hypotheses of science. And these hypotheses are not that of a person or group of persons, or even of any culture. Even then, there seems to be no way of assessing idiomatic or symbolic expressions without first of all establishing the criterion or criteria through which this can be done. Winch (Ibid:93) is of the belief that the European is committing a category mistake, for, there are levels in the context in which the beliefs in witchcraft and scientific thoughts operate. Assuming there are levels of understanding or comprehension, the question may still be asked as to the one that is higher, hence preferable on the scale of rationality. Any attempt to argue for a separate theoretical framework for the primitive man does him no good. If there are some scientific criteria for evaluating the rationality of a particular cultural practice, then, there is no need dodging the judgement that anything – any practice – that does not conform to such criteria are to be considered non-rational. Our judgement, or evaluation cannot be said to be subjective for it is based on scientifically tested hypotheses. This brings us to the question of whether, after a proper understanding of the cultural practices of the natives, the social researcher cannot still pass value judgements on such practices. Those who argue that we must put ourselves in the place of the participants seem to rule out the possibility of condemning such a practice, rather, they believe that putting ourselves in the place of such participants will enable us to appreciate the reality of what is involved in such practices. If we adopt this method, then, different practices will be appreciated on their own bases and they will be accepted as ultimate. Roger Trigg (1973) equally shuns a situation where reality is made to depend on what groups of people happen to believe. We may argue here that if beliefs in a culture are related to those of others, we can evaluate them on the basis of the relatedness. If understanding a culture means asking the natives' view on a particular cultural practices, or living in their midst, then, we cannot understand more than the contemporary cultural practices amongst the primitive peoples of this world. This is so bearing in mind that we cannot go back to the days of our ancestors and ancestresses in order to understand them. If an African sociologist should undertake the study of an alien culture, there is no way by which we can 'clean' himself of his 'Africanness' to become somebody other than himself so as to understand that culture. The same may be said of a European studying a traditional African culture. This process is not even required for a proper understanding of an alien culture, once there are procedures and principles for assessing or evaluating how rational such practices are. Try as we can, we cannot become Europeans overnight neither can a European become an African so as to understand each other's culture.

Conclusion

Our argument in this paper is that, for the simple fact that the social investigator embarks on cross-cultural studies at all, he cannot sever his findings from value judgements. This is what Wilson (op. cit) refers to as the sociologist's in-built bias which

is professionally unavoidable. “Whatever effort is exerted, in undertaking research we cannot shed our values in the way we remove our coats.” Again, ‘values steer, as it were, the process of discovery, but they do not gain or lose plausibility by it’ (Taylor: 1969). Critics of value judgements in the social sciences might argue that, once the social investigator has harmed himself with certain framework, he is therefore led to a process whereby he affirms some dimensions of variation in social facts and denies others. Of course the purpose of coming with a method at all is to enable him to sift those cultural practices that are rationally grounded from those that are not. The scientific principles or criteria give us the geography of the range of cultural phenomena, and the procedural steps toward ascertaining the rationality of each phenomenon. This is a process of eschewing bias and of achieving objectivity. It may be argued that a value-free sociology sacrifices reason at the altar of romanticism. It is professionally impossible for sociologists to exclude completely their non-scientific beliefs from their scientific work. “If this is regarded as falling out of the competence of the sociologists does it mean that sociologists cannot...do not, or should not make judgements concerning things outside their sphere of technical competence?” (Gouldner: 1973). We may even argue that technical competence has nothing to do with making of value judgements.

It is not uncommon nowadays to hear from those supporters of value-free sociology to appeal to Max Weber’s works in their argument for the position they are defending. This appeal appears quite illegitimate. Though Weber insisted on the need to maintain scientific objectivity, he also warned that this was altogether different from moral indifference. He warned that one should however be cautious about the value judgements he makes if he is going to make any. According to Gouldner (Ibid), the kind of freedom which the value-free doctrine (of Weber) allowed is the one that enhanced a freedom from moral compulsiveness: it permitted a partial escape from the parochial prescriptions of the sociologist’s local or native culture. Above all, effective internalization of value-free principle has always encouraged at least a temporary suspension of the moralizing reflexes built into the sociologist by his own society. It is not even clear whether or not this class of scholars would still allow the social investigator to make value judgement outside his specialized field of study. That is to say, whether the social investigator is prohibited from making value judgements simply because he is engaged in the study of another culture, or whether this must be his permanent characteristic. On our part, we consider it a sort of escapism if the sociologist should neglect the moral aspect of his profession. It also shows a sign of incompleteness as far as such a study is concerned. Sociologists, then, by their training, are debarred from criticizing their own societies as well as the ones they study. Perhaps it is not even for the love of the so-called primitive societies that some sociologists abstain from passing value-judgements, but for the fear of their published works being criticized or condemned as being prescriptive in nature, which may be said to have departed from scientific (objective) way of carrying out such studies. I am aware of the fact that emotional excess on the part of the social scientist may lead to an abuse of his scientific research, on the other hand, he cannot completely ignore his emotions, though if these are brought to bear heavily on his work, just as we have already argued, it may be easily detected and expunged. At the same time, more skepticism or indifference is not a better alternative to a value-laden cross-cultural study. Science (social science inclusive), can even serve as a basis for value judgements because of its objective nature. Here now are some of what I take to be the criteria of objective cross-cultural study. They are meant to be theoretical guidelines both for the researcher and the people of the culture under study, and none of

these two parties may lay claim to the ownership of such criteria. Suggested theoretical principles or criteria for an objective cross-cultural studies.

1. Both the cultural practices as well as the results of the study must be open for public consumption and criticism. Consequently they must be devoid of superstition, secrecy and metaphysical assumptions.
2. There must be consistency in the cultural beliefs, practices, etc. as well as in the researcher's judgements. It is possible to detect the inconsistencies in somebody's judgements, beliefs, assumptions, etc. by bringing together his current and previous judgements, etc. on certain issues. There may have occurred certain changes due to certain developments, but the people must agree that there was an initial mistake in the earlier beliefs, etc. and not that two conflicting beliefs are true.
3. While the natives must not see the researcher as an intruder or invader employing 'external' criteria in studying their culture, in the same spirit, the researcher should not exhibit any traces of 'holier than thou' attitude. Also, the latter should not believe that he is on a 'civilizing mission' to the 'primitive people'. Rather, he should do his job professionally and scientifically.
4. Both parties must have good reasons for their beliefs, practices, inferences, conclusions, suggestions and recommendations. A good reason in this context may be construed to mean a reason supporting an action, a belief or conviction and that reason is stronger than any other of the reasons supporting action, etc; in conflict with the former. In short, a good reason is one that is overriding or countervailing.
5. Arising from our No. 4 above is the demand for ability and readiness to justify one's belief in something (cultural practices, convictions, etc). This criterion involves ability to justify one's views, assumptions, presuppositions, etc in which case one would avoid the old escapism of 'that is how our ancestors or ancestresses had been doing, believing, worshiping, etc...'
6. One may be said to have a reason to perform an action if its objective is worth wanting, and this includes giving consideration to the good of everyone alike. In that wise, one is not doing things merely on the rules of the thumb, but one must be acting on principle. My view on this criterion corroborates Kurt Baier's (1975: 34) who has argued that it is in virtue of their capacity to learn to engage in such activities as justifying, arguing, proving, explaining and deliberating that men are called rational. And finally,
7. No special concession is given to, or demanded by, Africa or any of the so-called primitive or preliterate cultures in the assessment of the level of rationality of their cultural beliefs and practices. One has in mind here the so-called "rational framework" suggested for Africa by the French philosopher, Henri Maurier. In this paper, the same theoretical framework is advocated for all cultures under the social researcher's searchlight

As already argued in the paper, the above itemized criteria are not meant to serve only the Western researchers in their bid to study particular cultures, whether in Africa or elsewhere. They are equally useful for Africans who are engaged in cross-cultural studies both in and outside Africa. It is our strong belief that if those who are engaged in cross-cultural studies can grant this minimum concession, then, they may come to realize that most of the arguments against passing value judgements in social sciences have been

misplaced. What is more, such realization would go a long way in reinforcing our thesis that value-judgement in the social sciences is but a myth.*

*I am very grateful to Late P.O. Bodunrin for his helpful comments on and criticisms of the draft of this paper.

Notes and References

1. Bryan R. Wilson: (ed.) Rationality, Oxford, B. Blackwell, (1970), viii.
2. Rationality, op. cit., ix.
3. "Concepts and Society", in Rationality, op. cit., pp. 18-49.
4. Op. cit., p. 93.
5. Roger Trigg: Reason and Commitment: Cambridge University Press: Cambridge, New York, New Rochelle, Melbourne, Sidney, 1973. p. 3.
6. David Easton: The Political System: New York: Knopf, p. 225.
7. Charles Taylor: "Neutrality in Political Science" from Philosophy, Politics and Society, 3rd Ser., ed. Laslett and Runciman, (Oxford: Blackwell, 1967), pp. 25-57. The quote is on p. 141 of my handout.
8. Alvin W. Gouldner: "Anti-Minotaur: The Myth of Value-Free Sociology". In Alvin W. Gouldner for Sociology: Renewal and Critique in Sociology Today, Basic Books Inc., Publishers New York (1973) p. 3.

Bibliography

Beattie, John, Other Cultures (1964) London: Cohen and Est. Understanding African Traditional Religion: A comment on Horton" in Second Order: An African Journal of Philosophy. Vol. 11 No. 2, July 1973.

Brodbeck, May, (ed.) (1968). Reading in the Philosophy of the Social Sciences, Macmillan Publishing Company Inc., New York.

Gouldner, Alvin, W. (1973): Alvin W. Gouldner for Sociology: Renewal and Critique in Sociology Today, Basic Books INC. Publishers, New York.

Hallen, Barry, "Phenomenology and the Exposition of African Traditional thought", Second Order, Vol. v, No. 2, July 1976.

_____, "Robin Horton on Critical Philosophy and African Traditional Thought", Second Order, vol. v., No.1, January, 1977.

Horton, Robin, "Understanding African Traditional Religion: A Reply to Beattie", Second Order, vol. v. No. 1, January, 1976.

_____, "Philosophy Department: A Comment on the Current Debate", Second Order, vol. vi. No. 1, January, 1977.

Laslett and Runciman, (eds) (1967); Philosophy, Politics and Society, Third Series, Oxford: Blackwell.

Trigg, Roger: (1973); Reason and Commitment, Cambridge University Press, Cambridge, London, New York.

Wilson, Bryan R. (ed.) (1970); Rationality, Oxford, B. Blackwell.

Emotional Intelligence and Subject Major Specialization as Predictor for Practicum Performance

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Abstract

The purpose of this research was to examine the extent to which emotional intelligence predicts practicum performance among the teacher trainees of Bachelor of Teaching Programme 2008 January Intake at Teachers' Education Institution in Malaysia. The instrument for measuring emotional intelligence is BarOn Emotional Quotient Inventory (EQ-i) 133 item. It measures all the five EQ Composite Scale Scores such as Interpersonal EQ, Intrapersonal EQ, Adaptability EQ, Stress Management EQ and General Mood EQ. The level of emotional intelligence of the teacher trainees is determined based on the Interpretive Guidelines for BarOn EQ-i Scale Scores. A total of 382 teacher trainees were selected from five different zones of the Teachers' Education Institution. These teachers were from nine different subject major specialization. Findings shows that 62.8 percent of the teachers scored low level emotional intelligence. Composite Interpersonal EQ scores was the only factor that was able to determine the predictability of practicum performance among the teacher trainees of Bachelor of Teaching Programme 2008 January Intake. A model for emotional intelligence together with respective subject major specialization were formed as the predictor for practicum performance.

Keywords: Emotional intelligence, EQ Composite Scale Scores : Intrapersonal EQ, Interpersonal EQ, Adaptability EQ, Stress Management EQ, General Mood EQ, Subject major specialization, practicum performance.

