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Cash Mobilization in Ghana: An Empirical Evaluation of the Effectiveness of E-Zwich Smart Card

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ABSTRACT

Over the years there has been a progression of value transfer systems starting from barter, through bank notes, payment orders, cheques and later Credit Cards (Asokan *et al.*, 2000). This has finally evolved into electronic payment on the Internet. This research therefore assesses the adoption of cash mobilization system using e-zwich payment system in Ghana. The population for the research was clients and merchants of E-zwich in the Kumasi Metropolis. The population included staffs of the various banks in the Metropolis that have E-zwich services. A sample size of sixty (60) clients and five (5) staff each from five (5) Banks and twenty (20) merchants were selected. It was found among others that, merchants are raising concerns with buying and loading of credit units unto the POS device, unavailability of thermal roll on the market and network connectivity issues while performing "profile download" – a very important activity before transactions can occur on the POS device. Compounding to the issues, clients are also facing the unavailability of enough merchants in the Metropolis while most of the small available merchants they visit do not have their POS systems working effectively. However, it is recommended among others that, the revolution of the e-zwich system should be targeting teenagers and young adults who receive transfers from their parents or guardians and possess a sizeable amount of money but are often ineligible to open a bank account which will allow a greater proportion of funds to remain within the banking system until they are spent.

Key Words: E-zwich, Electronic Payment Systems, GhIPSS, ATM, Mobilizing, Unbanked

INTRODUCTION

Modern electronic payment systems have become a significant element in all trade and commerce activities globally. The scope of electronic payments extends from under one dollar to multi-million dollar transactions. Despite the benefits that electronic payment systems has brought to other economies such as the western developed countries, economies in Africa, which are still in the early stages of applying electronic payment systems are yet to experience its maximum economic and operational impact (Ackorlie, 2009).

Unlike the developed world, electronic payment systems are rare in developing countries like Ghana because they have been slow to restructure and adapt to the new global economic reality resulting in lost opportunity and diminished competitiveness. Implementing cash mobilization system in a developing nation where majority of citizens are used to cash and cheque based transactions require a lot more effort. This research therefore intends to assess the adoption of cash mobilization system using the e-zwich payment system in Ghana.

In April 2008 the Bank of Ghana (BOG) launched through its subsidiary, Ghana Inter-bank Payment Settlement System (GhIPSS), a new electronic payment system called the national switch (or the e-zwich). The e-zwich is to allow the establishment of a common platform for all payment transactions in the country. It will have the capacity to deal with transactions that take place online (in places with telephone services) and offline (i.e. where telephones are not present, e.g. rural areas) (Baah-Wiredu, 2007). Baah-Wiredu expressed the view that this new national switch and smartcard project will serve as the vehicle to transform Ghana from a predominantly cash economy to an economy dominated by electronic transactions using modern state of the art technology.

The introduction of the e-zwich falls within the key objectives of the Ghana Inter-bank Payment Settlement System. GhIPSS is required to liaise with the banks and non-bank financial institutions to improve on the payment systems in the country by:
- o Providing a range of technology driven solutions and associated services, which will support and contribute to the general efficiency of the Ghanaian payment systems; and
- o Providing affordable and convenient access to banking services for all residents in Ghana

GhIPSS presents the e-zwich as an electronic cash payment system for very efficient, fast and secure way of paying for goods and services throughout the country. For the implementation of the e-zwich, GhIPSS has deployed the Universal Electronic Payment System (UEPS) technology. The UEPS utilizes a smart card technology to provide a fully integrated payment, switching and settlement system that is suitable for multiple applications, products and services. The technology is expected to meet the requirements of the banked, un-banked and under-banked populations. It should also allow for a secure national system that manages the flow of funds between customers, merchants and financial service providers. Customers are able to perform transactions "online" and "offline" in underdeveloped areas due to lack of communications infrastructure.

All transactions are expected to occur between a client card and a merchant card or a bank tellers' card at a Point of Sale (POS) terminal or an Automated Teller Machine (ATM). In the case of the POS terminal, either a merchant card or a teller card (depending on where the transaction is taking place i.e. either at a bank or a merchant premise) together with a SIM card is inserted in the POS. The customer, then slots the client card in the POS, if validated then transactions proceeds.

However, Moving from a society where 90% of cash is held outside of the banks to a cashless society is a big change and challenge. It is an enormous challenge for the government, financial institutions, individuals and other stakeholders responsible for making this system achieve its economic benefits. Nevertheless, it has been realized that the E-zwich system that is used as the medium for mobilizing cash from the unbanked has some downfalls. Some of the complaints are that there was no design of a separate platform for the e-zwich project and this creates the inconvenience of having units run out or expiration of the units on the SIM card. This always creates problems of connectivity. Another issue is that GhIPSS has not intensified its education to the general public about the benefits and importance of the e-zwich smart card system. The cost implications if not checked can lead to the failure of the project since most banks will back out of the e-zwich project. It is for this reason that this study seeks to evaluate the effectiveness of the E-zwich in the mobilization of cash from the unbanked. Hence, the specific objectives of the study are: To assess how effective the e-zwich has been in the mobilization of cash; to assess clients satisfaction with the e-zwich system and to identify the challenges that stakeholders encounter with the e-zwich system.

REVIEW OF RELATED WORKS

Mobilizing Cash from the Unbanked

Ackorlie (2009) indicated that as many as 80 per cent of Ghana's population neither has nor operate a bank account, although the majority of the "un-banked" are economically active in either the formal or informal sectors of the economy. This is the case for most African and developing nations. The term unbanked means the person does not have a checking or savings account.

Commonwealth Business Council (2004) indicated that more than two billion individuals age 15 and over are unbanked. They emphasized that electronic payment systems can help the unbanked join the banking system with significant benefits to them and to the societies in which they live Large percentage of business assets held in the informal economy of many developing countries reduce the size and productive capacity of their total official economies. A cash based society is a diminished society. The informal economy runs on cash outside of the banking and official economic systems. When cash remains outside the banking system, the possibilities for supplying productive capital to the economy are muted. There is a direct correlation between a specified shift of currency into lendable reserves and increases in GDP. Bringing cash into the banking system generates an equal increase in bank reserves, enabling banks to facilitate more consumer and commercial loans, thereby stimulating business growth and consumption.

Anderson-Porisch (2006) however believes that, the unbanked in the society have reasons and gave the following as some of the reasons for the unbanked;
   o Lack of understanding of the banking system and expectations for having a bank account
   o Past negative banking experience
   o Lack of appropriate identification and/or documentation needed to open a bank account
   o Unstable living situation
   o Cultural conflict including bank practices that varies with personal beliefs.

Using E-payments to mobilize Cash

The emergence of credit, debit and prepaid card systems gives the unbanked an important option for bringing cash into the formal economy. Prepaid cards are particularly interesting, because the funds are actually on deposit at a regulated financial institution, but the process of establishing and managing accounts is much more cost effective and less risky than traditional debit accounts for smaller levels of deposit (Commonwealth Business Council, 2004).

The Commonwealth Business Council (2004) argues that payroll, pension and benefit cards can be effective entry-level instruments for banking and subsequent mainstream financial services, since they allow a greater proportion of funds to remain within the banking system until they are spent. Teenagers and young adults are often ineligible to open a bank account. But because of transfers from their parents or guardians, they may possess a sizeable amount of money. Prepaid card products for young people can teach them vital money skills, while keeping their funds in the banking system. One such solution is a re-loadable prepaid card that features financial literacy tools and allows parents or guardians to monitor transactions online (Commonwealth Business Council 2004). This has been used in the US, Brazil, Mexico, Puerto Rico, Indonesia and Jordan.

In banking the unbanked, financial institutions that are part of an international payment system can issue prepaid cards to customers, including those who currently do not have a

banking relationship, enabling them to receive funds safely and conveniently. Depending on the type of card, recipients can withdraw cash at an ATM, or buy goods and services at merchants (Commonwealth Business Council & Visa, 2004).

In developing countries, remittances represent the primary source of foreign exchange and generate a significant engine for consumer spending. Ghana being a developing country is no exception. Foreign remittances to Ghana is huge, however, a chunk of these remittances are held in cash and circulate within the informal economy and therefore being kept outside the banking system. These remittances do not contribute strongly to formal economic growth. It is obvious that the active population is now hurting under the burden of inconveniences and constrictiveness of having to endure heavy, cumbersome and usually unsafe cash-based payments in their day-to-day affairs and transactions (Ackorlie, 2009). The use of any electronic transaction as a common platform for the financial sector would reduce physical circulation of cash.

The use of Information Communication Technology (ICT) products to simplify and speed up financial transactions has become part of everyday life in the developed world, whereas several parts of Africa had no such experience (Ackorlie, 2009). The use of the electronic transactions system to do business is indeed not common in Africa. In the advanced economies, physical circulation of cash is limited because most people use electronic means to buy and pay for goods and services. The physical handling of money currencies is therefore reduced and the advantage here is that the government does not spend huge sums of money to print new currencies to replace worn out ones.

Benefits of Electronic Payments

Fiallos & Wu (2005) emphasized that the arrival of the internet has taken electronic payments and transactions to an exponential growth level. Consumers could conveniently purchase goods from the internet. Digital money has significant benefits for financial institutions, banks and e-merchants. Digital Money is an electronic payment technology, which can provide anonymous flexible electronic payment, like paper cash, but with added security requirements needed for internet transactions. Lee *et al.* (2003) also indicated that a secure electronic cash system can guarantee anonymity of legitimate users but also provides traceability about illegally issued cash or laundered money. If illegal activity did take place, it can cancel anonymity of the digital cash in order to protect the bank. Lee *et al.* (2004) added that since digital money can trace double spending, and double spending protects content by exposing the double spender's identity, digital cash is a full proof way of guarding against illegal redistribution of intellectual property and materials.

Accordingly, electronic payments can thus lower transaction costs stimulate higher consumption and GDP, increase government efficiency, boost financial intermediation and improve financial transparency. She further added that Governments play a critically important role in creating an environment in which these benefits can be achieved in a way consistent with their own economic development plans.

Humphrey *et al.* (2001) also emphasize that the introduction and use of electronic payment instruments holds the promise of broad benefit to both business and consumers in the form of reduced costs, greater convenience and more secure, reliable means of payment and settlement for a potentially vast range of goods and services offered worldwide over the internet or other electronic networks. One such benefit is that electronic payments enable bank customers to handle their daily financial transactions without having to visit their local

bank branch. Electronic payments products could save merchants time and expense in handling cash.

Rapid technological advances have introduced significant changes in the global economic and business environment. The banking industry is constantly responding to changes in customer preferences and needs; increasing competition from information technologies advances, channel strategies, and government deregulations of the financial service sector (Byers and Lederer, 2001). In the banking industry, bank branches alone are no longer sufficient to provide banking services to cater the needs of today's sophisticated and demanding customers. Success or failure of many retail banks is dependent upon the capabilities of management to anticipate and react to such changes in the financial marketplace. In the search for sustainable competitive advantages in the competitive and technological financial service industry, banks have recognized the importance to differentiate themselves from other financial institutions through distribution channels. This has resulted in banks developing, and utilizing new alternative distribution channels to reach their customers (Thornton and White, 2001).

The provision of banking services through electronic channels (e-channels) namely Automated Teller Machines (ATM)s, Personal Computer (PC) banking, Telephone banking, internet banking and banking kiosks have provided an alternative means to acquire banking services more conveniently.

Definition of electronic banking
Daniel (1999) defined electronic banking as the provision of information or services by a bank to its customers, via a computer or television. In its very simplest form, electronic banking can mean the provision of information about the bank and its products via a page on the World Wide Web (WWW). A more developed service is one that provides customers with the opportunity to gain access to their accounts and execute transactions or to buy products online via the Internet.

Stakelbeck (2005) also defined e-banking as an electronic channel used to provide retail and commercial banking products and services to customers and stated further that e-banking delivery channels can be divided into three distinct categories: informational, electronic transfer and electronic payment. Using an information channel, a bank provides general purpose information, usually via a proprietary website, to existing or prospective customers. An electronic transfer channel allows a customer to electronically submit loan or deposit applications online, while an electronic payment channel facilitates traditional payment entry, settlement and distribution options. Some products and services offered by e-banking channels include: balance inquiries, transaction information, funds transfer, bill payment and presentment, cash management and loan applications.

Electronic banking adoption
Mukherjee and Nath (2003) indicated that there is a positive relationship between perceived trust and customers' commitment in online banking transaction. They emphasized that the future commitment of the customers to online banking depends on perceived trust. According to them, perceived trust is one of the important factors for customer intention. Evidently, Gummerus *et al.* (2004) mentioned that lack of trust has been one of the most significant reasons for customers not adopting online services involving financial exchanges. Reichheld and Schefter, (2000) suggested that online customers generally stay away from vendors whom they do not trust. A lack of trust may be the most significant long-term barrier for realizing the full potential of electronic commerce. Trust is a dynamic process that must be built over time. Sathye (1999) showed that security concerns and lack of awareness about electronic-banking and its benefits stand out as being the obstacles to the adoption of e-banking. This shows that

security and benefits issues are very important factors for customer satisfaction. Customers tend to be less satisfied if the service appears to have less security and benefits to them. This situation indirectly gives a negative impact on the e-service adoption.

The added value in electronic banking, according to Daniel (1999), was convenience, sales orientation and lower costs. Cooper (1997) emphasized that to adopt consumers must become aware of the new brand. An important characteristic for any adoption of innovative service or product is creating awareness among the consumers about the service/product.