1.0 Introduction

In Malaysia, all primary school teachers are trained by Institution of Teacher Education under the Ministry of Education, Malaysia. There are a total of 27 Institution of Teacher Education in Malaysia. Under the programme of Bachelor of Teaching Programme, teacher trainees are trained for 4 years (8 Semesters) to obtain a degree in Teaching. All the teacher trainees will then be posted to primary schools as graduate teachers. All the teacher trainees undergoing training at the Institution of Teacher Education will be assigned a subject major specialization in accordance to their entrance examination qualification. All the courses related to the subject major specialization will be taught as compulsory, core and other supporting elective papers. All teacher trainees need to undergo practicum training as part of the core subjects. The full time Bachelor of Teaching Programme requires all the teacher trainees to fulfill three phases of practicum which consists of Practicum 1 (duration of 4 weeks), Practicum 2 (duration of 8 weeks) and Practicum 3 (duration of 12 weeks). To perform well in their practicum training, the trainees need to transform all their content and pedagogical knowledge which they acquire during the courses interaction into practical practices. To enhance their practicum performance, the element of emotional intelligence plays a vital role in developing teacher professionalism. Unfortunately, emotional intelligence is not a subject offered in the curriculum structure of the Bachelor of Teaching Programme.

According to Brearley (2004), the control centre of learning is our emotions. They are the enablers and paradoxically the constrainers of what and how we learn. As for the teacher trainees, it is critical for them to learn to use and practice emotional intelligence during their practicum training as they will be facing many challenges in the classroom that involves behavioural problem, classroom management, decision making and problem solving. With the knowledge and practices of emotional intelligence competencies in the classroom, it will definitely facilitate the trainees in overcoming these challenges and able to perform their best in their teaching. As a result of this, it will certainly enhance their practicum performance results. As BarOn (2002) employed the term 'success' *as the end-product of that which one strives to achieve and accomplish*, as in this study, obtaining high marks in practicum performance.

2.0 Research objectives

Findings from Hwang (2007) related to the role of emotional intelligence skills in teaching effectiveness and career excellence. Lifelong programme on emotional intelligence skills facilitate the development of a harmonious learning environment. Razali Ismail (2003) stresses emotional intelligence need to be taught in teacher training institution as it'll be able to develop more holistic aspects of teachers and eventually produces quality and effective teachers. Not many studies relating emotional intelligence with practicum were done, especially in the scope of the teacher training institution in Malaysia, therefore this study is an important contribution to the literature in that it appears to be the first study to predict practicum performance with the association of emotional intelligence with the trainees subject major specialization. With reference to BarOn Emotional Intelligence Model, objectives of this studies are :

1. To determine the difference in total EQ scores and scores for five composite scales that is measured by BarOn EQ-i among the teacher trainees in the Bachelor of Teacher Programme January Intake 2008.

2. How well do the composite scales of BarOn EQ-i and subject major specialization predict practicum performance of teacher trainees in the Bachelor of Teacher Programme January Intake 2008.

3.0 Methodology

Using stratified sampling, from 27 Teacher Education Institutions in Malaysia which were distributed into five different zones which consists of Northern Zone, Central Zone, Southern Zone, Eastern Zone and Sabah & Sarawak Zone. A specific college is then chosen from a random sampling to represent the respective zone. All the teacher trainees of the Bachelor of Teacher Programme of January Intake 2008 in the selected college were taken as samples.

The independent variable in this research is emotional intelligence. The emotional intelligence of the teacher trainees is measured based on BarOn Emotional Intelligence Model. BarOn emotional intelligence Model which consists of five specific EQ Composite Scale Scores which are Intrapersonal EQ, Interpersonal EQ, Adapatability EQ, Stress Management EQ and General Mood EQ. The scores for each composite scales tabulated are group as continous data. The emotional intelligence for each teacher trainees are measured using the BarOn EQ-i 133 items.

Another independent variable concern is the teacher trainee's subject major specialization. The subject major that were selected in the samples were teacher trainees majoring in Mathematics, Physical Education, Learning Disablities for Special Education, Science, Social Science, Chinese Language, Pre school Education, Visual Art Education and Music Education. The scores for each of these major specialization are group as categorical data.

The dependent variable for this research is the practicum performance marks for the trainees who have completed the three phases of practicum required by the full time Bachelor of Teacher Programme in the January Intake 2008. Practicum performance achievement of the trainees is measured on the assessment agree upon by both the guidance teacher and guidance lecturer of the trainees based on the Competency Assessment PR2 Form used in assessing practicum performances.

4.0 Research Findings

Table 1 illustrates the descriptive analysis of the respondents profile as accordance to gender, race and subject major specialization

Table 1.0

Frequencies and percentage of the respondents based on gender, race and subject major specialization.

	Frequency	Percentage
<u>Gender</u>		
Male	124	32.5
Female	258	67.5
<u>Race</u>		
Bumiputera	351	91.9
Chinese	26	6.8
Indian	5	1.3
<u>Subject major specialization</u>		
Mathematics	67	17.5
Physical Education	98	25.7
Learning Disabilities (Special Education)	85	22.3
Science	47	12.3
Science Social	18	4.7
Chinese Language	16	4.2
Pre School Education	16	4.2
Visual Art Education	19	5.0
Music Education	16	4.2

N - 382

EQ-i raw scores are converted into standard scores based on a mean of '100' and a standard deviation of 15. All standard scores of the respondents are then interpreted as in Table 2.0 Interpretive guidelines for BarOn EQ-i Scale Scores (BarOn, 2003)

Table 2.0

Interpretive guidelines for BarOn EQ-i Scales Scores

Standard Scores	Interpretive Guidelines
130+	Markedly High – a typically well developed emotional capacity
120 – 129	Very High – extremely well and developed emotional capacity
110 – 119	High- well developed emotional capacity
90 – 109	Average-adequate emotional capacity
80 – 89	Low-under developed emotional capacity, requiring
70 - 79	improvement
Under 70	Very Low-extremely under-developed emotional capacity, requiring improvement
	Markedly Low-atypically impaired emotional capacity, requiring improvement

Table 3.0

Composite EQ scores and Total EQ scores obtained from samples in number and percentage in category of Low, Average and High EQ scores (N=382)

Scores	Low EQ scores (scores from 89 and below)	Average EQ scores (scores between 90 to 109)	High EQ scores (scores from 110 and above)
Intrapersonal EQ	232 (60.7%)	143 (37.4%)	7 (1.8%)
Interpersonal EQ	210 (55.0%)	165 (43.2%)	7 (1.8%)
Stress Management EQ	183 (47.9%)	179 (46.9%)	20 (5.2%)
Adaptability EQ	230 (60.2%)	144 (37.7%)	8 (2.1%)
General Mood EQ	115 (30.1%)	237 (62.0%)	30 (7.9%)
Total EQ	240 (62.8%)	140 (36.6%)	2 (5.0%)

Almost 60% of the samples scores low EQ scores category (from score 80 to 89) for total EQ scores. Three composite scales as Intrapersonal EQ, Interpersonal EQ and Adaptability EQ, with the percentage 60.7%, 55% and 60.2% respectively, in the sample also shows Low EQ scores, 47.9% teacher trainees shows Low EQ scores and 46.9% shows Average EQ for composite scale stress management. About 62% respondent falls in the Average EQ scores for composite scale General Mood EQ.

To determine the factors that predicts practicum performance among teacher trainees in the Bachelor of Teaching Programme, a linear multiple regression analysis is carried out to answer the research question; How well do the two measures (composite scales of BarOn EQ and subject major specialization) predict practicum performance ?

Table 4.0

Results of Stepwise Multiple Regression on composite construct of BarOn EQ-i with the relationship of practicum performance of teacher trainees of Bachelor of Teacher Programme in the January Intake 2008

Variable	Value	Std Error	Beta	t value	Significant
Intercept	76.199	2.375		32.085	0.000
Composite scale Interpersonal EQ	0.074	0.027	0.139	2.738	0.006

$p < 0.05$

$R^2 = 0.019$, $F(1,380)$, $= 7.498$, $p = 0.006$

Using Stepwise Multiple Regression, analysis of data shows only one contributing variable of the five composite construct BarOn EQ-i, that is Interpersonal EQ is making a significant unique contribution to the prediction of the dependent variable, practicum performance. Interpersonal EQ of the five composite construct of BarOn EQ construct is the only construct that makes contribution to explaining the dependent variable (Beta = 0.139, $t = 2.738$ and $p = 0.006$). The result of the analysis above concludes Interpersonal EQ as one of the five composite BarOn EQ-i explains 1.9% ($R^2 = 0.019$) of the variance in practicum performance.

To evaluate the relationship between the predictor of practicum performance with composite scale Interpersonal EQ and the teacher trainee's subject major specialization. another model of the Linear Regression is constructed using R (R Development Core Team, 2011). Preliminary analyses were conducted to ensure no violation of the assumptions of normality, linearity, multicollinearity and homoscedasticity. A new model of emotional intelligence that predicts practicum performance with the additional variable of trainees subject major specialization is constructed as below :

Practicum performance – composite scale Interpersonal EQ + subject major specialization.

Results obtained is explained in Table 5.0

Table 5.0

Results of Multiple Regression on composite construct of BarOn EQ-i and subject major specialization with the relationship of practicum performance of teacher trainees of Bachelor of Teacher Programme in the January Intake 2008

Variables	Value	Std Error	t value	Significance
Intercept	77.25417	2.33878	33.032	<2e-16***
Interpersonal EQ	0.07347	0.02640	2.783	0.005662***
Physical Education	-1.95393	0.67247	-2.906	0.003885**
Learning Disabilities for Special Needs	-2.45202	0.70519	-3.477	0.000567***
Science	-2.06415	0.87672	-2.354	0.019071*
Pre School	5.00010	1.40207	3.566	0.000409***
Mandarin Language	3.19294	1.40610	2.271	0.023732*

p<0.05

$R^2=0.1061$, $F(9,372)$, $=4.905$, $p=3.144e-06$

Models were constructed on the basis of theoretical considerations, and tested for violations of the regression Model assumptions. Additional variables and interactions were tested to see if their inclusion in the model improved the model fit (Hutcheson & Sofroniou, 1999). For the variable subject major specialization is deviation coded (i.e. sum contrasts). The term 'sum contrast' refers to a type of dummy coding in which for this study each subject major specialization is compare with the average of all the subject major specialization. 'Dummy coding' basically consists of creating dichotomous variables where each level of the categorical variable is contrasted to a specified reference level. For example, out of the nine subject major specialization, Mathematics was chosen as the reference group and compare to the mean of variable for each of the other subject major specialization. The model would not produce any estimates for the Mathematics specialization group. The regression parameter for the dummy variables for the specialization remain constant, irrespective of which subject major specialization is chosen as the reference category. (Hutcheson and Sofrionou, 1999) To obtain the regression parameter estimates for Mathematics, the analyses are carried out with another subject major specialization as the reference category. Only the subject major specialization which is statistically significant is shown in Table 5. The result of the analysis above concludes Interpersonal EQ and the respective subject major specialization explains 10.61% ($R^2= 0.1061$) of the variance in practicum performance as compare to the previous model of just composite scale Interpersonal EQ with the prediction of practicum performance.

A Model for the prediction of practicum performance with respective coefficients of composite scale and subject major specialization is constructed as follows :

Practicum performance - 77.25 + 0.074 Composite scale Interpersonal EQ + 5.000 Pre school Education + 3.192 Chinese Language Education – 1.953 Physical Education – 2.064 Science Education – 2.452 Learning Disabilities for Special Education

Interpretation of the model is as follows:

Average of the practicum performance marks of an average Interpersonal EQ students is 77.25. Mean of an average Interpersonal EQ students increase by one unit will give an increase of 0.074 marks in the practicum performance. Mean of the Pre school Education student is 5.00 points higher than the average Interpersonal EQ and the average practicum performance mark. Mean of the Physical Education student is 1.953 points lower than the average Interpersonal EQ and the average practicum performance mark. The same applies for the other subject major specialization.

5.0 Discussion, Implication and Conclusion

The descriptive interpretation gathers from the samples shows 63 percent were categorized in the low category of total EQ (from 80 to 89 scores) based on the Interpretive Guidelines for BarOn EQ-i Scales Scores (BarOn, 2002). This shows that 63 percent of the teacher trainees of the Bachelor of Teaching Programme are low in their emotional intelligence level. The breakdown of the emotional intelligence into EQ Composite Scales Scores also shows that majority of the teacher trainees scores in the low category in the respective composite scales. 60.7 percent for Intrapersonal EQ scores, 55.0 percent for Interpersonal EQ, 47.9 percent for Stress Management EQ and 60.2 percent for Adaptability EQ. As for the Composite Scales Scores for General Mood EQ, 62 percent of the respondents manage to make in the average category. These results perscribes that majority of the teacher trainees in the Teacher Education Institution shows low-under developed emotional capacity and requiring improvement. This results support the findings of Goleman (1998) and BarOn (2003) which states that there is positive correlation between emotional intelligence and age. The age effects suggest that emotional intelligence increases with age, and thus, changes throughout life. Most of the respondents are in the age range from 21 to 23, it shows that there's still much space for development of emotional intelligence throughout their teaching profession and career as a teacher.

The emotional intelligence composite scales scores as Interpersonal EQ in teachers is of crucial importance with regard to the role of teachers in acquiring quality of attention, learning and brain development of the students. Research has proven that learning social emotional intelligence that involves awareness and social skills encourages the brain development especially the frontal lobe that are crucial for both higher level learning and for mature behaviour. (Elias and Arnold, 2006) The ability to communicate and managing own's emotion helps teacher trainees to focus and concentrate on their teaching especially during the practicum training. At the neurological level, teaching can be defined as the facilitation of neuronal growth, organization, and integration, that is, teachers have the potential to play important roles in strengthening, pathways that lead to the integration of affections, language and cognition. Although teaching the content or subject major specialization is important, the process or manner in which the subject major is taught is even more significant. Of particular importance is the manner in which teachers promote emotional literacy, interpersonal

decision making and problem solving in the classroom. The ability to teach the subject major specialization integrating emotional intelligence will enhance the teaching and learning process and thus increase teaching effectiveness in the teacher trainees. This will then have a strong effect on their marks in practicum performance. Furthermore, teacher trainees with good Interpersonal EQ will be able to understand, interact and relate well with others especially with their students, school administrators, guidance teacher and lecturers during their teaching practicum.

Referring to the Handbook of Bachelor of Teaching Programme (2007) there's a significant relevance in the prediction of practicum performance with composite scales Interpersonal EQ and the subject major specialization such as Pre school education, Chinese Language Education, Physical Education, Science Education and Learning Disabilities for Special Needs Education. An indepth look into the curriculum structure of Pre School Education shows the course stresses on affective aspects that involves emotion elements that is related to children and society. Many courses offered in that major specialization focus on the emotion, social, physical, spiritual and moral development of the children. Courses offered such as (PRA 3103-Child Physical,Health and Safety Development, PRA 3106-Creativity Development in Pre School Education, PRA 3107-Social and emotional development of children, PRA 3108- Spiritual and moral development for Pre School and PRA 3112-Parents Involvement in Pre School Education) indirectly infuses knowledge of emotional intelligence through holistic development of children with the involvement of family and community, and also at the same time inculcating interpersonal and social skills. Through this exposure, the teacher trainees pick up the fundamentals of teaching emotional intelligence implicitly.

As for the curriculum structure of Chinese Language Education, trainee teachers were indirectly exposed to the teaching of emotional intelligence through these courses such as BCN 3104 (Children Literature), BCN 3109 (Teaching learning of Listening and Speaking Skills), BCN 3110 (Poems), BCN 3114 (Novel dan Drama).The trainees were taught to teach to and from their personal and past professional, intellectual, artistic and entertainment strengths, infusing it with singing, literature, dancing, writing, whenever their expertise lies through subject major specialization. The curriculum structure for Physical Education emphasis on spirit of cooperation as a group or team as part of their learning outcome. As for the Science Education, the curriculum focus and emphasis on content knowledge. Courses offered in Science Education focus on area of content or license expertise. These trainees maybe good at their content knowledge but lacks in the emotional competence to make effective teaching and learning, thus affecting their marks in the practicum performances. Likewise for Learning Disabilities for Special Needs Education, many courses such as PKB 3101 (Introduction to Learning Disabilities), PKU 3103 (Behaviour Management), PKU 3111 (Issues and Trends in Special Education) look into educating the learning disabilities students including judiciary, characteristics, causes, programs provided and issues arises in educating these children. The process and manner these subject is taught focuses more on content and pedagogical knowledge, emphasis on element of emotional intelligence is very much lacking.

With this findings, it concludes that it is essential to teach emotional intelligence, along with the content of subject matter. Emotional intelligence is not a separate subject area; rather; it must be linked to language literacy, instruction in science, health and physical education and the performing arts. It has to be formally taught as a core subject and also be well integrated in each particular subject major specialization the curriculum

of Bachelor of Teaching Education in the Teaching Institution. Goleman (2008) reveals that student receiving lessons in social and emotional skills improved on every measure of positive behaviour, such as classroom discipline, attendance and liking school-and were less likely to engage in anti-social behaviour, from bullying and fights to substance abuse. Teaching students skills like empathy, self awareness, and how to manage distressing emotions makes them better learners. This principles applies to teachers too as of findings of Hwang (2007) and Ogrenir (2008). Emotional intelligences shows significant positive relationship with teacher effectiveness. The teaching of emotional intelligence in the curriculum of the teacher training institution will produce effective and quality teachers

References :

- BarOn, R. (2002). *BarOn Emotional Quotient Inventory User's Manual*. Canada: Multi-Health Systems Inc.
- BarOn, R. (2003). *BarOn Emotional Quotient Inventory – A measure of Emotional Intelligence Technical Manual*. Canada: Multi-Health Systems Inc.
- Brearley, M. (2004). *Emotional Intelligence in the classroom. Creative Learning Strategies for 11 -18s*. United Kingdom: Crown House Publishing Ltd.
- Handbook of Bachelor of Teaching Programme. (2007). Institut Pendidikan Guru Malaysia, Bahagian Pendidikan Guru, Kementerian Pelajaran Malaysia.
- Elias, M.J., & H. Arnold. (2006). *The Educator's Guide to Emotional Intelligence and Academic Achievement : Social-Emotional Learning in the Classroom*. California: Corwin Press.
- Goleman, D. (1998). *Working with emotional intelligence*. New York: Bantam Books.
- Goleman, D. (2008). The secret to success-New research says social-emotional learning helps students in every way. *Greater Good*, 5(1), 8-9.
- Hutcheson, G., & Sofroniou, N. (1999). *The Multivariate Social Scientist: Introductory statistics using Generalized Linear Models*. London, UK: Sage.
- Hwang, F.F. (2007). *The relationship between emotional intelligence and teaching effectiveness*. Unpublished doctoral dissertation, Texas A & M University-Kingsville and Texas A & M University-Corpus Christi.
- A Guide to Curriculum Structure for Bachelor of Teaching Programme for lecturers and students. Januari 2009 and 2010 Intake. Teacher Training Division, Ministry of Education.
- Publication Manual of the American Psychological Association*. (2007). Fifth Edition. American Psychological Association: Washington DC.
- R Development Core Team. (2011). *R : A language and environment for statistical computing*. Vienna, Austria: R Foundation for Statistic Computing: Retrieved from <http://www.R-project.org>.
- Razali Ismail. (2003). Beyond training : promoting emotional intelligence domain in teacher education. *Jurnal Pendidikan Guru*, 16, 1- 16.

Ogrenir, B. (2008). *Investigating the relationship between preservice teachers' view of teacher effectiveness*. Unpublished doctoral dissertation, The Pennsylvania State University.

The Determinant Factors of Working Capital Requirements for Enterprise 50 (E50) Firms in Malaysia: Analysis Using Structural Equation Modelling

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Abstract

The purpose of this paper is to examine the factors that determine the working capital requirements of firms in Malaysia focusing on Enterprise 50 (E50) firms. E50 is an annual awards program initiated by government and organized by SME Corporation and Deloitte Malaysia since 1997 to recognize the 50 best SMEs based on their performances and potential to succeed. Over the years, the E50 award programme has been recognised by industries as a prominent award that symbolises achievements in business and entrepreneurship. Therefore it is imperative to look at the working capital management of these companies. In addition, working capital is important area in financial management because it reflects the management of short-term assets and liabilities of the firms with the maturities of less than a year, represent the main share of items on a firm's balance sheet. While the working capital was used as dependent variable, other factors such as growth of the firm, profitability, debt, size and industry were used as Independent Variable (determining factors) of the working capital. The study is done on 285 E50 firms based on accounting data of three years from 2006 to 2008 which have been transformed from ratios to likert type to get normal distribution of the data. The analysis using Structural Equation Modelling (SEM) technique of Partial Least Squares will focus on the significant of the independent variables. The result found that tangibility of assets; debt; profitability; and non-debt tax shield are the main determinant factors in working capital requirements.

Keywords: Working Capital, Determining Factors, Data Transformation, Structural Equation Modelling, Partial Least Squares

Introduction

Working capital refers to the availability of the net current assets of the business for its operations. Typically, the most known components of working capital are inventory, accounts receivable and accounts payable. Basically, the working capital is defined as current asset less current liabilities Damodaran (2001). The main objective of working capital management is to maintain an optimal balance between each of the working capital components.

Working Capital is an important area in financial management because it reflects the management of short-term assets and liabilities of the firms with the maturities of less than a year, represent the main component of items on a firm's balance sheet. Furthermore, the management of working capital will affect the profitability and liquidity of the firm (Deloof, 2003). The efficient management of working capital is a fundamental part of the overall corporate strategy to create shareholders' value (Nazir & Afza, 2009). Therefore, firms try to keep an optimal level of working capital that maximizes their value. Working capital management is vital for the survival of the business no matter what is the size of the business.

This study extends the empirical work on working capital management in three ways. First, it focuses on Enterprise 50 which comprises various sizes of companies particularly Small Medium Enterprise (SMEs). Generally, most of the SME assets are in the form of current assets (Teruel & Solano, 2007). Secondly, this paper is applying statistical conversion technique to transform financial data typically in the form of ratio into likert scales to corresponding perceptive financial measures regardless of the form of distribution of data. Thirdly, the study uses a partial least square structural equation modelling technique that have the ability to mitigate the measurement problems encountered when working with proxy variables.

Literature Review

Based on overview of corporate finance literature, Nakamura and Palombini (2012) concluded that there are no robust and widely accepted theories explaining the working capital management. Possibly, the nearest relevant theory is the Pecking Order Theory made popular by Myers and Majluf (1984), which is normally cited to explain internal and external factors that influence the company's optimal capital structure. According to this theory, the firms have a particular preference of order for capital used to finance their businesses. The firm will prefer retained earnings to debt, short-term debt over long-term debt and debt over equity.

On the other hand, some researchers have recently been involved in testing the relationship between working capital requirements and its determining factors. They seek to identify and test various factors theorized to affect working capital in order to find evidence of either positive or negative relationship between these factors and working capital. These studies include Chiou and Cheng (2006); Nazir and Afza (2009); Appuhami (2008); Zariyawati et al. (2010); Mohamad and Saad (2010); and Gill (2011).

In order to examine the relationship, some components have been used as a proxy to working capital. Among others Chiou and Cheng (2006) and Appuhami (2008) used net liquid balance and the most widely used proxy is cash conversion cycle (Mongrut et al., 2007; Zariyawati et al., 2010; Mohamad & Saad, 2010; Vallipour, 2012). Another

commonly used indicator for working capital is net working capital deflated by total assets (Nazir & Afza, 2009; Gill, 2011).