Electronic banking in Ghana
Electronic banking is playing an increasingly important role in the banking sector, and thus have gained quite a lot of attention in academic literature lately. Over time, technology has increased in importance in Ghanaian banks. Traditionally, banks have always sought media through which they would serve their clients more cost-effectively as well as increase the utility to their clientele. Their main concern has been to serve clients more conveniently, and in the process increase profits and competitiveness. In Ghana, the earliest forms of electronic and communications technologies used were mainly office automation devices. Telephones, telex and facsimile were employed to speed up and make more efficient, the process of servicing clients. For decades, they remained the main information and communication technologies used for transacting bank business. Later in the 1980s, as competition intensified and the personal computer (PC) got proletarian, Ghanaian banks begun to use them in back-office operations and later tellers used them to service clients. Advancements in computer technology saw the banks networking their branches and operations, thereby making the one-branch philosophy a reality. Barclays Bank (Gh.) and Standard Chartered Bank (Gh.) pioneered this very important electronic novelty, which changed the banking landscape in the country (Abor, 2004).

The clearing and payment system in Ghana was for a long time manual. Inter-bank transfers took a long time to be cleared and electronic payment systems were largely non-existent. The economy was, and is still, cashbased and heavily segmented. The network of banks developed individual products like ATMs and debit cards for their respective customers, but there wasn't much use of them. For instance, the SG-SSB Bank (a commercial bank, then called SSB) issued and operated the Sika Card for the payment of goods and services by its customers. Further, domestic money transfers were, until recently, largely non-existent. Foreign money transfer schemes such as Western Union Money Transfer and MoneyGram dominated the money transfer system of Ghana: they focused on and funneled foreign exchange into Ghana (Hesse, 2010).

E-zwich electronic clearing and payment system
According to Hesse (2010), Ghana has long recognised that modernizing the banking and financial sector and reducing the cost of doing business is a given for attracting the investment needed for rapid economic growth and has consistently designed policies to modernise the sector. The Bank of Ghana (BOG), the regulator of the banking and financial sector, rolled out the e-zwich, a national payment and settlements system that creates an electronic clearing house for all banking and financial institutions, as well as a biometric smartcard which is a very secure way of paying for goods and services. It is the first of its kind in the world on such a scale and is another first for Ghana.

The e-zwich is an electronic clearing and payment system designed to establish a common platform and thereby link the payment systems of all banking and financial institutions in Ghana. It is an innovative and very secure way of paying for goods and services throughout

Ghana. It anchors on biometric (fingerprint) identification technology and allows smartcard holders to perform business and financial transactions such as fund loads and transfers, and payments for goods and services including bills, both online and offline. These can be done at any e-zwich point of sale (POS) or ATM across Ghana. Unique to the e-zwich is the biometric feature which reduces the need to use figures for purposes of identification while guaranteeing the security safeguards of traditional banking. All the cardholder requires to authenticate a transaction is his or her fingerprint. This eliminates the problem of identifying theft associated with card transactions authenticated through the use of PINs. Also, a person does not need to be a customer of a bank or have an account with a bank to have the e-zwich smartcard. To facilitate the smooth implementation of this project a private company, the Ghana Interbank Payment and Settlement System (with the banks on its governing board) has been set up to manage the payment and clearing system (Hesse, 2010).

Advantages of e-zwich
Hesse (2010) emphasize that the system has a number of advantages over traditional bank accounts, and stated some of the advantages as;
  o   The e-zwich is much easier to obtain than a traditional bank account. All one requires to obtain the e-zwich smartcard is one's fingerprints and any photo identification such as a passport or driving license.
  o   A cardholder can perform all transactions associated with a traditional bank account: paying for goods and services, money transfers, cash withdrawals, bill payments, receiving salaries and pensions at any e-zwich POS terminal in Ghana.
  o   The informal section of the population who previously could not benefit from banking and financial services, thus creating a dual economy, now has access.
  o   Ghana is on the verge of developing a cashless economy, or reducing the use of cash to the barest minimum, as the e-zwich cardholder can access any service without the need to carry cash.
  o   The e-zwich has introduced cell-phone banking.

METHODOLOGY
The choice of research approach is based on the problems envisaged or known and questions of the study. Various approaches can be used to study a problem. According to Saunders *et al.* (2000), the most often used approaches are exploratory, descriptive and explanatory. Hence, descriptive approach has been employed to describe the effectiveness of the E-zwich in the mobilization of cash in Ghana. Descriptive approach was used because according to Zikmund (2000), it involves the collection of original data for analysis with the main purpose of establishing a factual picture of the object of study.

The study therefore used primary data. The primary source of data was gathered from interviews with bank staff and E-zwich merchants as consent was sought from the managers of the various entities that the research was conducted. Questionnaires were also administered to clients. Questionnaire administration provided immense opportunities because it produced valuable data and provided insight into issues that otherwise would have been difficult to gather using other methods. The interview was also useful and highly flexible and gave an opportunity to repeat and explain questions to the respondents, which ensured that the questions were perfectly understood by the respondents. It also offered an opportunity for further and instant probing on responses that were not clear or conclusive enough.

The population for the research was clients and merchants of E-zwich in the Kumasi Metropolis. The population also included staff of the various banks in the Metropolis that have E-zwich services. The study was narrowed to the Kumasi Metropolis. It is important to note

that even within the metropolis there are many E-zwich clients and so there was the need to take a sample of respondents from which basic generalizations could be deduced. Saunders *et al*. (2007) defined a sample as a subset of some part of a larger population, a population being any complete group of people or companies that share some set of characteristics. In order to arrive at an appropriate sample size for the research random sampling procedure was used to arrive at a sample size of sixty (60) clients. Five (5) staff each from Prudential Bank, Merchant Bank, Standard Chartered Bank and Amalgamated Bank was selected for the interview. The respondents were those who were responsible for E-zwich operations in the banks. The researcher therefore adopted the purposive sampling method to select the bank staff for the interview. In all twenty (20) bank staff were selected and twenty (20) merchants were randomly selected to assess the current state of operations of the E-zwich, and the challenges that confront the merchants.

The data analysis was done using Statistical Package for Social Sciences (SPSS) software to summarize the data and create appropriate tables, charts and graphs to examine the relationships among the variables.

RESULTS AND DISCUSSION

This section presents the results and discusses the data collected with the appropriate tools and techniques. All the questionnaires were completed and submitted for a 100% rate of response.

Rate of using E-zwich System

In trying to find out how often clients of e-zwich use the facility; the responses are shown in figure 4.1. In this figure, 10% of the respondents indicated they intensely use the e-zwich system. Twenty percent (20%) agree that they regularly use the service, while 44% indicated that they use the services but not as regular. Twenty six percent (26%) of the respondents on the other hand do not use the e-zwich services at all. The responses gathered shows that 70% of the clients do not often use the e-zwich services. In that case, we wanted to know what were the factors discouraging the clients of the facility from using it. We therefore furthered our quest to understanding the situation through our interview with the staff of the banks which revealed that most of the clients have enrolled but have not loaded funds on the card. This is because the clients, according to the interviewees, are skeptical about the success of the system. They continued that, even those who first acquired and loaded money on it, after facing some challenges decided not to reload funds unto their e-zwich card again. Due to these concerns, staff rated the e-zwich service as not being effective.

Figure 4.1: Rate of using E-zwich System
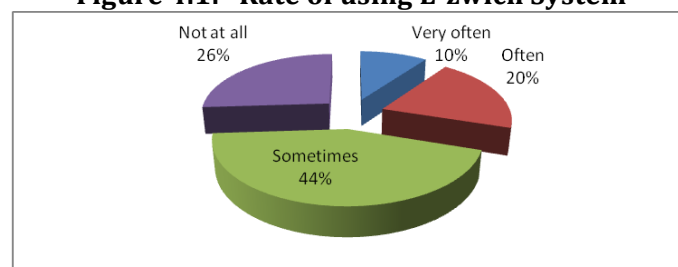
Source; Researchers' field work, 2013

The use of E-zwich in mobilizing Cash

While we were still contemplating with the ineffectiveness of the usage of the e-zwich facility by the clients as has been indicated, we wanted to know from the clients whether the facility is a good tool for mopping up or mobilizing cash which hitherto were not captured by the traditional financial mobilization processes. Hence, in Figure 4.2, when the respondents were

made to indicate whether e-zwich helps in mobilizing cash, 66% answered in the affirmative but 34% indicated otherwise. Indeed, with this response, we are optimistic that the facility is not that bad, but needs measures to strengthen its operational activities.

Figure 4.2: E-zwich in mobilizing Cash
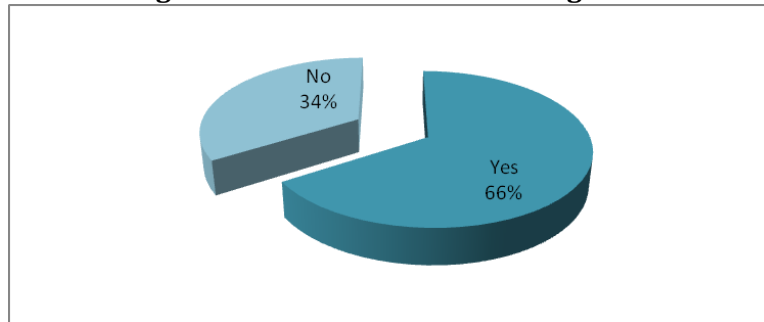
Source; Researchers' field work, 2013

Effectiveness of E-zwich in the mobilization of Cash

When the clients, in Figure 4.4 were made to state how they see the effectiveness of the e-zwich in the mobilization of cash, 4% indicated that it has been very effective, with 32% indicating that it has been effective. Whilst 8% were neutral in their response, 44% of the respondents indicated that it has been ineffective in mobilizing cash. On the other hand 12% of the respondents emphasized that the e-zwich has not been effective at all in the mobilization of cash. Agreeably, the responses gathered indicate that majority of the clients perceived the e-zwich system as ineffective.

Figure 4.4:   Effectiveness of E-zwich in the mobilization of Cash
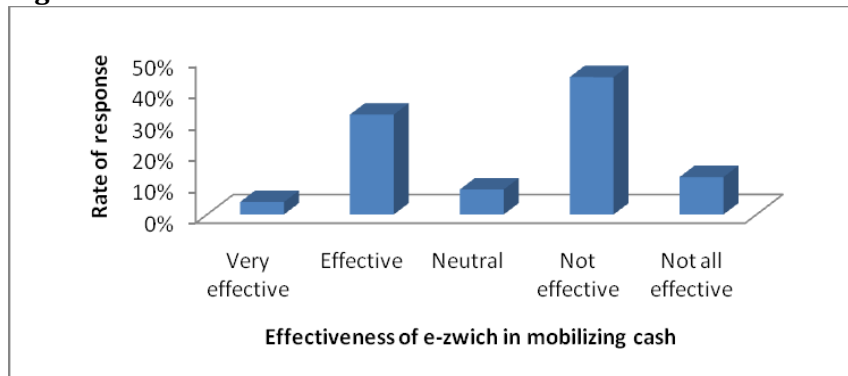
Source; Researchers' field work, 2013

Merchants in the Metropolis

Having understood that, it is indeed important tool for cash mobilization, we wanted to find out some of the factors affecting its usage. One of such factors is the availability of merchants within the metropolis through whom the e-zwich services are being provided. It is of immense importance because if the Kumasi Metropolis cannot boast of many such merchants, how then can the program be extended to the rural communities where the e-zwich is much needed for cash mobilization. Hence in Figure 4.3, 82% of the respondents were of the view that there are not enough merchants in the Metropolis. The study revealed that most of services that the e-zwich adverts claim to have in place, are not working. The merchants were supposed to provide these services but they were refusing to. Their reasons were that, they were not sure they were going to get their money back and would not have to go through the hassle with GhIPSS or the banks for their monies. Majority said that they had been advised by their accountants not to provide any other service apart from accepting payment. As a concern, the merchants emphasized that GhIPSS should intensify the education campaign about the e-zwich system since patronage is very low. Interview with the merchants revealed that the number of people using the e-zwich system in a day was very small. The users also alluded that, usually

merchants they visit do not have their POS device working effectively. Some of the merchants visited indicated that POS devices given to them were not functioning well and have been taken back by their banks. One major issue almost all shop owners complained about is network connectivity. They said that the network can be so bad that sometime they will have to take the POS's out of the shops to perform a transaction and profile download. 'This is wastes of time and very inconvenient', one frustrated merchant indicated.

Merchants are one of the critical stakeholders of the e-zwich project. The research showed that merchants' concerns seemed not to have been addressed adequately. These include buying and loading of credit units unto the POS device, unavailability of thermal roll on the market, network connectivity issues while performing "profile download" – a very important activity before transactions can occur on the POS device. So while GhIPSS seem to think that the e-zwich project has been a success, most of the merchants did not share this positive opinion.

Figure 4.3: Enough Merchants in the Metropolis
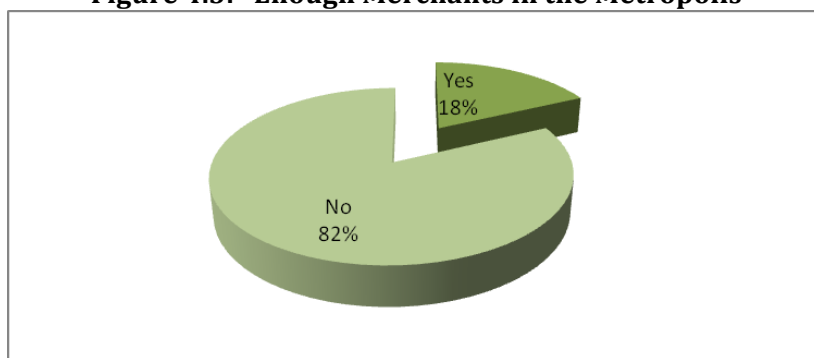
Source; Researchers' field work, 2013

Satisfaction with E-zwich Services
In the wave of the challenges the project is facing, we still though it wise to find out the level of satisfaction of the users. We did that because, according to Oyewole (2001), customer satisfaction leads to favorable word-of-mouth publicity that provides valuable indirect advertising for an organization. In Figure 4.7, 8% responded that they were very satisfied whilst 34% indicated that they were satisfied. Forty four percent of the respondents indicated that they were not satisfied. On the other hand 14% of the respondents were not at all satisfied with the services provided by the e-zwich. The responses indicate that more than half of the respondents were not satisfied with the services provided by e-zwich system.