In term of the explanatory variable, debt has been widely tested (Chiou et al., 2006; Nazir & Afza, 2009). They found that the negative relationship with debt level is consistent with the Pecking Order Theory where the business first preference of internal funding, suggesting that companies with more debt aim to work with low level of current assets, to avoid incurring new debt or issuing equity. However in term of growth, performance and size, the authors did not find consistent empirical result on the relationship to working capital requirement.

In the Malaysia context, Zariyawati et al. (2010) investigated the determinants of working capital management of listed firms in Malaysia for the period 2000-2006. Results indicated that firm size, debt, firm growth, economic growth and inflation associates with firm's working capital. In another study, Mohamad & Saad (2010) obtained a sample of 172 firms listed on the Bursa Malaysia exchange over the time period of 2003-2007 and found significant negative relationship between working capital and firm's profitability.

In general, previous studies on working capital management have provided some insights to supports the fact that there are factors which will affect the working capital requirements and ultimately will give impact to the value of the firms. It is interesting to note that all of these studies focused on large listed companies. In reality, efficient management of working capital is very essential in any type and size of the firms since it will reflect the overall corporate strategy in creating shareholder value. Another critical point to be addressed here is the methodological aspects, where all of these studies used accounting data in the form of ratio and Ordinary Least Square (OLS) regression technique for analysis.

According to Rowe and Morrow (1999), lack of normality is common issues in accounting based measures. To overcome this problem Tehrani and Noubary (2005) propose statistical conversion technique, where the ratio derived from the financial statement is converted into likert scales. On the other hand, regression analysis has been commonly used in finance and economics. According to Titman and Wessels (1988), it has limitation of recognizing and mitigating measurement errors and other econometric problems that arise in studies involving estimation of latent variables. Such problems include: ignoring measurement errors in exogenous variables; failing to accommodate models that include latent variables; reciprocal causation among variables; interdependence among variables; and failing to include more than one indicators for a latent variable (Titman & Wessels, 1988).

The following latent variables were hypothesized for testing:

<u>Hypotheses</u>	<u>Reference Literature</u>
H ₁ : Assets Tangibility is negatively related to Working Capital.	Mongrut et al (2007); and Gill (2011).
H ₂ : Debt is negatively related to Working Capital.	Chiou et al (2006); Mongrut et al (2007); Nazir and Afza (2009); Appuhami (2008); Zariyawati et al. (2010); Mohamad & Saad (2010); Gill (2011); and Valipour (2012).
H ₃ : Profitability is positively related to Working Capital.	Chiou et al (2006); Nazir and Afza (2009); Appuhami (2008); Mohamad & Saad (2010); and Valipour (2012).
H ₄ : Growth is negatively related to Working Capital.	Chiou et al (2006); Zariyawati et al. (2010); and Valipour (2012).
H ₅ : Non-Debt Tax Shield is positively related to Working Capital.	New variable to be tested introduced by the author.
H ₆ : Size is positively related to Working Capital.	Chiou et al (2006); Kieschnick et al (2010); Nazir and Afza (2009); and Zariyawati et al. (2010).
H ₇ : There is a relationship between Age and Working Capital.	Chiou et al (2006).
H ₈ : There is a relationship between Industry Type and Working Capital.	Nazir and Afza (2009).

Methodology

The scope of analysis in this study is Enterprise 50 (E50) firms in Malaysia. Since 1997 to 2009, a total of 600 firms have won the award. Taking into account that some firms have won more than once, there are approximately 450 firms available. For the purpose of this study, the researcher managed to get only 285 firms completed secondary data of financial statement from the Companies Commission of Malaysia for the period of 2006 to 2008. Following the previous literature, a proxies of variable is derived from the financial data into the respected ratios (refer to Appendix I). The ratios then have been transformed into likert scale type following method developed by Tehrani and Noubary (2005).

Contrary to the previous study, this paper used Partial Least Square-Structural Equation Modelling (PLS-SEM) approach which has been widely applied in psychology, sociology, education, and marketing but not in finance and economics. PLS has been frequently used in survey-based research. However, PLS is not methodologically fixed to surveys only and can be used with data collected via other medium including secondary

data (Ittner et al.,1997; Papadopoulos & Amemiya 2005; Lee et al. 2011). Titman and Wessels (1988) and Maddala and Nimalendran (1995) are notable exceptions to have applied SEM in corporate finance. Titman and Wessels (1988) employed it to study the determinants of capital structure, while Maddala and Nimalendran (1995) examined the effect of earnings on stock prices.

Similar to Titman and Wessels (1988) approach, Chiarella et al. (1992) adopting SEM technique in analysing the capital structure determinants in the Australian context. Then, Jairo (2008) and Chang et al. (2009) replicated the studies in different context in UK and USA respectively. All the studies claimed that SEM estimation technique has a number of advantages over the traditional regression models particularly its ability to recognize and mitigate measurement and specification errors, which have overwhelmed previous similar studies.

Operationally, all the previous researchers divided their sampling period into three sub-periods as per Table 1:

Table 1: Sampling Period of Previous Research

Authors	Data Period	Sub-Period for Dependant Variable
Titman & Wessels (1988)	1974-82 (9 years)	1977-79 (3 years)
Chiarella <i>et al</i> (1992)	1977-85 (9 years)	1980-82 (3 years)
Jairo (2008)	1985-99 (15 years)	1990-94 (5 years)
Chang (2009)	1988-02 (15 years)	1993-97 (5 years)

Note: The sub-period will be averaged

Then the sub-period was averaged according to the sub-period years. Averaging the sub-period reduces the measurement error due to random year-to-year fluctuations in the variables (Titman & Wessels 1988). However, for this study, since only 3 years data (2006-2008) is available, therefore averaging is not applicable and 2007 will be used as the observed year (dependant variable). Indicators of growth were measured for the period of 2008. By doing this, the realized values as proxies of the value expected when the working capital decision was made. The variables used to measure asset tangibility, debt, non-debt tax shield, age and industry type were measured in parallel with the dependent variable year, i.e. year 2007. The variables used as indicators of size and profitability were taken from the year 2006. Measuring the profitability attribute during the earlier period will determine whether profitability has a short-term effect on observed working capital. Measuring size in the earlier periods avoids creating a false relation between size and working capital that arises because of the relation between size and past profitability since profitable firms will become larger and the short-term relation between profitability and working capital where profitable firms increase their net worth. Measurements of the proxies for the respected variables are listed in Appendix I.

This study extends the previous researchers approach by adopting data transformation and Partial Least Square-Structural Equation Modelling (PLS-SEM) technique. PLS-SEM is a causal modelling approach aimed at maximizing the explained variance of the dependent latent constructs. This is contrary to covariance-based SEM (CB-SEM) objective of reproducing the theoretical covariance matrix, without focusing on explained variance (Hair, Ringle & Sarstedt 2011). The data was analysed using SmartPLS[®] software version 2.0. developed by Ringle, Wende and Will in 2005.

Result

For reporting, two stages of analysis are typically conducted in SEM approach as proposed by Anderson and Gerbing (1988) i.e.: analysis of measurement and analysis of structural model. The measurement model was estimated using confirmatory factor analysis to test reliability and validity of the measurement model, whilst the structural model was analysed to assess magnitude of relationships among the constructs.

Analysis of measurement model reliability and validity

According to Gefen and Straub (2005), two elements of factorial validity need to be examined in PLS i.e. convergent validity and discriminant validity, because these are the components of a larger scientific measurement concept known as construct validity. Construct reliability will indicate adequate measurement of all construct (Bagozzi & Edwards, 1998). This can be assessed by means of the construct reliability which requires indicators assigned to the same construct to show a strong mutual association. Therefore, the Composite Reliability (CR) can be used to check how well a construct is measured by its assigned indicators. A commonly acceptable threshold value for CR is 0.7 or more, however values below 0.7 also have been considered acceptable (Hair et al, 2010). For example Sridharan et al. (2010) use value of 0.5 as a minimum cut-off for CR. Following Bagozzi and Yi (1988) this study set 0.6 as a minimum cut-off for CR.

Table 2: Results of Measurement Model

Constructs	Items	Convergent Validity		
		Loading	CR ^a	AVE ^b
Working Capital	WC1	0.98	0.98	0.96
	WC2	0.98		
Asset Tangibility	T1	0.98	0.98	0.97
	T2	0.98		
Debt	LV2	0.89	0.93	0.78
	LV3	0.88		
	LV4	0.95		
	LV5	0.82		
Profitability	P1	0.96	0.93	0.87
	P2	0.91		
Growth	GR1	-0.58	0.06	0.45
	GR2	-0.57		
	GR3	0.83		
Non Debt Tax Shield	NDTS1	0.59	0.65	0.49
	NDTS3	0.79		
Size	SZ1	0.75	0.87	0.78
	SZ2	0.99		
Age	AGE	1.00	1.00	1.00
Industry	IND	1.00	1.00	1.00

Note:

^a Composite Reliability (CR) = (square of the summation of the factor loadings)/[(square of the summation of the factor loadings)+(summation of error variances)].

^b Average Variance Extracted (AVE) = (summation of the square of the factor loadings)/[(summation of the square of the factor loadings) + (summation of error variances)].

The results of measurement model are shown in Table 2. According to Chin (1998), the factor loading for items exceeds the level of 0.6 is recommended to be retained and below that level should be deleted. Based on the result, some of the items i.e. GR1, GR2 and NDTS1 are still retained because it almost reaches 0.6 recommended levels. Furthermore it can be used for comparison purposes.

Convergent validity is the degree to which multiple items measuring the same construct under the study. A common approach to examine convergent validity is the factor loadings and Average Variance Extracted (AVE). The estimates of AVE for growth and non-debt tax shield were below the 0.50 threshold suggested by Bagozzi and Yi (1988). More specifically, the AVE for the growth construct was 0.45, and for the non-debt tax shield construct, the AVE was 0.49.

Therefore in order to establish the evidence for the discriminant validity, where the degree to which the measures of different concepts are distinct, the shared variance have been compared to AVE as shown in Table 3. The discriminant validity is established between two constructs if the AVE of each one is higher than the squared correlation. Since the AVE values of the two constructs are higher than the squared correlation, discriminant validity among the latent variables was supported (Oliver et al. 2010).

Table 3: Discriminant Validity of Constructs

	GR	IND	LV	NDTS	AGE	PRO	SIZE	TANG	WC
Growth	0.45								
Industry	0.00	1.00							
Debt	0.01	0.00	0.78						
Non Debt Tax Shield	0.08	0.03	0.06	0.49					
Age	0.00	0.00	0.02	0.01	1.00				
Profitability	0.01	0.01	0.01	0.00	0.02	0.87			
Size	0.17	0.00	0.00	0.07	0.16	0.00	0.78		
Tangibility	0.00	0.05	0.00	0.01	0.00	0.02	0.01	0.97	
Working Capital	0.02	0.00	0.35	0.10	0.01	0.07	0.01	0.06	0.96

Note: Diagonals represent the AVE, while the other matrix entries represent the squared correlations

Evaluation of Structural Model

The structural model describes the dependency relationship between the constructs and as presented in Figure 1.