Figure 4.7: Satisfaction with E-zwich Services
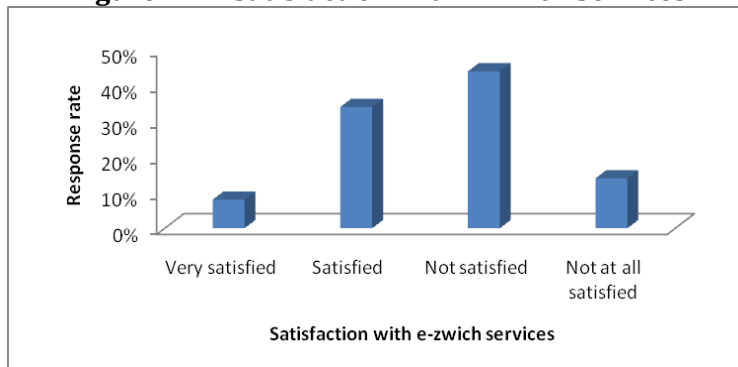
Source; Researchers' field work, 2013

Complaints lodged with Banks
Since these users are not satisfied, the right thing to do was to complain to authorities involved in the setting up of the project. When the respondents were asked whether they had ever

lodged a complaint with the banks 78% responded that they had, while 22% showed different opinion.

Figure 4.6: Ever lodged Complaints with Banks
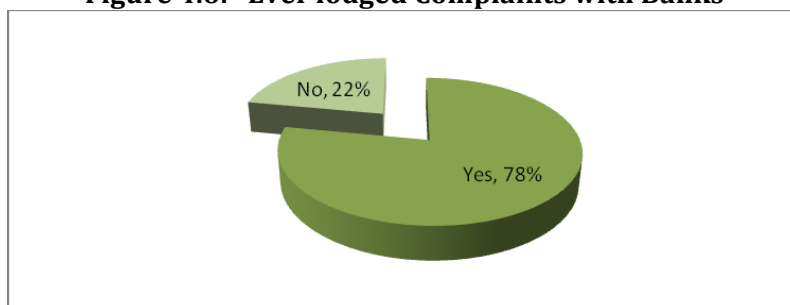
Source; Researchers' field work, 2013

Intention to stop using the E-zwich system

On the issue of respondents' intention to ever stop using the e-zwich system, 58%, as depicted in Figure 4.5, indicates that they have the intention to stop using the facility. This development, we think is inimical to the health of the country's economy. The implementation of e-zwich although have challenges, it is a step in the right direction for national development. Therefore it needs a concerted effort to avert the negative trend.

Figure 4.5: Intention to stop using the E-zwich System
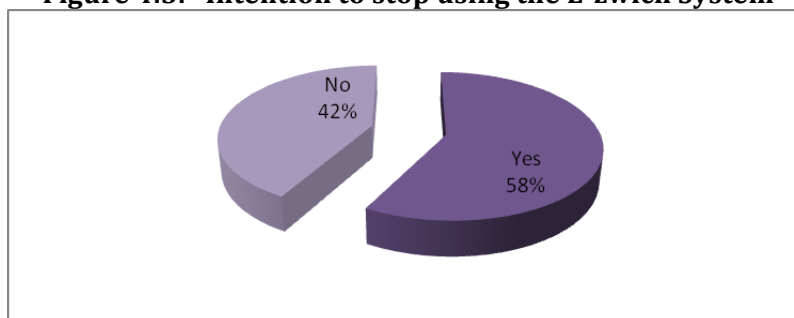
Source; Researchers' field work, 2013

Challenges that Stakeholders encounter

When staffs of the banks were interviewed, their concerns included the high cost of the POS device and the need to intensify education of the general public on the benefits of the e-zwich project. The POS device is expensive, and this was found to account for the non-availability of the device at all the premises of the banks and merchants. Another issue that came to light was that of ATMs. Almost all banks in Ghana had procured their own mainstream ATMs and the associated ATM cards before the e-zwich project was launched. It is therefore understandable that the banks have serious issues with the deployment of the e-zwich ATMs which requires further investments.

Staff also indicated that clients request for the Visa cards more often since they can be used worldwide. Staff further indicated that the e-zwich ATM currently installed is only e-zwich compatible and cannot accept both e-zwich card and the mainstream ATM.

It was realized from the study that currently most banks are running their own money transfer products where all the commission goes to them and is relatively less expensive. Due to these concerns, when the banks were asked to rate the success of the project, most of the respondents rated the e-zwich project as ineffective.

Interview with merchants revealed that the concerns of merchants seemed not to have been addressed adequately. These include buying and loading of credit units unto the POS device,

unavailability of thermal roll on the market and network connectivity issues while performing "profile download" – a very important activity before transactions can occur on the POS device.

CONCLUSION AND RECOMMENDATIONS

Infrastructure is necessary for the successful implementation of electronic payments. For electronic payments to be successful there is the need to have reliable and cost effective infrastructure that can be accessed by majority of the population. A network that links banks and other financial institutions for clearing and payment confirmation is a pre-requisite for electronic payment systems. Poor communication infrastructure is one of the reasons that hinder the e-payment system in Ghana.

Several electronic payment systems have been introduced into the country in recent times with the most significant being e-zwich smart card payment system, a national domestic smart card payment system meant to reduce the large amount of cash held outside the banking system. Though, about two-thirds of the clients stated that e-zwich helps in mobilizing cash, more than half of the respondents also indicated that, the e-zwich system is ineffective and more than half of the respondents were not satisfied with the services provided by e-zwich system. Again, banks are looking at the huge expenditure against non-existent benefits being derived from the project, with some even contemplating withdrawing from the e-zwich project.

The merchants are raising concerns with buying and loading of credit units unto the POS device, unavailability of thermal roll on the market and network connectivity issues while performing "profile download" – a very important activity before transactions can occur on the POS device. Compounding to the issues, clients are also facing the unavailability of enough merchants in the Metropolis while most of the small available merchants they visit do not have their POS systems working effectively.

In developing countries, remittances represent the primary source of foreign exchange and generate a significant engine for consumer spending. Ghana being a developing country is no exception. However a chunk of these remittances are held in cash and circulate within the informal sector of the economy and therefore being kept outside the banking system. These remittances do not contribute as strongly to formal economic growth as they could. It is recommended that financial institutions issue e-zwich cards to recipients of remittances as that could keep some of their monies with financial institutions.

Banked or un-banked, it is obvious that the active population is now hurting under the burden of the inconveniences and constrictiveness of having to endure heavy, cumbersome and usually unsafe cash-based payments in their day-to-day affairs and transactions. The use of Information Communication Technology (ICT) products to simplify and speed up financial transactions has become part of everyday life in the developed world, whereas several parts of Africa had no such experience. The use of any electronic transaction as a common platform for the financial sector would reduce physical circulation of cash. The government should therefore use the available resources to intensify the use of the e-zwich system as this would reduce the physical handling of money currencies. The advantage here is that the government would not spend huge sums of money to print new currencies to replace worn out ones.

Nonetheless, trust is very critical to ensuring acceptance from users. E-payment and e-banking applications represent a security challenge as they highly depend on critical ICT systems that create vulnerabilities in financial institutions and businesses which can potentially harm customers. It is imperative for banks to understand and address security concerns in order to leverage the potential of ICTs in delivering e-banking applications.

E-zwich can be effective entry-level instrument for teenagers and young adults who receive transfers from their parents or guardians and possess a sizeable amount of money but are often ineligible to open a bank account which will allow a greater proportion of funds to remain within the banking system until they are spent. It is recommended GhIPSS to intensify the education of the general public about the benefits and importance of the e-zwich smart card system.

Lastly, as the Bank of Ghana is a major stakeholder, it should find ways of minimizing the cost of the e-zwich for the Banks. It is strongly believed that the cost implications if not checked can lead to the failure of the project since most banks are likely to back out of the e-zwich.

References

Abor, J. (2004), "Technological innovations and banking in Ghana: An evaluation of customers' perceptions", American Academy of Financial Management.

Ackorlie, C, (2009) Banking Survey, Business and Financial times

Anderson-Porisch, S. (2006),"The Unbanked—Who Are They?"; The Federal Reserve Board Capital Connections; Volume 3, No 2; Spring 2006.

Asokan, N., Janson, P., Steiner, M. and Weidner, M. (2000), Electronic Payment Systems IBM Research Division, Zurich Research Laboratory p1-16

Baah-Wiredu, K. (2007) "The budget statement and economic policy of the Government of Ghana for the 2008 financial year" Accra, Ghana pp. 415-416

Byers, R., Lederer, P. (2001), "Retail bank service strategy: a model of traditional, electronic, and mixed distribution choices", Journal of Management Information Systems, Vol. 18 No.2, pp.133-56.

Commonwealth Business Council (2004), 'Delivering Basic Services to the Poor: New Approaches to Old Problems,' Commonwealth Finance Ministers Meeting, Bandar Seri Begawan, Brunei   Darussalam, 16-18 September 2004.

Cooper, R.G. (1997), "Examining some myths about new product winners", in Katz, R. (Eds),The Human Side of Managing Technological Innovation, Oxford, pp.550-60..

Daniel, E. (1999), "Provision of electronic banking in the UK and Republic of Ireland", International Journal of Bank Marketing, Vol. 17 No.2, pp.72-82

Fiallos, F. and Wu, L. (2005) Digital Money: Future Trends and Impact on Banking, Financial Institutions, and eBusiness

Gummerus, J., Liljander, v., P, M. & Riel, A.v. (2004) Customer loyalty to content-based Web sites: the case of an online health-care service. Journal of Services Marketing 18, 175-186

Hesse, D.A. (2010), The e-zwich electronic clearing and payment system, Chamber of commerce Humphrey, D. B., Kim, M. & Vale, B. (2001). Realizing the gains from electronic payments: cost, pricing, and payment choice. Journal of Money, Credit, and Banking, vol. 33, No. 2, pp. 216-234.

Lee, H.J., Choi, M.S., & Rhee, C.S., (2003) traceability of double spending in secure electronic cash systemProceedings of the 2003 International Conference on Computer Networks and Mobile Computing, IEEE Computer Society.

Lee, D.G., Oh, H.G., & Lee, I.Y. (2004) A study on contents distribution using electronic cash system Proceedings of the 2004 IEEE International conference on e-Technology, e-Commerce and e-Service, IEEE Computer Society.

Mukherjee, A. and Nath, P. (2003), "A model of trust in online relationship banking", The International Journal of Bank Marketing, 21(1), pp. 5-16.

Reichheld, F.F. &Schefter, P. (2000) E-Loyalty: Your Secret Weapon on the Web. Harvard Business Review 78, 105-113.

Sathye, M. (1999), "Adoption of Internet Banking by Australian consumers: an empirical investigation", International Journal of Bank Marketing, Vol. 17 No. 7, pp. 324-34.

Saunders, M, Lewis, P. and Thornhill, A. (2000),.Research Methods for Business Students. (2nd Ed.) England: Pearson Education Limited.

Saunders, M, Lewis P. and Thornhill, A. (2007), Research methods for Business students, Pearson Education Limited, England

Stakelbeck F. Jr (2005) "China and e-banking" Global Politician 11/4/2005

Thornton, J., White, L. (2001), "Customer orientations and usage of financial distribution channels", Journal of Services Marketing, Vol. 15 No.3, pp.168-85.

Zikmund, W. (2000), Business Research Methods, Sixth edition, The Dryden Press

An Environmental Plan for Mysore, India

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ABSTRACT
This paper summarizes the report of a graduate level workshop that took place at the School of Planning, College of Architecture, Art and Planning, University of Cincinnati, USA, the objective of which was to prepare students to work overseas in data-poor environments as professional consulting planners. Several lectures were given to set the framework for the class of eighteen students to operate in sector-level working groups to prepare a 5-year plan to solve the urban environmental problems of Mysore, India, one of Cincinnati's sister cities, utilizing a real-world data base and a limited budget. This project culminated in the preparation of a professional quality plan. The instructor, who has over thirty years of planning experience in developing countries, including India, attempted to create an atmosphere within the project that duplicates the actual conditions of carrying out such a consultancy.

Key Words: Urban environmental management, UEM, environmental planning, planning for development, Mysore

INTRODUCTION

This paper is a case study of Urban Environmental Management (UEM) in developing countries that summarizes the results of a graduate level workshop that took place at the School of Planning, College of Architecture, Art and Planning, University of Cincinnati, USA from August to December 2013. The objective of the workshop was to prepare students to work overseas in data-poor environments as professional consulting planners. Several lectures were given to set the framework for the class of eighteen students to operate in sector-level working groups to prepare a 5-year plan to solve the urban environmental problems of Mysore, India, one of Cincinnati's sister cities, utilizing a real-world data base and a limited budget. The seven working groups or sectoral teams (Poverty Alleviation, Industry, Sewage and Solid Waste, Transportation, Energy, Water and Finance) conducted internet and library research and wrote sectoral reports, which were combined to form the Environmental Plan for Mysore.

POVERTY ALLEVIATION

Problem Statement

The State of Karnataka's poverty rate is estimated at 24.53% (Government of India Planning Commission, 2013). The current population is 920,550 individuals, 461,042 males and 459,508 females, making up 215,061 households (Mysore City Corporation, n. d.). 225,810 individuals live below the poverty line (BPL). An article from *The Hindu*, however, cites more than twice as many BPL households (Bennur, 2013).

While the Mysore City Corporation lists a slum population of 10,394 (or 44,486 individuals (Mysore City Corporation, n. d.), the Administrative Staff College of India in its City Sanitation Plan lists 10,380 households (or 46,776 individuals) (Administrative Staff College of India, 2011), and the Government of India Census of India reports 8,843 households (or 39,029) individuals (Government of India, Ministry of Home Affairs: Office of the Registrar General &

Census Commissoner, India, 2013). While 13% of the Scheduled Caste and Tribe population lives in a slum, those individuals make up 50% of the slum population.

Mysore's slum dwellers are significantly less literate than the overall population. While the city boasts an 86.84% literacy rate, 89.96% and 83.73% for males and females, respectively, the corresponding rates for slum dwellers are 63.38%, 67.17% and 59.62% (The Indian Census 2011). Slum unemployment is 56% overall, and over 72% of women in the slums are unemployed.

In the 69 slums in Mysore, nearly two-thirds, i.e. over 30,000 individuals, reside in slums with a population of 800 or more (Administrative Staff College of India, 2011). By focusing efforts on these 22 larger slums (Exhibit 1), the efficient allocation of efforts and funds to benefit the as much of the population as possible can be maximized. To this end, it is important to recognize that as slum size decreases, particularly in terms of population and numbers of households, it is most appropriate to seek a remediation that eliminates the settlement or incorporates it into an adjacent existing neighbourhood. In some cases, this approach also allows for the aggregation of slums in close proximity.

Using such a methodology, the interventions suggested here can include three additional slums reaching nearly 70% of the total slum population. Direct interventions, therefore, are focused on 25 slums (Exhibit 2).

Exhibit-1: Slum Locations
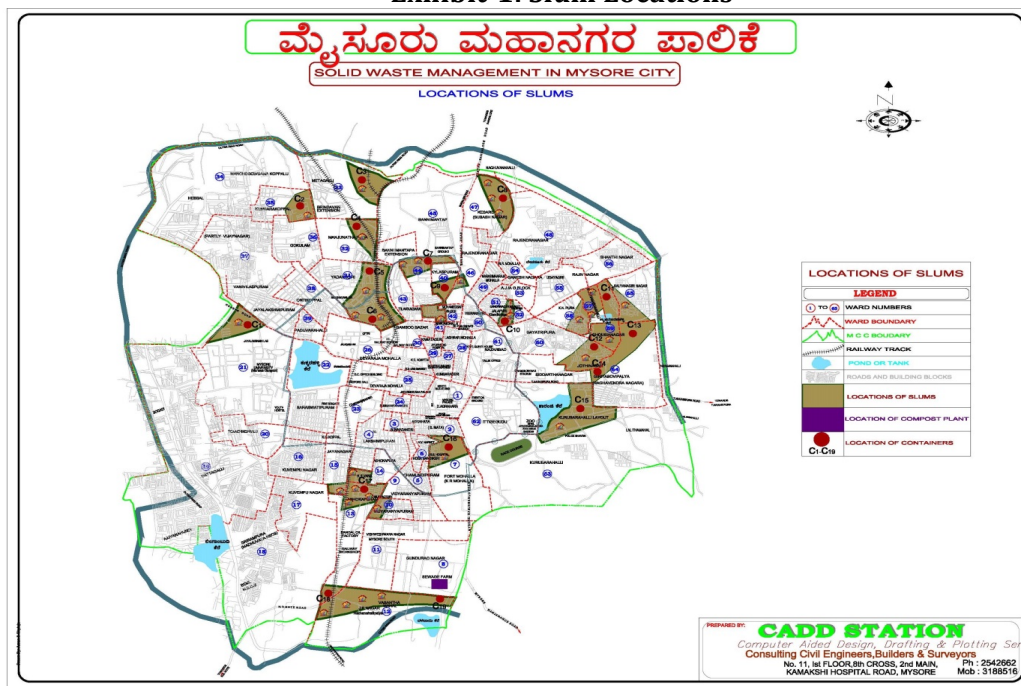
Source: CADD Station

Exhibit-2: Slums for Direct Alleviation

Ward	Slum Name	POP	HH	BPL POP	BPL HH	%BPL TOT
8	Chinnagirikoppalu	2,163	550	2,163	550	4.6%
9	Nellurushed Part A	866	200	866	200	1.9%
9	Nellurushed Part B**	594	143	580	140	1.2%
6	Ashokapuram 13th Cross	987	202	987	202	2.1%
8	D. Devaraja urs Colony	895	157	895	157	1.9%
28	Part of Kumbarakoppalu* **	525	122	525	122	1.1%
29	Metagalli Harijana Colony & Adhijambava Colony	963	204	963	204	2.1%
29	Metagalli Janata Colony	1,181	290	1,181	290	2.5%
29	Part of Metagalli* **	465	108	465	108	1.0%
30	Manjunathapura	900	190	900	190	1.9%
34	Medhars Block	1,091	289	1,078	285	2.3%
42	Budbudakeri Chikkaveranna Road	803	226	794	223	1.7%
42	Budbudakeri Pulikeshi Road	1,438	321	1,438	321	3.1%
44	Halim Nagara*	882	163	882	163	1.9%
45	Ekalavya Nagara*	1,383	353	1,383	353	3.0%
46	Kesare near slaughter house	1,258	285	1,258	285	2.7%
51	Siddappaji Cross Road 1,2,3	881	185	881	185	1.9%
51	Chamundeshvari Road Gandinagara	967	225	967	225	2.1%
51	Siddappaji Cross Block A	1,038	215	1,003	208	2.1%
52	Kalyanagiri Usmani Block*	2,067	389	2,067	389	4.4%
56	Sathagalli	2,509	523	2,509	523	5.4%
59	Kyatamaranahalli A.K. Colony	1,781	363	1,781	363	3.8%
59	Gousiya Form House*	1,730	357	1,730	357	3.7%
59	Gousiyanagara A Block*	3,657	730	3,657	730	7.8%
62	Jyothinagara	1,278	212	1,025	174	2.2%
	Totals	**32,302**	**7,002**	**31,978**	**6,947**	**68.4%**
	Percent Overall	**69.1%**	**67.5%**			

*Designate Non-notified Slums; ** Designate Adjacent Slums*

Source: Administrative Staff College of India, 2011.

Programs for Poverty Alleviation

Rather than attempt to relocate the slums, a renovation of the current slum development should take place. In many cases people who have lived on the land for many generations do not have property rights. However, it is important that the land belong to the family that is living on it before renovating. It is recommended that in Mysore a partnership be forged with current government interventions, such as the Jawaharlal Nehru National Urban Renewal Mission (JnNURM). JnNURM is at the forefront of land tenure and building projects in India, and it helps to bring together financial institutions, citizens, and other nonprofit organizations in order to make sustainable growth and development take place. JnNURM finished the preparatory phase of its Mysore renovation project, and began the infrastructure phase in June 2013.

According to the Karnataka budget of 2010, the state has set aside US$3,194,000, to build housing for homeless slum families. With this budget, it will be able to provide housing to one third of the neediest population (Saral VAT: Complete VAT Solutions for Karnataka, n.d.). It is suggested to supplement the other two thirds of this cost so that all families in need of shelter can obtain a home. By providing citizens with the basic necessities, there will be a decrease in the amount of assistance required for each family over time, and the city's overall worth will increase due to increased employment and decreased poverty.

Existing housing programs be supplemented financially by providing US$2,000,000 the first year. This will allow the NGOs that have formed a reliable working relationship with the

people of the area to continue their work while meeting this chapter's overall goal of providing housing for the poor population of Mysore. An additional amount of US$1,250,000 will be given each year thereafter for four years. At the end of the five-year period, it is expected that 15,000 family dwellings will have been developed, with the land tenure rights provided to the families residing on the land.

Community and Sack Gardens
Beyond the fact that in India malnutrition accounts for roughly 50% of all childhood deaths, it also limits body and brain development and the capacity to learn. Coupled with malnourishment, vitamin and mineral deficiencies play a large role in children's underdevelopment in India. To help fight these deficiencies and malnourishment, the provision of leafy green gardens which can grow produce such as kale, collards, turnip greens, Swiss chard, and spinach in addition to other vegetables, is recommended. These greens can grow in resilient conditions and shallow soils to provide families and children with the appropriate vitamins and minerals commonly missing in the slums.

Keyhole Gardens
To accomplish this, the installation of a type of garden developed by TECA called a "keyhole" garden is recommended. TECA claims that keyhole gardens at their prescribed size can grow enough produce to feed a family of 8 persons with a production of at least 5 varieties of vegetables to support dietary diversity. The greatest benefit of TECA's keyhole gardens is that they require little labor, little water and no fertilizers or pesticides, and they act like an organic recycling tank, using food and garden waste as fuel to grow vegetables (Chiara, 2012). Someone unskilled in construction can build one with simple instructions.

Each keyhole garden unit should be constructed with Interlocking Stabilized Soil Blocks (ISSBs) produced by new business owners from the ISSB block compressing machine buy-out program specified later in this section.

Exhibit 3: Keyhole Garden

Source: Chiara, 2012.

Sack Gardens
Alternatively, if there is not ample space for construction, sack gardens may be employed. Sack gardens offer many of the same advantages that keyhole gardens do, such as low maintenance and labor requirements, drought resiliency, and little to no fertilizer. Sack gardens require only a small area, but yield a relatively large amount of garden growth. A one cubic meter sack may provide as much as five cubic meters of potential growing area, and can grow vegetables with mostly reused materials, so the cost is generally limited to the seeds and seedlings (Appropedia, 2012).

Exhibit 4: Sack Garden

Source: Cheffy, 2013.

Toilet Block
Health is a major issue in slums with people living in very close proximity to one another without toilet facilities or waste removal. The water is often contaminated, and diarrhea, parasitic infestation and fecal oral epidemics are common. Thus, the need for basic toilet facilities is apparent. In conjunction with the water and sanitation team, the installation of self-sustaining toilet blocks throughout 19 of Mysore's 69 acknowledged slums is proposed (Administrative Staff College of India, 2011). Each toilet block has the capacity to serve over 1000 people per day and reclaim the waste to produce biogas for heating and cooking, potable water and fertilizer.

The construction of these facilities is also coupled with the above mentioned business initiative for the inhabitants of the slums. Each toilet block facility will be constructed with ISSBs, which use a mixture of local clay soils (typically 90%) and a small amount of cement (10%). This mixture is compressed with the manually operated ISSB machine. It is proposed that after the completion of a toilet block, the workers are offered a buy-out program for the ISSB compression machine to begin their own business. More detailed information can be found about a proposed toilet block in the water and sanitation section of this plan (Sec. 3).

Gender-based Hiring or Gender-based Training Programs
Since there is a clear correlation between poverty and gender, it is recommended that incentives be created for the employment of women who have not been employed in the previous 12 months, and single mothers from Scheduled Castes or Tribes. The recommendation is initially to charge a tax by industrial sector for *not* hiring a predetermined quota from such a population, rather than to provide tax abatement for doing so. The proceeds would go to the development of vocational and technical education centers for these women. Over the medium to long term, the charge should be converted to abatement for hiring and training the target population. To this end, a sum of US$250,000, equally spread out over 5 years, is suggested for awareness campaigns and the partial funding of education centers.

INDUSTRY
Background: Indian Industrial Development
The second largest city in Karnataka state, Mysore is unequivocally its cultural center. The Dasara is a ten day celebration with a 400 plus year history, and includes parades,

performances, and other cultural and religious events. The festivities attract tourists from the state, country, and even international guests. In addition, the city's rich architectural heritage, lush gardens and zoo are major attractions. Between 2006 and 2010, the number of tourists who visited the city increased from 1.4 million annually to over 3 million (Kumar, 2011). Other historically important industries are sandalwood and silks (Mysore City Corporation, 2013). Recently, the city, with the aid of organizations like the Karnataka Industrial Areas Development Board, has expanded its economic base to include technological services, engineering and heavy industry.

Mysore Industrial Areas
Following the direction of the State's Fiscal Reforms Facility, the state government in Karnataka set aside more than 5280 acres of land to establish 45 special economic zones (SEZs). Of these approved zones, 33 were committed to information technology (IT), generating an investment in the state of over US$3.9 billion, which will provide direct employment to 615,500 people (Mudde, 2008). Mysore will have SEZs committed to food processing, IT, and readymade garments. Industries established in SEZs enjoy a number of benefits, including tax holidays for 15 years and exemptions from levies such as Value Added Tax, entry tax, and octroi. In addition, industries in SEZs do not require licenses for imports and are exempt from paying customs duties on capital goods and raw materials (The Hindu, 2006).

The Karnataka Industrial Areas Development Board (KIADB) is essentially a blend between a land bank and a real estate development enterprise. The organization acquires land to form industrial areas in the state, provides basic infrastructure in those industrial areas, and then attracts global investors. To date, the KIADB has formed 141 industrial areas in the state, covering over 40,000 acres. The largest of these industrial areas is Hebbal, which includes Electronic City, home to campuses for both Infosys and Wipro. It consists of 1387 acres of land, which is primarily dedicated to fostering growth in information technology (IT). In 2007 - 2008, the Mysore-based IT sector contributed US$ 220 million to the Indian IT export economy (The Hindu, 2008).