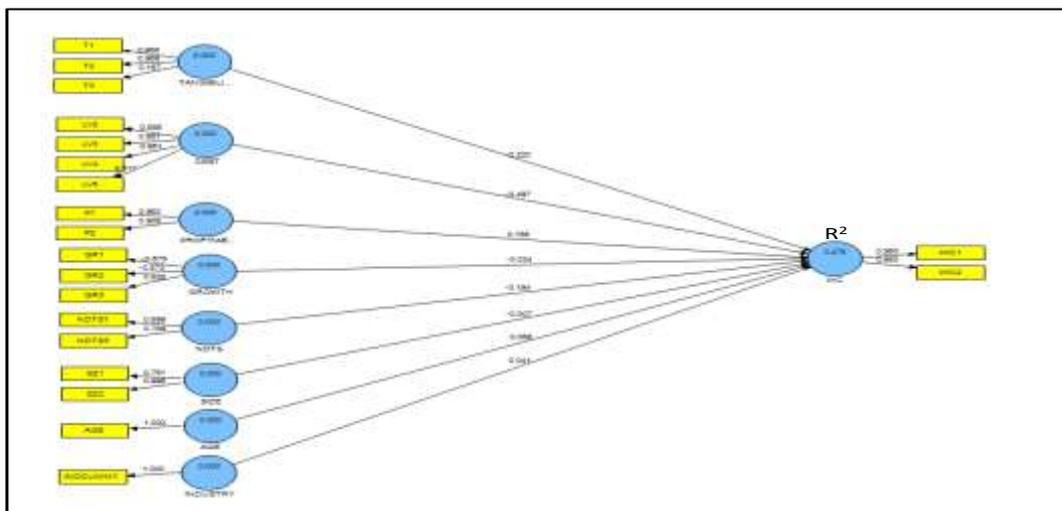


Figure 1: Explanatory Capacity of the Structural Model

Assessment is done on the explanatory capacity of the model and the statistical significance of the various structural factors. Coefficient of determination, R^2 value of 0.476 as explanatory capacity considered substantial (Cohen, 1988). In addition, accounting research frequently used the R^2 as a measure of value relevance (Brown et al, 1999). R^2 from regressions of values on accounting numbers is the subject of numerous studies in accounting and finance.

Apart from R^2 , Q^2 coefficients, also known as Stone-Geisser Q -squared coefficients, named after their principal original proponents can be used as a threshold for predictive relevance (Kock, 2012). The Q^2 coefficient in PLS can be generated from the technique called blindfolding. The rules of thumb by Chin (2010) indicate that a cross validated redundancy Q^2 higher than 0.5 is regarded as a predictive model. The generated result, Q^2 for this model is 0.44 which is below the minimum cut-off of 0.5 indicating that the predictive capacity for this model is less relevance.

After evaluating the explanatory capacity of the structural model, the statistical significance of the various structural coefficients was tested through technique called bootstrapping to generate t-statistic value associated with each path. The outcome is showed in Table 4.

Table 4: Results of Hypothesis Testing

Hypotheses	Path Relationship	β -Coefficient	t-value	Supported
H1(-)	Tangibility → Working Capital	-0.220	4.103	Yes
H2(-)	Debt → Working Capital	-0.496	11.219	Yes
H3(+)	Profitability → Working Capital	0.188	3.777	Yes
H4(-)	Growth → Working Capital	-0.034	0.533	No
H5(-)	Non-Debt Tax Shield → Working Capital	-0.195	3.418	Yes
H6(+)	Size → Working Capital	-0.007	0.122	No
H7(+/-)	Age → Working Capital	0.068	1.310	No
H8(+/-)	Industry → Working Capital	0.041	0.864	No

Note: * $P < 0.05$ (t-value > 1.645)

The result shows that tangibility of assets, debt, profitability and non-debt tax shield have a significant t-value. Therefore, the hypotheses can be supported. The finding in relationship between tangibility of assets and working capital is similar to Mongrut et al (2007). It means that, the companies which are reliance more on intangible assets, will reduce the investment in working capital.

In term of debt, the results indicate that with a rising debt to total assets ratio, the firms are giving more attention to efficient management of working capital to avoid much capital being tied up in accounts receivables and inventories. So, companies with an increasing debt to total assets ratio (high leverage) show lower working capital requirements. That is in accordance with the Pecking Order theory.

From the profit point of view it can be said that firms with higher profits are more concerned with efficient management of working capital.

It is interesting to note that non-debt tax shield have a significant negative relationship with working capital. It means that there are other alternative tax shields such as depreciation, research and development expenses or investment incentives that could substitute the fiscal role of working capital.

The relationship between growth and working capital is not significant. This finding is similar to Nazir and Afza (2009) and Appuhami (2008). In line with finding of Chiou et al (2006), the relationship between size, age, and working capital are also not significant. Contradict to Nazir and Afza (2009), this study unable to find significant relationship between industry type and working capital requirements.

Conclusion

This research aimed to examine the factors that determine the working capital requirements manipulating on ratios data which have been transform into likert scale. The

data have been analysed using partial least square structural equation modelling approach. In SEM approach, validity is a form of construct validity that uses statistical tools that work with factor loadings. The purpose of factorial validity is to show that the constructs which are considered to be made up of certain measurement items are, indeed, made up of those items, and not made up of items posited to be part of another construct. Generally, these tests show the convergent and discriminant validity of the constructs and it seems that the developed model represent the data adequately. Therefore it can be concluded that the identified latent variables i.e. the determinant factors of working capital is valid for testing. The result of the structural model indicate that tangibility of assets, debt, profitability and non-debt tax shield are the main determinant factors of working capital requirements for Enterprise 50 (E50) Firms in Malaysia.

Appendix I

Measurement of the Variables

Variables	Code	Proxy	Literature	Observed Year
Working Capital (Dependent Variable)	WC1	Current Assets - Current Liabilities/Revenues	Damodaran (2001)	2007
	WC2	Current Assets - Current Liabilities/ Expenses	Damodaran (2001)	
Asset Tangibility	T1	Fixed Asset (FA)/TA	Titman & Wessels (1988); Jairo (2008); Chen (2001)	2007
	T2	FA/Total Net Assets (TNA)*	Jairo (2008)	
	T3	Antilog of ratio of intangible assets to TNA	Jairo (2008)	
Debt (Leverage)	LV1	Long Term Debt/Equity	Titman & Wessels (1988); Abor & Biekpe (2009)	2007
	LV2	Short Term Debt/Equity		
	LV3	Total Debt (TD)/ Total Assets (TA)		
	LV4	TD/Equity		
	LV5	Operating Income/ Interest Expenses	Jairo (2008);	
Profitability	P1	Return on TA	Sogorb-Mira (2003)	2006
	P2	Return on Equity	Titman & Wessels (1988); Jairo (2008); Chen (2001)	
Growth	GR1	Investment/ Total Assets (TA)	Abor & Biekpe (2009)	2008
	GR2	Investment/ Sales	Titman & Wessels (1988); Jairo (2008); Chen (2001)	
	GR3	Capital Expenditure/ TA		
Non-Debt Tax Shield**	NDTS1	Depreciation/TA	Titman & Wessels (1988); Bradley et. al (1984)	2007
	NDTS2	Tax/TA		
	NDTS3	NDTS/TA		
Size	S1	Log of Sales (LnSales)	Chittenden et al. (1996); Frank and Goyal (2003)	2006
	S2	Log of Assets (LnAssets)	Titman & Wessels (1988); Jairo	

Variables	Code	Proxy	Literature	Observed Year
			(2008); Chen (2001)	
Age	AGE	From the date of incorporation until 2008	Abor & Biekpe (2009)	2007
Industry Type	IND	Dummy: manufacturing firms=1; non-manufacturing=0	Titman & Wessels (1988)	2007

Nota:

*Total Net Assets (TNA) excluding *depreciation* and *intangibles*.

** Average Corporate Tax in Malaysia =27% for 2006-2008 (World Bank, 2010)

References

- Abor, J., & Biekpe, N. (2009). How do we explain the Capital Structure of SMEs in Sub-Saharan Africa?: Evidence from Ghana. *Journal of Economic Studies* 36(1), 83-97.
- Anderson, J. C., & Gerbing, D. W. (1988). Structural Equation Modeling in Practice: A Review and Recommended Two-Step Approach. *Psychological Bulletin*, 103, 411-423.
- Appuhami, B. A. R. (2008). The Impact of Firms' Capital Expenditure on Working Capital Management: An Empirical Study across Industries in Thailand. *International Management Review*, 4(1), 8-21.
- Bagozzi, R. P., & Edwards, J. R. (1998). A general approach for representing constructs in organizational research. *Organizational Research Methods*, 1(-), 45-87.
- Bagozzi, R. P., & Yi, Y. (1988). On the evaluation of structural equation models. *Journal of the Academy of Marketing Science*, 16(-), 74-94.
- Brown, S., Lo, K., & Lys, T. (1999). Use of R2 in Accounting Research: Measuring Changes in Value Relevance over the Last Four Decades. *Journal of Accounting and Economics*, 28(2), 83-115.
- Chang, C. F., Lee, A. C., & Lee, C. F. (2009). Determinants of capital structure choice: A structural equation modeling approach. *The Quarterly Review of Economics and Finance*, 49, 197-213.
- Chiarella, C., Pham, T., Sim, A. B., & Tan, M. (1992). Determinants of Corporate Capital Structure: Australia Evidence. *Pacific-Basin Capital Market Research*, 3(-), 139-158.
- Chin, W. W. (Ed.). (1998). *The Partial Least Squares approach to Structural Equation Modeling*. London, UK: Erlbaum Associates.
- Chiou, J. R., & Cheng, L. (2006). The Determinants of Working Capital Management. *Journal of American Academy of Business*, 10(1), 149-155.
- Chittenden, F., Hall, G., & Hutchinson, P. (1996). Small Firm Growth, Access to Capital Markets and Financial Structure: Review of Issues and an Empirical Investigation. *Small Business Economics*, 8(-), 56-67.
- Cohen, J. (1988). *Statistical Power Analysis for the Behavioral Sciences* (2nd ed.). New Jersey: Lawrence Erlbaum Associates.
- Damodaran, A. (2001). *Corporate Finance: Theory and Practice* (2nd ed.): Wiley International Edition.

- Deloof, M. (2003). Does Working Capital Management Affect Profitability of Belgian Firms? *Journal of Business Finance & Accounting*, 30(3-4), 573-588. doi: 10.1111/1468-5957.00008
- Frank, M. Z., & Goyal, V. K. (2003). Testing the Pecking Order Theory of Capital Structure. *Journal of Financial Economics*, 67(-), 217-248.
- Gefen, D., & Straub, D. (2005). A Practical Guide to Factorial Validity Using PLS-Graph: Tutorial and Annotated Example. *Communications of the Association for Information Systems*, 16, 91-109.
- Gill, A. (2011). Factors That Influence Working Capital Requirements In Canada. *Economics and Finance Review*, 1(3), 30-40.
- Hair, J. F., Black, W.C., Babin, B.J. & Anderson, R.E (2010). *Multivariate Data Analysis* (7th ed.): Prentice Hall.
- Hair, J. F., Ringle, C. M., & Sarstedt, M. (2011). PLS-SEM: Indeed a Silver Bullet. *Journal of Marketing Theory and Practice*, 19(2), 139-151.
- Jairo, I. (2008). The use of Structural Equation Modelling (SEM) in Capital Structure Empirical Analysis. *KCA Journal of Business Management*, 1(1), 11-35.
- Kieschnick, R., LaPlante, M., & Moussawi, R. (2011). Working Capital Management and Shareholder Wealth. Retrieved from <http://ssrn.com/abstract=1431165> or <http://dx.doi.org/10.2139/ssrn.1431165>
- Kock, N. (2012). WarpPLS© 3.0 User Manual. Retrieved from
- Lee, L., Petter, S., Fayard, D., & Robinson, S. (2011). On the use of partial least squares path modeling in accounting research. *International Journal of Accounting Information Systems*, 12, 305-328.
- Maddala, G. S., & Nimalendran, M. (1995). An unobserved component panel data model to study the effect of earnings surprises on stock prices, trading volumes, and spreads. *Journal of Econometrics*, 68(1), 229-242.
- Mohamad, N., & Saad, N. (2010). Working Capital Management: The Effect of Market Valuation and Profitability in Malaysia. *International Journal of Business and Management*, 5(11), 140-147.
- Mongrut, S., Fuenzalida, D., Cubillas, C., & Cubillas, J. (2007). Determinants of Working Capital Management in Latin American Companies Retrieved 25 February 2012, from www.ub.edu/iafi/Recerca/Seminaris/Papersamuel.pdf
- Myers, S. C., & Majluf, N. S. (1984). Corporate financing and investment decisions when firms have information that investors do not have. *Journal of Financial Economics* 13(-), 187-221.

Nakamura, W. T., & Palombini, N. V. N. (2012). The Determinant factors of working capital management in the Brazilian Market Retrieved 20 March 2012, from http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0034-75902012000100005&lng=en&nrm=iso

Nazir, M. S., & Afza, T. (2009). Working Capital Requirements and the Determining Factors in Pakistan. *The Icfai Journal of Applied Finance*, 15(4), 28-38.

Oliver, G. o., Liehr-Gobbers, K., & Krafft, M. (2010). Evaluation of Structural Equation Models Using the Partial Least Squares (PLS) Approach In V. E. Vinzi, W. W. Chin, J. Henseler & H. Wang (Eds.), *Handbook of Partial Least Squares: Concepts, Methods and Applications* (pp. 691-712). Berlin, Germany: Springer.

Papadopoulos, S., & Amemiya, Y. (2005). Structural Equation Modeling on Non-Normal-Panel Data: Applied to Finance and Banking-Related samples with fixed and nonnormal latent variables. *The Annals of Statistics*, 33(6), 2732-2757.

Rowe, W. G., & Morrow, J. L. (1999). A Note on the Dimensionality of the Firm Financial Performance Construct Using Accounting, Market, and Subjective Measures. *Canadian Journal of Administrative Sciences*, 16(1), 58-71.

Sogorb-Mira, F. (2003). How SME Uniqueness Affects Capital Structure: Evidence From a 1994-1998 Spanish Data Panel. *SSRN eLibrary*. doi: 10.2139/ssrn.393162

Sridharan, B., Deng, H., Kirk, J., & Corbitt, B. (2010). *Structural equation modelling for evaluating the user perceptions of e-learning effectiveness in higher education*. Paper presented at the European conference on Information Systems, Pretoria, South Africa.

Tehrani, M., & Noubary, R. (2005). A Statistical Conversion Technique: Objective and Perceptive Financial Measures of the Performance Construct. *Organizational Research Methods*, 8(2), 202-221.

Teruel, P. J. G., & Solano, P. M. (2007). Effects of Working Capital Management on SME Profitability. *International Journal of Managerial Finance*, 3(2), 164-177.

Titman, S., & Wessels, R. (1988). The Determinants of Capital Structure Choice. *The Journal of Finance*, 43(1), 1-19.

Valipour, H., Moradi, J., & Dehghan, F. (2012). The Impact of Company Characteristics on Working Capital Management. *Journal of Applied Finance & Banking*, 2(1), 105-125.

Zariyawati, M. A., Annuar, M. N., Taufiq, H., & Abdul Rahim, A. S. (2010). Working Capital Management and Corporate Performance: Case of Malaysia. *Journal of Modern Accounting and Auditing*, 5(11), 190-194.

Industry Analysis of Research and Development Disclosure by Selected Industries in Malaysia

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Abstract

The importance of Research and Development (R&D) is recognized as significant by companies worldwide. Research and Development (R&D) has been the most vital element to lead companies in Malaysia to stay competitive in this new economy development. Recently, Malaysia is ranked as the 16th country across the globe that spends high R & D expenditure. As the R & D activities have been a large proportion of a company's expenditure, it increases the needs to prepare and qualify R&D information in financial reports. Therefore, this study analyzes the R & D disclosure in three selected industries i.e.: consumer products, industrial products and technology. Using a three year time period, 30 companies of each industry were randomly selected and their R & D information was measured using the R & D disclosure index. The result of this study indicates that technology and industrial product industries have significantly higher R & D disclosure score compared to the consumer product industry.

Keyword: research and development, consumer product, industrial and technology

Introduction

Nowadays, the new standard of International Financial Reporting Standards (IFRS) is being developed and implemented around the world. The implementation of IFRS will enhance the management ability to be fit to communicate impressively to the market in the new language. The implementation of the global business has been resulting in upper extremity when the full convergence with the IFRS was created by the International Accounting Standards Board (IASB). In uniform with the adoption of IFRS 3 and IFRS 138, the accounting standards bring into view that the value of disclosed intangible asset is likely to arise in the future ("Accountant Today," 2008). Narrow on both IFRS, the intangible asset focuses attention on the non monetary not counting on the physical substance and identifiable but beyond the price of the company which are the backbones for research and development (R&D).

Malaysia emphasizes on the R & D activities to ensure that this country can compete with other organizations at the international level. Currently, the accounting standard that makes provision for the reporting of R&D activities is the Financial Reporting Standard 138 Intangible Assets (FRS 138). Based on the Malaysia Financial Reporting Standard (MFRS138), the R&D activities lead to accession in the intellectual acquirement. It is because the accomplishment in the R&D investment will result into tremendous future earning of the enterprise. Furthermore, the disclosure of R&D activities regarding the innovation capacity will attract more outside investors to invest in Malaysia. Due to that reason, the disclosure of R&D items is needed in reported performance (Hughes and Pae 2004; Einhorn 2005; Bagnoli and Watts 2007). Therefore, it is crucial to investigate the extent of the disclosure of the R & D activities.

According to the Global Competitiveness Report 2010-2011, companies in Malaysia were ranked the 16th country that incurs high R&D expenditure. Nevertheless, the resources for their country are lower but their country can still manage to have a good commitment with R&D with a higher ranking. By April 2001, the Third Outlined Perspective Plan 2001-2010 (OPP3) and the Malaysian government will assist the idea of boosting a knowledge economy as well as enhancing the exposure of R&D in Malaysia. The idea promoted by MASB will also mitigate the crisis that has been impacting several industries in Malaysia. To achieve this idea of objective, the MASB serves their roles to provide guidance in strengthening the level of R&D disclosure.

Literature Reviews

Currently, R&D has been the most important element to lead companies in Malaysia to stay competitive in this new economy development. To comply with this aim, the initiatives for the example enforcement disclosure of R&D information become importance. It is to ensure an effective allocation of resources in the society and a diminishing information asymmetry between the company and its stakeholders. The cost required to disclose R&D and expenses for any R&D activities leads to an issue for those who are involved in the accounting and finance field.

In the Malaysia scenario, since the beginning of 1980s, Malaysia has been continuously investing in R&D activities. Various incentives and support systems have been put in place in order to enhance the innovative capacity of enterprises (Zainol et al., 2008). Hence, the R&D activities and expenditure may have been a large proportion of a company's expenditure. As expenditure grows, the need to prepare and qualify R&D information on financial report is crucial. Monahan (2005) agreed that the current R&D

practices not only benefit the financial analyst for their earnings forecast and analysis but also to other users. Therefore, the MASB plays their roles to enhance the disclosure of R & D for Malaysian companies by setting the guidelines through MFRS 138.

Prior research shows that different industry has different level of R & D disclosure (Entwistle, 1999; Zainol, Nair, Kasipillai, 2008). Entwistle (1999) found that industry is one of the factors that influence the level of R & D disclosure. Using 113 Toronto Stock exchange, the author found a biotech firm disclosure with more information on R & D compared to the software, hardware and traditional firm. This result is supported by Craswell and Taylor (1992), who argue that if the industry has similar operating and institutional environments, the extent of R & D disclosure will be similar.

Zainol et al (2008) revealed that the consumer product had higher possibility disclosure on R & D compared to industrial products. This result is due to the industry product which is highly competitive and they need to continuously improve their product and services. This highly competitive industry will pay more attention on innovation as sources of long term sustainable development. Therefore, companies in this industry were found to report higher R&D items. The empirical research suggests industrial products have low tendency to disclose R&D since the R&D spending is reported as an expenditure in financial statement. Subsequently, based on the discussion of the literature presented, it seems to suggest that different industries may have different level of R & D disclosure. Thus, this study suggests the following hypothesis:

H1: There is a significant difference of R & D disclosure among industries of the selected industry in Malaysia.

R&D Disclosure Index

The R&D disclosure index is basically an important element in determining the R&D disclosure level of a company. Demand for the R&D information by stakeholder may influence the firms to provide this information (Kenneth, 2010). He claimed that firms with high performance would disclose less R&D information in their annual report due to the less demand by the investor and the managers tend to supply it less.

Past researches show that the R & D information is disclosed in the annual report (Bukh et al., 2005; Cordazzo, 2007; Singh and Van der Zahn, 2007). The information includes statements of policy, strategy and/or objectives of R&D, R&D expenses, ratio of R&D expenses to sales, R&D investment in basic research, the R&D is invested into product design and development, details of the future prospects regarding R&D, details of the existing company patents, number of patents and licenses and Information on pending patents.

This information is necessary to be disclosed since the R&D which is a part of the intangible asset has difficulty to predict its future benefits on the intellectual capital to evolve the company from R&D activities. When the asset is achieved, the meet of the future value to the society or companies, then the R&D should be considered as an intangible asset that touches the asset's recognition criteria. Besides that, Amir, Lev and Sougiannis (2003) demonstrate that companies that spend on R&D investment will have an insufficient future value of intangible assets as well as short measure on the intangible information.

Methodology

The aim of this study is to explore the research and development disclosure in selected industries in Malaysia. The selected industries are the consumer products, industry products and technology. These industries have been chosen due to their rapid growth and actively innovating their products. They also lead to increase the R&D cost. The total companies are 158 companies for consumer products, 266 for industrial products and only 32 companies under the technologies products. For the purpose of this research, only 30 companies in each industry were randomly selected. Therefore, the final sample consisted of 90 companies. Below is table 1 on the summary of sample selection:

Table 1: Sample selection

	CONSUMER PRODUCT	INDUSTRY PRODUCT	TECHNOLOGY
Total companies	158	266	32
Final sample	30	30	30
Percentage sample	19%	11.3%	94%

For this research, an unrestricted or simple random sampling has been chosen which is under the probability sampling. In determining the list of companies, 30 companies are randomly selected for each industry. The data from a three year period from the year 2008 till 2010 was collected from the annual report obtained from the Bursa Malaysia website.

Measurement of variable

The first step in this study is determining item that should be included in the R & D disclosure index. The R & D disclosure was measured using the R & D disclosure index is which adapted from Bukh et al., (2005); Cordazzo (2007); Singh and Van der Zahn (2007). The list of R&D disclosure items and their operationalization are illustrated as follows:

Table 2: R & D disclosure index

R&D Disclosure Items	Operationalization
Statements of policy, strategy and/or objectives of R&D	<ul style="list-style-type: none"> • 1 for disclose • 0 for not disclose
R&D expenses	<ul style="list-style-type: none"> • 1 for disclose • 0 for not disclose
Ratio of R&D expenses to sales	<ul style="list-style-type: none"> • 1 for disclose • 0 for not disclose
R&D invested into basic research	<ul style="list-style-type: none"> • 1 for disclose • 0 for not disclose
R&D invested into product design and development	<ul style="list-style-type: none"> • 1 for disclose • 0 for not disclose
Details of existing company patents	<ul style="list-style-type: none"> • 1 for disclose • 0 for not disclose
Number of patents and licenses etc.	<ul style="list-style-type: none"> • 1 for disclose • 0 for not disclose
Information on pending patents	<ul style="list-style-type: none"> • 1 for disclose • 0 for not disclose

The second step is to determine the level of R & D disclosure by quantifying the items contained in the disclosure index. This study adopts the dichotomous system with the use of 1 if item is disclosed and 0 if item is not disclosed. According to Abdul Rashid et al., (2009), this system will reduce the possibility of both bias and subjectivity. The extent of disclosure is measured using percentage of disclosure item adopted from Abdul Rashid et al. (2009). This can be seen in the following formula which is used to calculate the disclosure score:

$$\text{Disclosure Score} = \left(\frac{\sum_{i=1}^m d_i}{M} \right) \times 100\%$$

Where $d_i = 1$ if the item d_i is disclosed in the annual report, and otherwise 0.
 M = total number of disclosure items i.e. 8 items.