Problem Statement
While revenues generated from tourism will likely grow with the rise of the Indian middle class, the city cannot afford to maintain a singular focus on tourism alone. By adopting policies to attract investment from domestic and international interests, Mysore might diversify its production to include a broader base of sectors within the city's portfolio. Bangalore, the economic heart of Karnataka State and an international source of expertise in IT services, sits 143 km to the northeast. While a similar trip in the United States or Europe might take 1.5 hours, due to limited transportation options and inferior road quality, the trip from Mysore to Bangalore takes twice as long. As a result, companies like Infosys and Wipro, which have offices in both Bangalore and Mysore, depend on private helicopter services to travel between the two, which is not a practical option for the general public. Mysore's primary developmental gap is not one of designation, but rather system integration.

Selected Options
In order to address this challenge, the city of Mysore should adopt three options. The first is the construction of an international airport, which will require nearly 343 acres of land to be acquired around the existing Mysore airport and consist of 3 stages of construction.

The second is the privatization of electricity distribution in the city of Mysore to allow energy companies, rather than the government, to control the transmission and distribution of electricity.

The third option is higher investment in Mysore's growing manufacturing and retail sectors and a change in policy. This will involve increasing the funds allocated for the improvement of infrastructure conducive to reliable logistics, including expansion and repairs of existing highways, land acquisition for distribution centers, and technological advances in the freight industry. The growing retail industry will require a change in policy from the central government. That is, the government policy requiring single-brand retailers to have no less than 30% of their products originate from India should be lowered to 15%.

SEWAGE AND SOLID WASTE

Problem Statement

Sewage Situation in Mysore

The management of sewage, which encompasses sewage collection and transportation, as well as its reuse, is a challenge. This is compounded by sewage overflows into open spaces and drainage systems. Presently, the existing sewage treatment plants in the city are also not able to treat the quantity of sewage generated, which in turn poses difficulties for sewage management. Problems include the fact that many households resort to open defecation, despite the fact that they have toilet facilities. In addition, public restrooms are inadequate, the sanitation in many government schools needs to be upgraded, and many commercial areas lack adequate sanitation facilities and depend on public ones. With the pressure on public restrooms, many people in commercial areas also resort to open defecation (Mysore City Corporation, 2011).

Solid Waste Management in Mysore

Solid Waste Generation

The population of Mysore generates about 385 tons of solid waste a day. This excludes waste generated from industries, restaurants, hospitals, construction activity and bio-medical waste (Harish, 2012). At the household level, both degradable and non-degradable wastes are generated. Vegetative matter constitutes the bulk of household solid waste, an estimated average of 45.65% of all household waste generated.

It is estimated that by the end of 2020, the waste generated could reach 583 thousand tons per year (Mysore City Corporation, 2011), which requires improved solid waste management systems to control the generation, collection, transportation, processing, treatment and disposal of waste.

Solid Waste Collection

The total amount of solid waste transported to the composting plant is 273 metric tons per day (Ibid.) from the total of 443.5 tons per day generated, producing an efficiency rate of 61.5%. According to the Draft City Plan of Mysore, upon arrival at the composting plant (200 TPD capacity), much of the waste is dumped on adjacent vacant land due to the plant having reached its full capacity or intermittent breaks in operation. When waste is processed, organic waste is composted, dried, packaged and stored to sell, whereas non-compostable waste is tossed onto the adjacent land. The inefficiency and dumping of nonorganic waste in an ad hoc manner has been detrimental to the quality of life for the surrounding neighbors as the unpleasant smell and unsanitary conditions are worrisome (Bennur, 2011). To accommodate the increasing generation of solid waste in Mysore, and to ease the burden on the composting facility, a more efficient process is needed, including a landfill.

Selected Options
Selected Options for the Sewage Sector

The following projects were selected for implementation to improve Mysore's sewage situation:

Exhibit 5: Selected Sewage Options for Implementation

Rank	Projects
1.	Construct ventilated improved latrines at discounted, subsidized prices for households.
2.	Extend the de-silting of manholes and the repair of UDGs.
3.	Re-construct nalas with concrete and de-silt open drains.
4.	Construct toilet facilities for all public schools in Mysore.

Source: Edelman, 2014.

Selected Options for the Solid Waste Sector

Based on their political and economic feasibility, as well as the prospective impact of all possible technical alternatives, the following solid waste options were selected for implementation:

Exhibit 6: Selected Solid Waste Options for Implementation

Rank	Projects
1.	Develop, adopt, and implement new responsibility acts and government policies.
2.	Reform the hazardous waste sector.
3.	Decentralize recycling centers.
4.	Establish and develop a landfill with a gas collection system.
5.	Enlist all health facilities of the existing treatment system available in the city.
6.	Purchase biomedical waste bins to facilitate waste segregation at health facilities.
7.	Implement a study of decentralized biogas centers to evaluate expansion possibilities.

Source: Edelman, 2014

TRANSPORTATION
Problem Statement

Mysore's transportation network faces significant pressure. First, the city's population is growing at a rapid pace, as is the number of registered vehicles (Mysore Urban Development Authority, n. d.). Second, the numerous transportation modes (motorized and non-motorized bikes, four-wheeled vehicles, buses, auto rickshaw, etc.) are not separated from each other, causing sometimes chaotic and dangerous situations, as well as traffic jams in many areas. Third, Bangalore, the largest city in Karnataka, suffers from such severe congestion that some believe the industrial operations in Bangalore will expand closer to Mysore in order to escape it (Ibid.). If Mysore does indeed absorb economic activity from Bangalore, the city must steer this growth into areas that will cause the least congestion and pollution. Fourth, the commuter rail line between Bangalore and Mysore has yet to be fully doubled and electrified, which may contribute to an influx of vehicular traffic between the two cities due to rail delays (Aravind, 2013). Fifth, Mysore is a major tourist destination for Indians.

Priorities

The following goals were deemed priorities for improving the transportation network and accessibility in Mysore:

Exhibit 7: Priorities for Future Transportation Projects

Rank	Priorities
1.	Connect existing transportation options into an integrated system.
2.	Improve public transportation, specifically the crowded bus system.
3.	Discourage vehicles from entering Mysore through park-and-ride facilities and tolling of major roads entering the city.
4.	Boost pedestrian safety through investment.
5.	Reduce tourist traffic through a year-round shuttle system.
6.	Improve the commuter rail system by completing the doubling and electrification of the line between Bangalore and Mysore.
7.	Improve existing roads, especially major roads entering the city.
8.	Implement public policies that ban certain vehicles on major roads to improve traffic flow and increase safety.

Source: Edelman, 2014

ENERGY

Background
This section of the Environmental Plan for Mysore discusses issues of energy in the city, and advocates the implementation of three strategies that will cleanly increase electricity capacity in Mysore without the construction of new generation stations. Increasing end user efficiencies through the retrofitting of the Amba Vilas Palace illumination system and initiating a twenty year city-wide energy efficiency rebate program is the first. Benign generation through the capture of low temperature waste heat from industry and existing thermal stations for additional generation, without any additional fuel use and through the introduction of solar powered irrigation pumps, is the second. Enabling agriculture to redirect the use of natural gas from fertilizer production to use as a cleaner and more efficient replacement of coal is the third.

Mysore's Energy
Mysore's energy demands are geometrically increasing. By 2020, the population is expected to increase to 1,412,800 (Mysore Urban Development Authority, 2012), and an increase in industrial and consumer activities is expected. Therefore, the municipality needs to address its systems of services, which include water, sanitation, transportation and energy. The city's electricity production is directly tied to that of the state, and production has been steadily increasing, much of it derived from hydro, thermal, and, happily, cogeneration, while electricity sales in Karnataka are primarily to agriculture, high voltage industry and for domestic needs. Agricultural demands are for irrigation purposes, industrial demands are predominantly for IT, and domestic demands are for illumination and appliances.

Problem Statement
With a growing population and a desire for electricity intensive IT industrial development, Mysore's energy demands are surging. The main goal of this section's proposals is to increase electric generation, while both avoiding excessive capital outlays for additional large-scale generation plants and minimizing the environmental impact of capacity enhancement.

Priorities
The following are considered priorities for improving energy efficiency and long-term sustainability in Mysore:

Exhibit 8: Priorities for Future Energy Projects

Rank	Priorities
1.	Conserve energy through end user efficiency enhancement.
2.	Maximize energy potential and reduce waste quantity by returning waste items to the stream of energy production through benign electric generation enhancement.
3.	Reduce diversion of natural gas to fertilizer production with national agricultural reform.

Source: Edelman, 2014

Selected Technical Options

Project 1: Light Bulb Replacement in Amba Vilas Palace

According to Greenpeace (Greenpeace India, 2007), if the Amba Vilas Palace were to switch all of its 96,000 bulbs from incandescent to compact fluorescent (CFL), it could reduce its annual electricity usage from 120,000 KWh to 40,000 KWh, lower its carbon footprint by 46,632 kg. (102,590 lbs.), and shave nearly US$ 66,764 from its annual electricity expenditure. On the other hand, switching to LED bulbs would be more costly than CFL replacement, but would yield greater benefits. The average cost per bulb is US$36, but they last 50 times longer than incandescent bulbs and use 1/6th of the energy. An investment of US$3,500,000 to replace the bulbs and secure spares would save US$25,608,000 during the 50,000 hour lifespan of LED bulbs.

Project 2: Community Wide Energy Efficiency Rebate Program

Structural retrofits that improve energy efficiency not only reduce end use expenditures, but also stimulate the local economy through workforce capacity building and material stream provision and recycling. This suggested program, which would be heavily advertised (US$50,000), would provide up to US$10,000 in rebates to a building owner for the appropriate technology changes and tightening of the cooling envelope. Over a 20 year period, this program would train certified energy auditors (US$132,000), incentivize product manufacturers and waste recovery (US$200,000,000), and offset the cost of building additional electric generation stations through energy savings.

Project 3: Waste Heat Recovery

Given that 27% of the electricity in Karnataka is generated thermally, primarily through the combustion of coal, a waste heat recovery system is a strategic manner in which to increase production without increasing the quantity of fuels burned. Dürr Engineering (Dürr AG, 2013) produces variable Organic Rankin Cycle (ORC) models to fit specific heat availabilities and generation requirements, adding an additional 11% or 22% gain in the conversion of heat to electricity in the original thermal system. A feasibility study should be conducted to determine the specifications of the units required for such a project, as well as the technical, logistical, and financial need.

Project 4: Agricultural Reform

Precision Agriculture

A growing technology is the use of GPS and GIS technologies for the more frugal application of fertilizers on medium to large-scale farms in which large tractors are required. Several land-grant universities and private firms in the US offer technical assistance in getting farm-scale systems set up. To demonstrate applicability in Karnataka, 3 or 4 demonstration projects should be established. The average cost for establishing a system is US$15,000, given that there are 100 acres and the appropriate farm equipment to justify such a system.

Crop Rotation and Low/No Till Farming Techniques
It is recommended that education, training, and starter seeds for farmers be provided through Mysore University to teach new sustainable farming practices to increase energy efficiency and yield crops. The benefits of these techniques are soil conservation, watershed protection and the decreased use of fertilizers. This reduces the agricultural use of natural gas, which can then be applied to thermal electricity reduction.

Poly-culture Market Gardening
For smaller agricultural establishments, a movement away from commodity crop production and toward poly-culture and specialty crops is encouraged, not only to reduce the use of artificial fertilizers, but also to increase the share of perennials, which will help keep the soil intact, as well as protect the groundwater, and to move into the retail market rather than being victimized by required wholesale pricing.

WATER

Background
Flooding
Flooding is a significant problem within Mysore, particularly during the May to November monsoon season. Flooding causes problems when combined with human waste and pollution. The practice of open defecation in the city, as well as a waste treatment plant being located in the flood zone, leads to human waste being picked up by the flood waters and sitting as a breeding ground for illness. As the water dissipates, it carries these pollutants to the water sources thereby resulting in unsanitary drinking water, especially for the impoverished slum dwellers.

Sanitation - Toilet Complexes
Mysore's slums do not have consistent access to sanitary sewage removal. Furthermore, methods of waste disposal may vary by household. One house may have an internal septic tank that is utilized, whereas the next house may have the same internal septic tank, but the space that it occupies is used for storage of household items, thus rendering the septic tank useless. Another house may drain into an open drainage channel (nala), and a neighboring one may drain sewage into storm water drainage or underground drainage. Lastly, individuals may practice open defecation. This presents a lack of uniformity in waste sanitation. The Karnataka Municipal Reforms Cell, as cited by the City Sanitation Plan, Mysore, Karnataka (2011) identifies the following breakdown of slum sewage disposal: digester, 30.2%; not connected, 31.2%; storm water drainage, 44.1% and underground drainage, 53.1%. Given the incidence of poorly regulated human waste disposal, the risk of drinking water contamination resulting in subsequent outbreaks of fecal-oral transmitted disease remains high without a targeted slum intervention. A centralized toilet complex in portions of the slums can aid in combatting this threat to public health as it can be standardized and regulated. The water team recommends a toilet complex that requires no connection to city sewers but allows for regulated operation, in particular the successful model at Adarsh College, Badlapur (see Section 6.3.2).

Water Supply
Today, 85% of Mysore's residents receive drinking water from a piped supply system sourced from the Kaveri and Kabini Rivers (Scheme, 2006). There are also numerous private companies selling bottled water in Mysore. These companies provide water that is not always hygienic, and can be more expensive (Raju et al., 2010). Moreover, there are many limitations to the availability and uses of this supply: piped water is available for approximately 3 hours/day for household use, as water for agricultural purposes limits usage in the city

(Maramkkal, 2012). In addition, Unaccounted for Water (UFW) due to theft, lack of operation and maintenance, and inadequate storage accounts for up to 50% of water usage (Scheme, 2006).