Industry analysis of R & D by companies in three industries (consumer products, industrial product and technology) in this study was conducted using the one way between groups analysis of variance (ANOVA) with post-hoc tests using Tukey. Using this test, the comparison of R&D disclosure among industries can be examined by the mean difference with its significance of value.

Results

Table 3 shows the descriptive results on the R&D disclosure based on industry.

Table 3 : Descriptive on R & D disclosure

RNDDISCLOSURE								
	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
CONSUMER	90	2.97 (37.13%)	2.128	.224	2.52	3.41	0	7
INDUSTRIAL	90	5.10 (63.75%)	2.370	.250	4.60	5.60	1	8
TECHNOLOGY	90	5.27 (65.88%)	2.268	.239	4.79	5.74	1	8
Total	270	4.44 (55.5%)	2.482	.151	4.15	4.74	0	8

The descriptive statistics in table 3 reflects that companies in technology industry have a higher mean of 5.27 (65.88%) with a standard deviation of 2.29 compared to other industries. Table 3 also demonstrates that on average, companies in technology sector reported five out of eight items on R & D. However, there are companies from this industry that do not make the R & D disclosure. The second higher mean was industrial product with a mean of 5.10 (63.75%). All the samples from industrial product disclosed at least one item on R & D and the maximum is eight items. Consumer industry reported a lower disclosure score with a mean of 2.97 (37.13%) with maximum of seven items of R & D items.

Overall, the means for these three industries is 4.44 (55.5%) which indicates that the sample only highlights on disclosure for items relating to R&D information. Based on these results, this study assumes that the level of R&D disclosure is still weak and need

improvement. These results seem to suggest that managers believed that the R&D information is not important in the valuation of their firms by the capital markets.

Table 4 : ANOVA Table (R & D Disclosure)

RNDDISCLOSURE					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	296.067	2	148.033	29.050	.000
Within Groups	1360.600	267	5.096		
Total	1656.667	269			

Hypothesis 1 proposes that there is a significant difference of R & D disclosure among industries by the selected industries in Malaysia. The results in table 4 above shows that the hypothesis proposed is accepted as p-value of 0.000 which is less than 0.005 with an f-value of 29.05. This provides evidence that at least one industry had mentioned the mean of R & D disclosure that was significantly different than other industries. The effect size, calculated using the eta squared was 0.179 would be considered a large effect size (Pallant, 2001).

Tukey HSD^a

TYPEINDUSTRY	N	Subset for alpha = 0.05	
		1	2
CONSUMER	90	2.97	
INDUSTRIAL	90		5.10
TECHNOLOGY	90		5.27
Sig.		1.000	.874

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 90.000.

Table 5: Homogeneous Subsets

An additional test will be conducted to test where the mean differences among industries occurred. Based on table 5 above, Post hoc comparisons using Tukey HSD test indicated that the mean score for consumer product (M= 2.97,SD=2.128) was significantly different from industry product (M=5.1 ,SD=2.37) and technology (M= 5.27,SD=2.27). However, industrial product (M=5.1 ,SD=2.37) did not differ significantly from technology (M= 5.27,SD=2.27). Therefore, the result in table 6 confirms that hypothesis 1 is accepted. This result is consistent with the results by Entwistle (1999) and Zainol et al., (2008).

Table 5 also denotes the consumer product industry that had the lowest mean on R & D disclosure (M=2.97) and was significantly different from other industries. Here, industrial industry has the highest score of R & D disclosure with 5.27. Besides, the industrial products and technology are grouped together because their R & D disclosure is not significantly different. Moreover, the industrial industry (M=5.1) and technology (5.27) are more or less at the same level of R & D disclosure.

Conclusion

The main objective of this study is to explore the research and development disclosure by selected industries of Bursa Malaysia. The findings indicate that overall, most companies in the industry of industrial products, consumer products and technologies disclosed on their R & D items. This study also provides the evidence that different industry have different level of disclosure. Based on the industry analysis, the mean score for consumer products was significantly different from the industrial products and technology. Therefore, regulators should play their roles in enhancing the level of R & D disclosure in Malaysian companies by better initiative plans and regulations especially for companies in the consumer product industry.

This study is perhaps contributing to the literature by providing the recent trends of R&D disclosure practices in Malaysia. A lack of understanding of the R&D disclosure is a serious and potentially leading to negative consequences for users especially on the information on R&D activities in annual reports and on the R&D reporting practice from both the mandatory and voluntary disclosure aspects. Secondly, the finding will be useful for the external users. They have no clear picture on the company's attainment that has been highlighting on R&D. According to Nixon (1998), the R&D disclosure is seen more significant compared to the accounting treatment in R&D expenditure especially in the UK research. In order to help users to boost the concept of the companies' investment in R&D, the companies should incorporate the types of R&D information in the annual reports, specifically on potential growths concerning R&D. Information provided in annual reports and information expectation of users should be aligned to overcome gap in voluntary disclosure (Hashim and Salleh, 2007).

As the present study only covers three selected industries for a three year time period, the sample and time period can be extended for future researches to provide a better insight on the R & D disclosure. It may include the study on the effects of firm characteristics and board on the R & D disclosure. There are many opportunities for future research. Qualitative approaches such as surveys, questionnaires or interview will be very useful. Furthermore, future research may also consider on delving deeper on the issues by including the perception of the management itself on the R & D spending.

References

- Accountants Today (October 2008), full convergence with IFRS in 2012, pp. 22-23.
- Abdul Rashid,A. Wan Abdullah, W.M.T, Tarmidi,M and Zainol,Z. (2009) Voluntary Disclosure of Intangible Information: A Comparative Study between Prospectuses and Annual Reports, International Symposium on Finance and Accounting.
- Amir, E., Lev, B. & Sougiannis, T. (2003), “Do financial analysts get intangibles?” *European Accounting Review*, Vol 12 No. 4, pp. 635-59.
- Bagnoli, M., and S. Watts, (2007) Financial Reporting and Supplemental Voluntary Disclosures. *Journal of Accounting Research* 45(5): 885-913.
- Bukh,P.N, Nielsen, C. Gormsen,P. & Mouritsen,J (2005) "Disclosure of information on intellectual capital in Danish IPO prospectuses", *Accounting, Auditing & Accountability Journal*, 18 (6),713 – 732.
- Cordazzo, M. (2007) "Intangibles and Italian IPO prospectuses: a disclosure analysis", *Journal of Intellectual Capital*,8 (2),288 – 305.
- Craswell,A and Taylor,S (1992) Discretionary disclosure of reserves by oil and gas companies an economic analysis. *Journal of Business Finance and Accounting*, 19, pp. 295–308
- Einhorn, E., (2005)The Nature of Interaction between Mandatory and Voluntary Disclosures. *Journal of Accounting Research* 43(4): 593-621.
- Entwistle, G.M. (1999), “Exploring the R&D disclosure environment”, *Accounting Horizons*, Vol. 13 No. 4, pp. 323-41.
- Hashim, F. and Mohd.Salleh, N. (2007), “Voluntary Annual Report Disclosures by Malaysian Multinational Corporations ”, *Malaysian Accounting Review*, Vol. 6, No. 1, pp 129-156.
- Hughes, J. S., and S. Pae. (2004). Voluntary disclosure of precision information.*Journal of Accounting and Economics* 37, 261-289.
- Monahan, S. (2005), “Conservatism, Growth and the Role of Accounting Numbers in the Fundamental Analysis Process”, *Review of Accounting Studies*, Vol. 10, No. 2-3, pp. 227-260.

Nixon, B (1998), "The Accounting Treatment of Research and Development Expenditure: Views of UK Company Accountants", *European Accounting Review*, Vol. 6, No. 2, pp. 265-277.

Pallant, J. (2001). *SPSS survival manual: A step by step guide to data analysis using SPSS for windows* (10th Ed.). Philadelphia: Open University Press.

Singh, I. J. Mitchell, L. W. & der Zahn, V. (2007) "Does intellectual capital disclosure reduce an IPO's cost of capital?: The case of underpricing", *Journal of Intellectual Capital*, 8 (3), 494 – 516.

Zainol, Nair, Kasipillai, (2008), "R&D Reporting Practice: Case of a Developing Economy", *Journal of Intellectual Capital*, Vol. 9, No. 1, pp. 122-132.

An Application of K-Set Inequalities in Integer Programming, a Case Study of a Company Based in Accra

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Abstract

Integer programming models are mathematical models that can provide organizations with the ability to optimally obtain their goals through appropriate utilization and allocation of available resources. The knapsack problem is an integer programming problem that has only one constraint and can be used to strengthen cutting planes for general integer programs. In this research paper, we shall model an advert placement and selection slot problem of a company based in Accra as a 0-1 knapsack problem. The k-set inequality algorithm was used to solve the problem by coding it in Fortran 90.

Keywords: Integer Programming, Knapsack Problems, Advert placement, K-Set Inequality.

Introduction

Organizations face the problem of allocating limited resources among projects to maximize returns from a given investment, by selecting subset of projects, which can be funded within a given budget constraint.

The knapsack problem is a general resource allocation problem in which a single resource is assigned to a number of alternatives with the objective of maximizing the total return. The knapsack problem seeks to optimize a set of yes/no decisions, subject to a single non-negative constraint. The problem is a distribution of effort problem that has a linear objective function and a single constraint.

Related Works

Jolayemi (2001) presented a model for the scheduling of projects under the condition of inflation and under penalty and reward arrangements. It included the effects of inflation on time-cost trade-off curves and a modified approach to time-cost trade-off analysis. The model revealed that misleading schedules and inaccurate project cost estimates will be produced if the inflation factor is neglected in an environment of high inflation. The authors also showed that award of penalty or bonus is a catalyst for early completion of a project.

Kanniappan et al., (1993) studied the problem of selecting various schemes under the integrated rural development program and to maximize the number of beneficiaries so as to optimize the annual income generated from each scheme. Typical constraints prescribed by the government in the allocation of the funds to several schemes from the budget outlay for integrated rural development each year. Through integer programming model and data from the district rural development agency of Dindigul Anna District, the authors were able to maximize the annual income generated from the schemes.

Scogings et al., (1995) presented a model for student enrolment at the University of Natal. The project was part of an effort to find solution to meet the demand for accommodation of lecture rooms, which is to double up on the number of time tabled period so that no lecture room will be idle for the whole day, due to the steady increase in student enrolment over the years.

Hall et al., (1992) developed a mathematical model for a project funding decision facing United State Cancer Institute. The problem was to decide which project to fund given a strict limitation on capital availability.

Hamdi et al., (2005) put forward a model that schedules project selection, which was formulated as a binary integer program. The model was applicable in various settings such as selection of engineering projects in corporate planning, or in other environments in which the candidate projects were interdependent.

Hospitals need to constantly produce duty rosters for its nursing staff. Appropriate and considerate scheduling of nurses can have an impact on the quality of health care, the recruitment of nurses, the development of budgets, and other nursing functions. The nurse budget problem has been the subject of many academic studies. Cheang et al., (2003) presented an integer programming model to solve this problem.

Mathematical Formulation of the Problem

The formulation of the knapsack problem is the same as a basic integer program with only one constraint and binary variables. Because the knapsack problem is formulated for sets of solutions containing only zeroes and ones, it is ideally suited to

model decision systems. The requirement for a knapsack constraint is that it must be a “less than or equal to” constraint and that it must have only positive values for its coefficients and right hand side. Consideration is given to the 0-1 knapsack problem where $\sum_{i=1}^n w_i \leq b$. Each item has a profit or cost c_i and a weight w_i . The problem is to select a subset of the items whose total weight does not exceed the knapsack capacity b , and whose total profit is a maximum.