Mysore has adopted a plan addressing many of its water supply problems. Steps to rehabilitate water facilities, impose strict metering and efficiently retain water are being considered (Scheme, 2006). In addition to the city's efforts to ease the competition of water resources and availability, it is recommended that water conservation and groundwater recharging methods be implemented. In particular, residents of slum dwellings have inadequate access to water for daily use. Small-scale, residential options of water harvesting may be a beneficial means of remediation.

Selected Options
Urban Tree Pits and Constructed Wetlands
To address the issue of flooding within the city of Mysore, two projects to be implemented consecutively are recommended: a series of 378 urban tree pits and the installation of 2, 1 to 4 acre wetlands. Urban tree pits for this project are a structured planting of trees for the specific purpose of absorbing rainwater runoff while filtering toxins and pollutants from the water, including suspended solids, metals, and nutrients. Urban tree pits have the potential to absorb and filter up to 954 gallons of water per rain event depending on the tree that has been planted (Charles River Watershed Association, 2008). The two wetlands should be located at the base of decline of highlands in order to retain storm water runoff from higher elevations.

The Adarsh College Model

Exhibit 9: Adarsh College Model
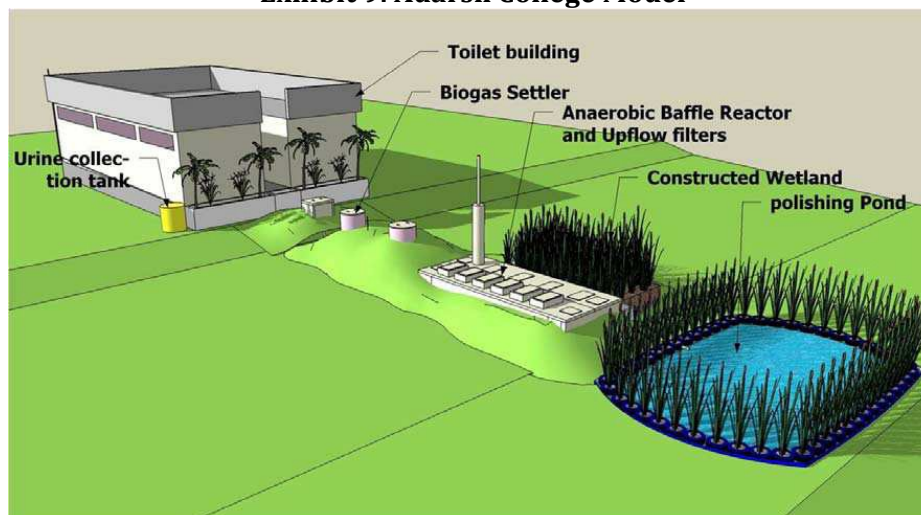
Source: Zimmerman, Wafler and Thakur, 2010.

The Adarsh College Model is the recommended option for sanitation. The system consists of a toilet house with passive (gravity fed) urinals with 4 pour flush toilets and 1 western style toilet per gender. Additionally, 5 urinals are built in for a total of 15 waste collection units. The collection units drain into a passive treatment complex that consists of a biogas settler, an anaerobic baffle reactor and up flow filters. The biogas settler produces 6.8 cubic meters of gas for cooking or lighting purposes (Zimmermann, Wafler and Thakur, 2010).

The anaerobic baffle reactor/upflow complex holds 1.5 days of wastewater and produces 9.75 m^3 per year of agriculture grade compost. The toilet complex produces 8 m^3 of wastewater per day that flows through a wetland with a commensurate capacity to a collection pond. The entire complex occupies approximately 93 m^2. Given that the toilet blocks require a slight gradient for passive drainage, excavation of the intended areas for the treatment system will provide soil that can be utilized for the creation of Interlocking Stabilized Soil Blocks or ISSBs (Ibid.).

Drinking Water

Rainwater harvesting (RWH) is proposed here as the most efficient and easily implemented option to supplement Mysore's water supply, especially in slum areas. Karnataka has already heavily invested in RWH (Scheme, 2006), and the National Institute of Engineering – Center for Renewable Energies and Sustainable Technologies (NIE – CREST) has started urban programs and training on RWH within Mysore. Their projects include a RWH system at Mysore Palace using rainwater for gardening. Because of Mysore's urban environment and high density of housing in slum areas, using rooftop RWH systems is suggested.

FINANCE

Objective

The objective here is to identify funding sources, both foreign and domestic, for the various projects requested by each sectoral group. The financial team reviewed all requests for funds and created a database that would determine the financing ability of each project based on projections of foreign direct investment, foreign aid and Mysore's capacity for municipal debt. The process of financing each sector's projects is outlined below.

The Process

Research Process for Foreign Direct Investment

In this paper, Foreign Direct Investment (FDI) is defined as a direct investment of one country in another. This is done either by investing in a previously existing business, or by financing a new one. The countries that have invested the most in India are detailed later in this section.

Research Process for Foreign Aid

Foreign aid is defined here as official development assistance (ODA) in areas of need such as food aid, emergency relief, peacekeeping, infrastructure, poverty alleviation, etc. The most significant foreign aid agencies in India are: JICA (Japan), DFID (UK), AFD (France), SIDA (Sweden) and USAID (United States). After calculating the total amounts given, the sectors each aid agency contributed to were identified. Certain countries had the propensity to focus on one sector more than another. For example, most of Japan's aid was tied up in transportation (jica.co, 2013), whereas France focused on renewable energies (afd.fr, 2013). In determining the amounts given to specified sectors, the team needed to make certain assumptions. For instance, if it found a project SIDA was involved in was with a city similar in size to Mysore, it assumed that SIDA would be willing to give the same amount to a similar project located in Mysore. Another aspect necessary to consider was the fact that Britain's foreign aid agency (DFID) is ceasing all aid to India as of 2015. It is, however, fulfilling all commitments made before then (gov.uk, 2013; gov.uk, 2011.).

Determining Mysore's Maximum Debt Capacity

Mysore does not publish its budget on an online database. As a result, an assumption was made that the debt capacity for the cities of Mysore and Cincinnati, USA were similar. The financial team determined Cincinnati's debt capacity, based on the 2014-2015 proposed budget specified on Cincinnati's website (Cincinnati-oh.gov, 2013), to be US$520,400,000 of

post- sale general obligation unlimited tax and debt. As of December 4, 2013, the 30-year US Treasury bond rate was valued at 4%. Therefore, the financial team assumed that Mysore could assume a maximum debt of US$30,094,783 per year based on the 30-year US Treasury rate of 4% and a maximum debt allowance of US$520,400,000. It was also assumed that Mysore would account for 20% of each year's total cost. If the 20% portion of Mysore's financing exceeded US$30,094,783 in any given year, then additional financing would need to be sought for the remainder of Mysore's 20%.

The Grant Application

While the need for funding to improve the environment in Mysore is significant, there is a limited supply of resources. Consequently, the financial team created a grant application for each sectoral team to complete. The grant application created the opportunity for each group to request funding in a structured manner. The financial team focused on the prioritization of projects, project cost per year, and percentage of project completed at the end of 5 years.

Database

The finance team compiled a series of Excel spreadsheets to document the detailed funding requests and identify foreign aid, foreign direct investment and debt capacity for Mysore.

Request for Funds

The Request for Funds spreadsheet (Exhibit 10) displays each team's funding requests from the grant application. As noted above, the assumption was made that Mysore would finance 20% of each project's total cost, and the fourth column from the left displays this. The total amount that Mysore needs to finance over the 5-year period is US$84,939,643. The funding without aid column shows the final cost of each project after Mysore's 20% is subtracted from the total cost. The second to last column shows the number of years each project would take to complete. Each sectoral team acknowledged that the finance team's role was to find money only for 5 years. Finally, the priority that each project was given by its team is shown on the very right.

Exhibit 10: Group Requests for Funds

Projects	Group	Project Cost (USD)	Local Currency Cost	Funding Needed (w/o Aid)	Number of Years to Construct	Priority
Urban Tree Pit	Water	$163,000	$32,600	$130,400	2	3
Decentralized Toliets	Water	$889,920	$177,984	$711,936	1	2
Rain Water Harvesting	Water	-			5	1
Ventilated Latrines	Sanitation / Solid Waste	$364,250	$72,850	$291,400	4	1
Repair and Extend UDG	Sanitation / Solid Waste	$682,090	$136,418	$545,672	3	2
Manhole	Sanitation / Solid Waste	$3,485,584	$697,117	$2,788,467	5	3
Inlist Health Facilities	Sanitation / Solid Waste	$6,250	$1,250	$5,000	5	4
Biomedical Waste Bins	Sanitation / Solid Waste	$80,352	$16,070	$64,282	5	5
Public School Toliets	Sanitation / Solid Waste	$20,000	$4,000	$16,000	1	6
New Gov Policies	Sanitation / Solid Waste	$71,286	$14,257	$57,029	5	1
Decentralize Recycling	Sanitation / Solid Waste	$196,560	$39,312	$157,248	5	2
Landfill/Gas Collection	Sanitation / Solid Waste	$528,768	$105,754	$423,014	3	3
Hazardous Waste Reform	Sanitation / Solid Waste	$32,862	$6,572	$26,290	5	4
Biogas Centers	Sanitation / Solid Waste	$5,000	$1,000	$4,000	1	5
Light Bulb Replacement	Energy	$3,500,000	$700,000	$2,800,000	5	1

Projects	Group	Project Cost (USD)	Local Currency Cost	Funding Needed (w/o Aid)	Number of Years to Construct	Priority
Urban Tree Pit	Water	$163,000	$32,600	$130,400	2	3
Decentralized Toliets	Water	$889,920	$177,984	$711,936	1	2
Rain Water Harvesting	Water	-			5	1
Ventilated Latrines	Sanitation / Solid Waste	$364,250	$72,850	$291,400	4	1
Repair and Extend UDG	Sanitation / Solid Waste	$682,090	$136,418	$545,672	3	2
Manhole	Sanitation / Solid Waste	$3,485,584	$697,117	$2,788,467	5	3
Inlist Health Facilities	Sanitation / Solid Waste	$6,250	$1,250	$5,000	5	4
Biomedical Waste Bins	Sanitation / Solid Waste	$80,352	$16,070	$64,282	5	5
Public School Toliets	Sanitation / Solid Waste	$20,000	$4,000	$16,000	1	6
New Gov Policies	Sanitation / Solid Waste	$71,286	$14,257	$57,029	5	1
Decentralize Recycling	Sanitation / Solid Waste	$196,560	$39,312	$157,248	5	2
Landfill/Gas Collection	Sanitation / Solid Waste	$528,768	$105,754	$423,014	3	3
Hazardous Waste Reform	Sanitation / Solid Waste	$32,862	$6,572	$26,290	5	4
Biogas Centers	Sanitation / Solid Waste	$5,000	$1,000	$4,000	1	5
Light Bulb Replacement	Energy	$3,500,000	$700,000	$2,800,000	5	1

Source: Edelman, 2014.

Estimated Project Cost by Year

The Estimated Project Cost by Year worksheet (Exhibit 11) is also a result of the grant application. Teams were asked to provide their request per year to ensure a steady level of financing over the 5-year period. This worksheet is also important because it was used to evaluate the level of Mysore's 20% debt each year and because it shows how much money needs to be financed each year after the local currency costs are calculated. These figures are those calculated before foreign aid is applied.

Proposed Aid by Country

Once the amount each foreign aid agency gave to India by sector was determined, it was necessary to make assumptions to determine a realistic amount that would be given to Mysore. This was done by first calculating the percentage of India's population living in the state of Karnataka to be 5.3%, and allocating total aid accordingly. After the 5.3% of aid was given to Karnataka, the assumption was made that Bangalore would receive 25% of this total, and Mysore 20% (the same percentages used to calculate the FDI figures). This process was used for each sector that received funds from that particular aid agency. With this information in hand, the financial team was then able to address a sectoral team's preliminary questions regarding how much money they could expect from each country. See Exhibit 12.

Exhibit 11: Estimated Project Costs by Year

Projects	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Urban Tree Pit/ Wetlands	$250	$750	$62,000	$50,000	$50,000	**$163,000**
Decentralized Toliets	$468,379	$421,541	$0	$0	$0	**$889,920**
Rain Water Harvesting	$0	$0	$0	$0	$0	**$0**
Ventilated Latrines	$0	$77,000	$95,750	$95,750	$95,750	**$364,250**
Repair and Extend UDG	$0	$0	$75,000	$303,545	$303,545	**$682,090**
Manhole	$75,000	$852,646	$852,646	$852,646	$852,646	**$3,485,584**
Inlist Health Facilities	$5,250	$250	$250	$250	$250	**$6,250**
Biomedical Waste Bins	$21,600	$29,106	$29,106	$270	$270	**$80,352**
Public School Toliets	$0	$20,000	$0	$0	$0	**$20,000**
New Gov Policies	$27,600	$14,475	$14,475	$14,475	$0	**$71,025**
Decentralize Recycling	$46,440	$46,440	$34,560	$34,560	$34,560	**$196,560**
Landfill/Gas Collection	$0	$0	$176,256	$176,256	$176,256	**$528,768**
Hazardous Waste Reform	$5,000	$27,862	$0	$0	$0	**$32,862**
Biogas Centers	$0	$0	$0	$0	$5,000	**$5,000**
Light Bulb Replacement	$3,500,000	$0	$0	$0	$0	**$3,500,000**
Community Wide Energy Efficiency Rebate Program	$40,382,000	$40,000,000	$40,000,000	$40,000,000	$40,000,000	**$200,382,000**
Waste Heat Recovery	$200,000	$0	$0	$0	$0	**$200,000**

Source: Edelman, 2014.