We assume without loss of generality that all input data are positive integers. Introducing the binary decision variable x_i with

$$x_i = \begin{cases} 1, & \text{if item } i \text{ is selected} \\ 0, & \text{otherwise} \end{cases}$$

The knapsack problem can be modeled as an integer linear programming model:

$$\text{Maximize } Z = \sum_{i=1}^n c_i x_i$$

Subject to

$$\sum_{i=1}^n w_i x_i \leq b$$

Algorithm

K-set inequality algorithm (where k is an integer that represents the number of item types in the knapsack problem) was used. Given the knapsack problem with a total of N items, we let the number of item types be represented by the k -partitioned mutually exclusive subsets of N . Let the k -partitioned subsets also have members that represent the number of items that can be selected or not selected from each subset, up to the total number of items in each k -partitioned subset. The steps of the algorithm are:

Step1: Input the vector of values, weights and bag capacity.

Step2: Input the maximum capacity of the k -partitioned mutually exclusive subsets of item types.

Step3: For a feasible solution of each of the k -partitioned mutually exclusive subsets, from zero to the maximum number of each item subset, compute optimal values and weights.

Step4: While the computed weight less than knapsack capacity and optimal value less than computed value, optimal value equals computed value and optimal weight equals computed weight.

Step5: Repeat Step3 for all feasible solutions.

Step6: Stop at the end of final iteration, and report optimal value, optimal weight and the number of each item type selected.

Data Collection and Analysis

The study was undertaken using data collected from a company, based in Accra, having an advertising budget of One hundred and fourteen thousand Ghana cedis (GH¢114,000.00) for use on advertisements. The company has the following media options: print, television, billboards, and radio. Table1 presents the detailed advert schedule for the company.

Table 1: Cost and Benefits of Placing an advert in a Media

ITEM	MEDIA	NO. OF TIMES (thousands)	COST (GH¢ '000)	REACH OF PEOPLE
1	PRINT	5	18	42
2	BILLBOARD	3	13	26
3	TELEVISION	4	8	51
4	RADIO	3	7	49

The problem is to select media types of adverts in such a way that the widest reach of people would be achieved without spending more than the amount allocated for adverts.

In the knapsack model, the holding capacity of the knapsack is the resource limit, given here as the advertising budget. The items to be considered are the different media that can be used, the weight of any item is the cost of placing an advert using that media, and the value of the item is the reach of the media type to the people.

The problem can be modelled mathematically as:

$$\text{Maximize } R = \sum_{i=1}^n r_i m_i$$

Subject to

$$\sum_{i=1}^n w_i m_i \leq W$$

Where;

R = Total reach

r_i = Reach of each media or item

m_i = Number of adverts placed using each media

w_i = Cost of placing an advert in each media

W = Total amount available for adverts (resource limit)

Thus, the company's problem is finally modelled as:

Maximize

$$R = 42(m_1 + m_2 + m_3 + m_4 + m_5) + 13(m_6 + m_7 + m_8) + 51(m_9 + m_{10} + m_{11} + m_{12}) + 49(m_{13} + m_{14} + m_{15})$$

Subject to

$$18(m_1 + m_2 + m_3 + m_4 + m_5) + 13(m_6 + m_7 + m_8) + 8(m_9 + m_{10} + m_{11} + m_{12}) + 7(m_{13} + m_{14} + m_{15}) \leq 114$$

Software Used

To carry out the computation of the proposed model, we apply the k-set inequality algorithm coded in Fortran 90. The feature of the software permits the input data to be fixed into the code. The Software displays the final optimal solution for the problem. However, a walkthrough of the algorithm with our model gave the computational iterative values for the various optimal solutions as shown in Table 2.

The Fortran 90 code is shown in Appendix_1.

Table 2: Optimal Solutions for the various iterative stages

ITERATION	ITEM SELECTED	OPTIMAL VALUE	OPTIMAL WEIGHT
1	{0,0,0,3}	147	21
2	{0,01,3}	198	29
3	{0,0,2,3}	249	37
4	{0,0,3,3}	300	45
5	{0,0,4,3}	351	53
6	{0,1,0,3}	173	34
7	{0,1,1,3}	224	42
8	{0,1,2,3}	275	50
9	{0,1,3,3}	326	58
10	{0,1,4,3}	377	66
11	{0,2,0,3}	199	47
12	{0,2,1,3}	250	55
13	{0, 2, 2, 3}	301	63
14	{0,2,3,3}	352	71
15	{0,2,4,3}	403	79

16	{0,3,0,3}	225	60
17	{0,3,1,3}	276	68
18	{0,3,2,3}	327	76
19	{0,3,3,3}	378	84
20	{0,3,4,3}	429	92
21	{1,0,0,3}	189	39
22	{1,0,1,3}	240	47
23	{1,0,2,3}	291	55
24	{1,0,3,3}	342	63
25	{1,0,4,3}	393	71
26	{1,1,0,3}	215	52
27	{1,1,1,3}	266	60
28	{1,1,2,3}	317	68
29	{1,1,3,3}	368	76
30	{1,1,4,3}	419	84
31	{1,2,0,3}	241	65
32	{1,2,1,3}	292	78
33	{1,2,2,3}	343	81
34	{1,2,3,3}	394	89
35	{1,2,4,3}	445	97
36	{1,3,0,3}	267	78
37	{1,3,1,3}	318	86
38	{1,3,2,3}	369	94

39	{1,3,3,3}	420	102
40	{1,3,4,3}	471	110
41	{2,0,0,3}	231	57
42	{2,0,1,3}	282	65
43	{2,0,2,3}	333	73
44	{2,0,3,3}	384	81
45	{2,0,4,3}	435	89
46	{2,1,0,3}	257	70
47	{2,1,1,3}	308	78
48	{2,1,2,3}	359	86
49	{2,1,3,3}	410	94
50	{2,1,4,3}	461	102
51	{2,2,0,3}	283	83
52	{2,2,1,3}	334	91
53	{2,2,2,3}	385	99
54	{2,2,3,3}	436	107
55	{2,2,4,3}	438	108
56	{2,3,0,3}	309	96
57	{2,3,1,3}	360	104
58	{2,3,2,3}	411	112
59	{2,3,3,2}	413	113
60	{2,3,4,1}	415	114
61	{3,0,0,3}	273	75

62	{3,0,1,3}	324	83
63	{3,0,2,3}	375	91
64	{3,0,3,3}	426	99
65	{3,0,4,3}	477	107
66	{3,1,0,3}	299	88
67	{3,1,1,3}	349	96
68	{3,1,2,3}	400	104
69	{3,1,3,3}	451	112
70	{3,1,4,2}	453	113
71	{3,2,0,3}	325	101
72	{3,2,1,3}	376	109
73	{3,2,2,2}	378	110
74	{3,2,3,1}	380	111
75	{3,2,4,0}	382	112
76	{3,3,0,3}	351	114
77	{3,3,1,1}	304	108
78	{3,3,2,0}	306	109
79	{4,0,0,3}	315	93
80	{4,0,1,3}	366	101
81	{4,0,2,3}	417	109
82	{4,0,3,2}	419	110
83	{4,0,4,1}	421	111
84	{4,1,0,3}	341	106

85	{4,1,1,3}	392	114
86	{4,1,2,1}	345	108
87	{4,1,3,0}	347	109
88	{4,2,0,2}	318	112
89	{4,2,1,1}	320	113
90	{4,2,2,0}	322	114
91	{4,3,0,0}	246	111
92	{5,0,0,3}	357	111
93	{5,0,1,2}	359	112
94	{5,0,2,1}	361	113
95	{5,0,3,0}	363	114
96	{5,1,0,1}	385	110
97	{5,1,1,0}	287	111

Results

The various feasible combinations of media types to be selected to achieve optimal reach of people at minimum cost can be seen from Table 2.

The best solution among them was 477 reach of people at a cost of 107 consisting of advertising on 3 prints, 0 billboards, 4 TV, and 3 radios, thus iteration 65 in Table 2.

Conclusions

We have described the advert placement and selection problem of a company as a 0-1 knapsack programming problem. The k-set inequality algorithm was used to solve the company's advert placement and selection problem. It was observed that the solution that gave maximum achievable value was {3, 0, 4, 3}. This means that the company should spend a total cost of one hundred and seven thousand Ghana cedis (GH¢107,000) to obtain an optimal reach of four hundred and seventy seven thousand (477,000) people, consisting of placing three prints, no billboards, four TV, and three radio advertisement slots. Currently there is no such method for determining what media types to be used and in what quantity to be placed by the company. The media are chosen using guess work and by the discretion of the people in charge.

For the data used for our analysis, the company using their crude approach arrived at the following conclusion; placed a total of one print, three billboards, four TV, and three radio adverts, thus {1, 3, 4, 3}. Total reach achieved was four hundred and seventy

one thousand (471,000) people at the total cost of one hundred and ten thousand Ghana cedis (GH¢110,000).

Using the more scientific Knapsack problem model for the placement and selection of the company's advert slot gives a better result. Management may benefit from the proposed approach for placement and selection of adverts to guarantee optimal reach of people. We therefore recommend that the Knapsack problem model should be adopted by the company for advert placement and media planning.

Acknowledgement: We thank Prof. Adetunde, I.A, Dean of Faculty of Engineering, University of Mines and Technology, Tarkwa, Ghana for fruitful discussions, his criticism, suggestions and making this article publishable.

References

1. Cheang B., Li H, Lim A, and Rodrigues B (2003). Nurse Rostering problems- a bibliographic survey. *European Journal of Operations Research* 151, pp 447.
2. Hall N., Hershey J, Dessler L, and Stotts R (1992). A model for making project funding decisions at the national cancer institute. *Journal of Operations Research*, volume 40, no 6, November-December 1992.
3. Hamdi B. and Omer S B (2005). Capital budgeting with risk adjustment for large-scale interdependent projects. *Review of social, economic and business studies*, vol. 7/8, pp 71-82.
4. Jolayemi J. K. (2001). A model for scheduling projects under the condition of inflation, and under penalty and reward arrangements. *Journal of Operations Research Society of South Africa*, Vol. 17, No. 2, P81-99.
5. Kanniappan P. and Thangavel K (1993). An optimization model for selection of integrated rural development program. *Journal of Operations Research Society of South Africa*, volume 9(1), pp 13-20.
6. Scorgings C. J. and Uys P W (1995). Optimization of resource utilization at a university- an allocation problem. *Journal of Operations Research Society of South Africa*, volume 11(1/2), pp 4-18.

Appendix_1

Program Knapsack

IMPLICIT NONE

Real:: TotalWeight

Integer:: MaxPrint, MaxBillboard, MaxTV, MaxRadio, MaxValue = 0

Integer:: i, j, k, l, n (4)

Type Bounty

Integer:: Val

Real:: Wht

End Type Bounty

Type (Bounty) :: Print, BillBoard, TV, Radio, Sack, Current

Print = Bounty (42, 18)

BillBoard = Bounty (26, 13)

TV = Bounty (51, 8)

Radio = Bounty (49, 7)

Sack = Bounty (0, 114)

MaxPrint = 5, MaxBillBoard = 3, MaxTV = 4, MaxRadio = 3

Do I = 0, MaxPrint

Do j = 0, MaxBillBoard

Do k = 0, MaxTV

```
Do l = 0, MaxRadio
Current% Val = l*Radio% Val + k*TV% Val + j*Billboard% Val + i*Print% Val
Current% Wht = l*Radio% Wht + k*TV% Wht + j*Billboard% Wht + i*Print%
Wht
If (Current% Wht < Sack% Wht) Then
  If (MaxValue < Current% Val) Then
    MaxValue = Current% Val
    TotalWeight = Current% Wht
    N (1) = I, n (2) = j, n (3) = k, n(4) = l
  End If
End If
End Do
End Do
End Do
WRITE (*, "(A, I0) ") "Optimum Value achievable is ", MaxValue
WRITE (*, "( 4(A, I0), A) ") "This is achieved by ", n(1), "Print", n(2),
"BillBoard", n(3), "TV and ", n(4), "Radio"
WRITE (*, "(A, F6.2, A, F6.2)") "The Optimum Weight is", TotalWeight
End Program Knapsack
```