Exhibit 12: Proposed Aid by Country

Source	Project	Amount	Karnataka	Bangalore	Mysore
Japan (JICA)	Small Industry	$305,640,000	$16,086,316	$6,434,526	$3,217,263
	Water	$427,602,000	$22,505,368	$9,002,147	$4,501,074
	Renewable Energy	$305,640,000	$16,086,316	$6,434,526	$3,217,263
	Bengaluru Metro	$662,220,000	$34,853,684	$13,941,474	$6,970,737
	Sewage	$285,068,000	$15,003,579	$6,001,432	$3,000,716
	Electricity	$111,991	$5,894	$2,358	$1,179
	Forrest	$155,025,337	$8,159,228	$3,263,691	$1,631,846
UK (DFID)					
	Low Carbon Energy	$3,400,000	$178,947	$71,579	$35,789
	Water	$5,730,167	$301,588	$120,635	$60,318
	Sanitation	$5,730,167	$301,588	$120,635	$60,318
	Poverty	$4,995,079	$262,899	$105,160	$52,580
	HIV	$41,246,600	$2,170,874	$868,349	$434,175
	Health	$62,601,034	$3,294,791	$1,317,916	$658,958
France (AFD)					
	Renewable Energy	$205,905,000	$10,837,105	$4,334,842	$2,167,421
	Co Finance w Jica Bengulu	$150,997,000	$7,947,211	$3,178,884	$1,589,442
	Water	$31,572,100	$1,661,689	$664,676	$332,338
ADB					
	Transportation		$921,052,631	$250,000,000	$184,210,526
	Water	$90,000,000	$4,736,842	$1,894,737	$947,368
	Sewage	$90,000,000	$4,736,842	$1,894,737	$947,368
	Housing	$90,000,000	$4,736,842	$1,894,737	$947,368
	Energy	$2,000,000	$105,263	$42,105	$21,053
	Transmission line for soloar	$500,000,000	$26,315,789	$10,526,316	$5,263,158
World Bank					

Source: Edelman, 2014.

Proposed Aid by Project

After total amounts of aid given by each country by sector were ascertained, a table was prepared to show the respective funding found for each sector, in order for teams to see how much they could expect in total for their own projects. It was again assumed that Karnataka represented 5.3% of India's population, and that 20% of this total would be allocated to projects located in Mysore. See Exhibit 13.

Exhibit 13: Proposed Aid by Project

Source	Group	Project	Amount	Karnataka	Bangalore	Mysore
JICA	Water	Water	$427,602,000	$22,505,368	$9,002,147	$4,501,074
UK	Water	Water	$5,730,167	$301,588	$120,635	$60,318
France	Water	Water	$31,572,100	$1,661,689	$664,676	$332,338
ADB	Water	Water	$90,000,000	$4,736,842	$1,894,737	$947,368
World Bank	Water	Water Pumping Improveme	$1,500,000	$78,947	$31,579	$15,789
					TOTAL:	**$5,856,887**
ADB	Transportation	Transportation		$921,052,631	$250,000,000	$184,210,526
Sweeden	Transportation	Sustainable Infrastructure	$907,714	$47,774	$19,110	$9,555
World Bank	Transportation	Sustainable Transport	$17,500,000	$921,053	$368,421	$184,211
World Bank	Transportation	Highway Improvement	$350,000,000	$18,421,053	$7,368,421	$3,684,211
					TOTAL:	**$188,088,502**
JICA	Sanitation / Solid Waste	Sewage	$285,068,000	$15,003,579	$6,001,432	$3,000,716
UK	Sanitation / Solid Waste	Sanitation	$5,730,167	$301,588	$120,635	$60,318
ADB	Sanitation / Solid Waste	Sewage	$90,000,000	$4,736,842	$1,894,737	$947,368
					TOTAL:	**$4,008,402**
JICA	Energy	Renewable Energy	$305,640,000	$16,086,316	$6,434,526	$3,217,263
JICA	Energy	Electricity	$111,991	$5,894	$2,358	$1,179
UK	Energy	Low Carbon Energy	$3,400,000	$178,947	$71,579	$35,789
France	Energy	Renewable Energy	$205,905,000	$10,837,105	$4,334,842	$2,167,421
ADB	Energy	Energy	$2,000,000	$105,263	$42,105	$21,053
USA	Energy	Environment	$2,700,000	$142,105	$56,842	$28,421
Sweeden	Energy	Environment	$1,809,445	$95,234	$38,094	$19,047
IFC	Energy	Waste to Energy	$9,000,000	$473,684	$189,474	$94,737
					TOTAL:	**$5,584,910**
UK	Poverty	Poverty	$4,995,079	$262,899	$105,160	$52,580
UK	Poverty	HIV	$41,246,600	$2,170,874	$868,349	$434,175
UK	Poverty	Health	$62,601,034	$3,294,791	$1,317,916	$658,958
ADB	Poverty	Housing	$90,000,000	$4,736,842	$1,894,737	$947,368
IFC	Poverty	Housing	$24,000,000	$1,263,158	$505,263	$252,632
USA	Poverty	Healthcare	$63,300,000	$3,331,579	$1,332,632	$666,316
USA	Poverty	Educational & Social Servic	$2,900,000	$152,632	$61,053	$30,526
Sweeden	Poverty	Health	$2,177,931	$114,628	$45,851	$22,926
Sweeden	Poverty	Education	$1,038,197	$54,642	$21,857	$10,928
Sweeden	Poverty	Humanitarian Aid	$673,702	$35,458	$14,183	$7,092
					TOTAL:	**$3,083,500**
JICA	Industry	Small Industry	$305,640,000	$16,086,316	$6,434,526	$3,217,263
World Bank	Industry	Agriculture	$40,000,000	$2,105,263	$842,105	$421,053
USA	Industry	Economic Development	$7,800,000	$410,526	$164,211	$82,105
Sweeden	Industry	Market Development	$332,945	$17,523	$7,009	$3,505
Sweeden	Industry	Agriculture / Forestry	$818,734	$43,091	$17,237	$8,618
					TOTAL:	**$3,732,544**

Source: Edelman, 2014.

Amount Needed for Financing of Selected Options

The total amount that must be financed through loans or other funding sources is listed on the Amount Needed for Financing of Selected Options spreadsheet (Exhibit 14), which displays each project with its respective sector and its total cost as stated on the grant. The total amount requested was US$424,698,217 for the 5-year period. The next column shows the amount of aid that was identified through the finance team's research, which is US$84,939,643. The total amount of aid was subtracted from the total amount of the project cost. The local currency portion was then accounted for by adding up the total amounts of local currency provided for each project. The total project cost was then subtracted, with the total amount of aid and the total amount of local currency leaving some teams with a need for additional financing. The total amount needed by all of the sectoral teams is US$162,191,190. The sectors that do not need additional financing are water, transportation, and industry. The team requiring the largest amount of additional financing is energy, which is attempting to implement a costly rebate program. The energy and transportation sectors are the most expensive to finance. However, more aid was found for transportation related projects than for energy. Nevertheless, substantial foreign aid was found for most sectors. The team that had the most aid identified is transportation at US$188,088,502.

Exhibit 14: Amount Needed for Financing Selected Options

Group	Projects	Requested Funds	Available Aid	20% Local Currency	Amount Needed
Water	Urban Tree Pit/ Wetlands	$163,000		$32,600	
Water	Decentralized Toliets	$889,920		$177,984	
Water	Rain Water Harvesting	$0		$0	
	TOTAL	**$1,052,920**	**$5,856,887**	**$210,584**	**$0**
Sanitation/Solid Waste	Ventilated Latrines	$364,250		$72,850	
Sanitation/Solid Waste	Repair and Extend UDG	$682,090		$136,418	
Sanitation/Solid Waste	Manhole	$3,485,584		$697,117	
Sanitation/Solid Waste	Inlist Health Facilities	$6,250		$1,250	
Sanitation/Solid Waste	Biomedical Waste Bins	$80,352		$16,070	
Sanitation/Solid Waste	Public School Toliets	$20,000		$4,000	
Sanitation/Solid Waste	New Gov Policies	$71,286		$14,257	
Sanitation/Solid Waste	Decentralize Recycling	$196,560		$39,312	
Sanitation/Solid Waste	Landfill/Gas Collection	$528,768		$105,754	
Sanitation/Solid Waste	Hazardous Waste Reform	$32,862		$6,572	
Sanitation/Solid Waste	Biogas Centers	$5,000		$1,000	
	TOTAL	**$5,473,002**	**$4,008,402**	**$1,094,600**	**$370,000**
Energy	Light Bulb Replacement	$3,500,000		$700,000	

Source: Edelman, 2014.

Foreign Direct Investment Estimates

The process of financing each sector's projects began with an examination of what countries played the largest role in terms of foreign direct investment (FDI) in India, and the finance

team compiled a list of the top contributors. It then focused on the top 9 countries that invested in India, and calculated the amount they gave each year assuming that Mysore would be able to utilize 10% of those funds. For example, Singapore invested a total of US$21,600,000, which, over a 13 year period, came out to be US$1,661,538 annually. Once the 10% assumption is factored in, Mysore would have US$166,154 with which to work. The finance team found the vast majority of FDI funding to come from the US, which for Mysore is US$14,474,286. The 9 countries taken together are able to contribute a total of US$21,206,643 to Mysore. Another factor here is the propensity of a country to invest in a particular sector. These countries are most likely to invest in: services, construction, telecommunications, computer software and hardware, drugs and pharmaceuticals, chemicals, autos, power, metallurgical industries and hotel/tourism. It is, then, the responsibility of the sectoral teams to conclude whether or not their projects can elicit funds from FDI, and, if so, to estimate how much they could obtain. See Exhibit 15.

Exhibit 15: Estimated Foreign Direct Investment

Country	Top Sectors	Amount Given	Period	Amount Per Year for India	Likely mmount to Mysore
Singapore	Services, construction, telecommunications, computer software & hardware, drugs & pharmaceuticals, chemicals, automotive, power, metallurgical industries, & hotel/tourism	$21,600,000	2000-2013	$1,661,538	$166,154
USA	Services, construction, telecommunications, computer software & hardware, drugs & pharmaceuticals, chemicals, automotive, power, metallurgical industries, & hotel/tourism	$2,026,400,000	2008-2009	$144,742,857	$14,474,286
UK	Services, construction, telecommunications, computer software & hardware, drugs & pharmaceuticals, chemicals, automotive, power, metallurgical industries, & hotel/tourism	$17,600,000	2000-2015	$1,173,333	$117,333
Netherlands	Services, construction, telecommunications, computer software & hardware, drugs & pharmaceuticals, chemicals, automotive, power, metallurgical industries, & hotel/tourism	$9,400,000	2000-2016	$587,500	$58,750
Japan	Services, construction, telecommunications, computer software & hardware, drugs & pharmaceuticals, chemicals, automotive, power, metallurgical industries, & hotel/tourism	$14,700,000	2000-2017	$864,706	$86,471
Germany	Services, construction, telecommunications, computer software & hardware, drugs & pharmaceuticals, chemicals, automotive, power, metallurgical industries, & hotel/tourism	$6,000,000	2000-2018	$333,333	$33,333
France	Services, construction, telecommunications, computer software & hardware, drugs & pharmaceuticals, chemicals, automotive, power, metallurgical industries, & hotel/tourism	$3,600,000	2000-2019	$189,474	$18,947

Source: Edelman, 2014.

Loan Availability
The finance team searched for the loan rates and terms of payment of various banks (deccanherald.com, 2013), and found that the World Bank provides an IBRD (International Bank for Reconstruction and Development) loan of various lengths and interest rates. Loans to be repaid in 12 years or less are offered at 0.28%; those to be repaid in 12 to 15 years are available at 0.38%; and loans to be paid over 15 to 18 years are offered at 0.48%. Each loan required a 0.25% front-end fee as soon as the project goes online in order to obtain the IBRD loan (treasury.worldbank.org, 2013). The Asian Development Bank offers a LIBOR (London Interbank Offered Rate), which is a loan that utilizes average interest rates as determined by leading banks in London. This loan is offered at 0.35% over a span of 19 years. There is no front-end fee required in order to obtain the loan. The finance team made the assumption that the interest rate is 0.35% given that this was the rate offered in the past 6 months (adb.org, 2013). The last loan found is a direct loan offered by the US Export-Import Bank, which is

offered at 2.99% and could exceed a loan term of 11 years, but not 12. The exception would be a loan used to develop a renewable energy project, which could be obtained at 3.82% over a span of 18 years (treasury.gov, 2013).

CONCLUSION

Financing foreign development has been made easier since the onset of globalization. However, the ability to attract a level of financing that will mitigate all of Mysore's inadequacies in industry, energy, poverty, sewage and solid waste, transportation and water is minimal. Mysore has a strategic location 3 hours from Bangalore, which makes it an ideal location for foreign investment. The city, like the rest of India, is growing at an astonishing rate, shifting more people into the middle-class than ever before. Financing development in Mysore is required for it to participate in the continued success of India's economy, and the problems in Mysore will prove to be severe if the city cannot continue to attract a certain level of aid and foreign investment.

FINAL COMMENTS

The intent of the project this paper summarizes was to bring the contemporary thinking and practice of Urban Environmental Management to the solution of real problems in a major city in a developing country. The exercise, then, was to replicate as much as possible the conditions under which a team of expatriate consultants would operate in this context so that they could develop solutions that fit the circumstances they would likely find as professional planners. In this working environment, it was instructive for the students to formulate a 5-year plan of solutions to the environmental problems and issues they faced rather than to be told how to solve them. This expanded their analytical skills and taught them how to utilize the limited knowledge and resources available to come up with implementable solutions for the benefit of the population of Mysore. They learned that such skills are transferable to other projects, and they gained a greater appreciation of the skill set that they are developing as planners. Bringing the reality of development to the classroom and asking students to confront it gives them an appreciation of professional practice that the study of theory alone does not. Thus, this project has attempted not only to expand the education of planning graduate students, but also to provide a meaningful contribution to planning pedagogy.

References

Administrative Staff College of India. (2011). City Sanitation Plan: Mysore, Karnataka: Draft Report. Hyderabad: Administrative Staff College of India.

Appropedia. (2012, November 30). *Bag Gardens*. Retrieved November 13, 2013, from Appropedia: http://www.appropedia.org/Bag_gardens

"Approval for SEZ in IT Sector in Mysore." *The Hindu: Karnataka / Mysore News*. The Hindu, 26 Sept. 2006. Web. 10 Nov. 2013. <http://www.hindu.com/2006/08/26/stories/2006082611590300.htm>.

Aravind, H. (2013, June 21). Mysore-Bangalore Double Line Project will be Put on Track, says minister. *Times of India*. Retrieved October 5, 2013, from http://articles.timesofindia.indiatimes.com/2013-06-21/mysore/40118766_1_mysore-airport-mysore-palace-railway-track

Average Salary for India. (2013, October 24). Retrieved October 5, 2013, from http://www.payscale.com/research/IN/Country=India/Salary

Bennur, S. (2013, September 13). *In Mysore, the Scheme has Made a Difference for Some Families*. Retrieved October 24, 2013, from The Hindu: http://www.thehindu.com/todays-paper/tp-national/tp-karnataka/in-mysore-the-scheme-has-made-a-difference-for-some-families/article5122836.ece

Bennur, S. (2013, September 17). Special Bus Service for Tourists in Mysore. *The Hindu*. Retrieved September 25, 2013, fromhttp://www.thehindu.com/news/national/karnataka/special-bus-service-fortourists-in-mysore/article5135334.ece

Bennur, Shankar (2013). "Only Pollution Grows on this Farm," *The Hindu*. (June 11, 2011) http://www.thehindu.com/todays-paper/tp-features/tp-districtplus/only-pollution-grows-on-this-farm/article2094470.ece. Accessed on October 21, 2013

Capital Bikeshare. (2013). *Capital Bikeshare*. Retrieved November 1, 2013, from http://www.capitalbikeshare.com/home

Charles River Watershed Association, (2008). *Storm Water Tree Pit*, (Accessed 12/7/13) http://www.crwa.org/projects/bmpfactsheets/crwa_treepit.pdf

Cheffy, A. (2013, February 11). *Garden-In-A-Sack*. Retrieved November 18, 2013, from Social Active: COM408 Media, Art, and Social Activism: http://socialactive.wordpress.com/2013/02/11/garden-in-a-sack/

Chiara, D. (2012, November 9). *Keyhole Gardens for Better Nutrition and Livelihoods*. Retrieved November 9, 2013, from TECA - Food and Agriculture Organization of the United Nations: http://teca.fao.org/technology/keyhole-gardens-better-nutrition-and-livelihoods

Directorate of Urban Land Transport, Department of Transportation. (2013). *Public Bicycle Sharing Scheme for Mysore - Station Location*. Retrieved October 3, 2013 from Embarq India website: http://thecityfix.com/files/2013/05/2_7-Mysore_PBS_Station_locations.pdf

Dürr AG. (2013). "ORC - A Technology with Potential". *ORC System - Dürr*. Retrieved October 29, 2013, from http://www.durr.com/product-overview/environmental-and-energy-systems-products/orc-system/.

Edelman, David (ed.). *Managing the Urban Environment – Mysore, India*. Saarbrücken: LAP LAMBERT Academic Publishing, January 2014, ISBN 978-3-659-52279-6.

Government of India Planning Commission. (2013). *Poverty Estimates for 2011-12.* New Delhi: Government of India Press Information Bureau.

Government of India, Ministry of Home Affairs: Office of the Registrar General & Census Commissoner, India. (2013, November 14). *Slum Data*. Retrieved November 15, 2013, from Census of India: http://www.censusindia.gov.in/2011-Documents/slum_data_census_2011.xls

Greenpeace India. (2007, July 30). "Greenpeace Asks Mysore Palace to Become Energy Efficient and Save the Climate: Shows How Significant Savings in Costs, Electricity and Carbon Dioxide Emissions Can be Made." *Greenpeace*. Retrieved October 29, 2013, from http://www.greenpeace.org/india/en/news/greenpeace-asks-mysore-palace/.

Harish, M. (2012). "Solid Waste in Mysore City – A Futuristic Scenario" *Journal of Pharmaceutical and Scientific Innovation.* 1(1), 79-83.

Harish, M. (2013). Urban Transport and Traffic Management - For Sustainable Transport Development in Mysore City. *International Journal of IT, Engineering and Applied Sciences Research*, Vol II (Issue III), 3.

"Heads of IT Firms Keep Their Fingers Crossed Public Eye." *The Hindu : Karnataka / Mysore News*. The Hindu, 26 Nov. 2008. Web. 08 Dec. 2013. <http://www.hindu.com/2008/11/26/stories/2008112657880300.htm>.

http://www.adb.org/sites/default/files/libor-based-loans-overview.pdf

http://www.afd.fr/lang/en/home/pays/asie/geo-asie/inde/afd-en-inde

http://www.afd.fr/webdav/site/afd/shared/PUBLICATIONS/INSTITUTIONNEL/rapports-annuels/AFD_Rapport_2012_EN_Vdef.pdf

http://www.cincinnati-oh.gov/finance/budget/

http://www.deccanherald.com/content/169297/india-inks-6-loan-agreements.html

https://www.gov.uk/government/world/organisations/dfid-india

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/67379/india-2011.pdf

http://www.jica.go.jp/india/english/

http://www.treasury.gov/resource-center/data-chart-center/interest-rates/Pages/TextView.aspx?data=yield

http://treasury.worldbank.org/bdm/pdf/Handouts_Finance/IFL_Major_Terms_Conditions.pdf

http://web.worldbank.org/WBSITE/EXTERNAL/EXTABOUTUS/EXTIBRD/0,,menuPK:3046081~pagePK:64168427~piPK:64168435~theSitePK:3046012,00.html

Kumar, Krishna. "Over 3 Million Tourists Visit Mysore in 2010." *The Hindu*. The Hindu, 6 Jan. 2011. Web. 10 Nov. 2013. <http://www.thehindu.com/todays-paper/tp-national/tp-karnataka/article1037287.ece>.

Kumar, U. (2011, June 26). Fare Hike: KSRTC May Lose Passengers to Train. *Times of India*. Retrieved October 4, 2013, from http://articles.timesofindia.indiatimes.com/2011-06-26/mysore/29705629_1_mysore-bangalore-fare-mysore-and-bangalore

Kumar, U. (2013, May 16). Track-Doubling Work Between Bangalore and Mysore Will Get Over by June 2014. *Times of India*. Retrieved September 6, 2013, from http://articles.timesofindia.indiatimes.com/2012-05-16/mysore/31725349_1_double-line-work-bangalore-and-mysore-mysore-bangalore

Lakshmi, K. (2009, 1 31). Rain Water Harvesting Yields Rich Dividends. *The Hindu*. Retrieved from http://www.hindu.com/pp/2009/01/31/stories/2009013150010100.htm

Levinson, D. (1997). The Full Cost of High Speed Rail: An Engineering Approach. *The Annals of Regional Science*, 1(31), 189-215. Retrieved September 6, 2013, from http://nexus.umn.edu/papers/HighSpeedRail.pdf

Maramkkal, M. B. (2012, 9 14). Enough Drinking Water for Mysore and Bangalore: Experts. *Times of India*. Retrieved from http://articles.timesofindia.indiatimes.com/2012-09-14/mysore/33843493_1_kabini-wathttp://articles.timesofindia.indiatimes.com/2012-09-14/mysore/33843493_1_kabini-water-demand-water-projecter-demand-water-project

Mudde, Raggi. "Special Economic Zones in Karnataka." *Karnataka.com*. Karnataka.com, 6 Mar. 2008. Web. 10 Nov. 2013. <http://www.karnataka.com/watch/sez/>.

Mysore City Corporation. (n.d.). *Home*. Retrieved September 13, 13, from Mysore City Corporation: http://mysorecity.gov.in/

Mysore City Corporation. (n.d.). *Mysore City Statistics*. Retrieved September 13, 2013, from Mysore City Corporation: http://mysorecity.gov.in/sites/mysorecity.gov.in/files/CITY_STAT.pdf

Mysore City Corporation. (n.d.). *Vital Statistics Including Registration of Births and Deaths*. Retrieved November 15, 2013, from Mysore City Corporation: http://mysorecity.gov.in/sites/mysorecity.gov.in/files/PDL16.pdf

Mysore Urban Development Authority. *Revised Master Plan Mysore Nanjangud Local Planning Area 2031*, Vol. II (Issue I), 2.

Mysore Urban Development Authority, (n. d.). *City Planning*. Retrieved September 6, 2013 from website: http://www.mudamysore.gov.in/Planning.htm

Narendra, M., Kousar, H., Puttaiah, E. T., & Thirumala, S. (2013). Assessment of Biomedical Waste of Various Hospitals in Mysore City Karnataka, *India. Int. J. Curr. Microbiol. App. Sci*, 2(3), 1-5.

Raju, N. S., Roopavathi, C., Chandrashekar, M. A., Sharma, M. S., & Basavarajappa, S. H. (2010). Microbiological Quality of Drinking Water in Hotels and Restaurants of Mysore City, Karnataka, India. *Global Journal of Environmental Research*, *4*(3), 199-202.

Saral VAT: Complete VAT Solutions for Karnataka. (n.d.). *Karnataka Budget Highlights [2009 - 2010]*. Retrieved from Saral VAT: Complete VAT Solutions for Karnataka: http://www.saralvat.com/karnataka-buget09-10/budget-highlights.php

Scheme, J. City of Mysore, (2006). *City Development Plan for Mysore*. Mysore, India: Mysore Municipal Government.

Shivaranjini, S. (2013, September 10). Tourist Vehicles to be Banned in Mysore City During Dasara. *Deccan Herald*. Retrieved September 13, 2013, from http://www.deccanherald.com/content/356360/tourist-vehicles-banned-mysore-city.html

Street Vendors Throng Corporation Office. (2012, April 20). *The Hindu*. Retrieved October 10, 2013, from http://www.thehindu.com/news/national/karnataka/street-vendors-throng-corporation-office/article3333016.ece

Suzuki, H., & Cervero, R. (2013).*Transforming Cities with Transit and Land-Use Integration for Sustainable Urban Development.*. Washington: World Bank Publications.

The Indian Census 2011. (n.d.). *Mysore City Census 2011 | Karnataka*. Retrieved November 18, 2013, from Population Census 2011: http://www.census2011.co.in/census/city/452-mysore.html

Zimmermann, N., Wafler, M., Thakur, P. (2010). Decentralised Wastewater Management at Adarsh College Badlapur, Maharashtra, India - Case Study of Sustainable Sanitation Projects. *Sustainable Sanitation Alliance.*

Sexuality: Sexual attitude and behaviour of adolescents in Tertiary Institutions in Nigeria.

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ABSTRACT
This study investigated sexuality in adolescents and determined sexual activities, sexual behaviour and effectiveness of contraceptive usage most effective among university adolescents. The study employed the descriptive design of the survey type. The sample consisted of 400 university students selected from different faculties from two different universities in Ekiti State. Simple random and stratified sampling techniques were used to select the sample. A self-designed instrument was used to collect data from respondents and the data were subjected to descriptive statistics. The instrument was validated by using face and content validities. The reliability of the instrument was established through test-retest procedure. Five research questions were raised to guide the direction of the study. It appears as if sexuality was influenced by culture, religions and peers which shaped the ideas, attitude and behaviour of university students. It appears as if sexual activities were prevalent, practised and thrived among the adolescents. Since sexuality is a natural, innate and a normal phenomenon among adolescents, then there should be a way out. It is recommended that sexuality education should be introduced to adolescents and a sexuality education programme should be put in place to curb the prevalence among them.

Keywords: sexuality, adolescents, culture, religion, peer group, attitude and behaviour.

INTRODUCTION
Human sexuality is diverse and deeply personal, it is about the sexual feelings, desires and attractions one has towards other people not about whom he or she has sex with alone. Sexuality is an important part of who we are as human. Sexuality also defines how we see ourselves and how we physically relate to others and it is beyond the ability to reproduce. Though, there are different types of sexuality, but this paper is concerned with heterosexuality behaviour of adolescents in the universities. Sexuality is one of the fundamental components of health, and it can impact personal well-being. However, when sexuality is well balanced with other life needs, it will contribute positively to personal health and happiness of individuals. Similarly, when sexuality is expressed in destructive ways, it can impact health and well-being. Human sexuality is one of the ways of increasing the healthy life style of students (Strong, DeVault, Sayad & Yanber, 2005). Sexuality is more widely considered to be an important part of people's life whether or not they are married. Sexuality is a natural and normal phenomenon in human beings and lower animals. Being sexual is an essential part of human beings it is a source of great pleasure and profound satisfaction.

Sexuality occurs throughout the whole life span of human being. According to Johnson (2002), sexual feelings and desires continue throughout the life cycle, men and women physical abilities change with age, their sexual responses change as well. At these stages there are different sexual expressions, sexual feelings, sexual behaviours and sexual responses.

Sexuality during infancy and childhood is based on observation and inference. It is obvious that babies desire sexual pleasure from stroking, cuddling, bathing and other tactile stimulation. Freud said, sexual life involves the pursuit of pleasure from the erotogenic zones of the body. According to Colledge (2002), sexual life starts soon after birth, but it lacks a central coordinating focus because of the lack of ego and superego development, and because the genitalia are still immature. The infant finds pleasure in the object of its own body, so it can be said that infantile sexuality is autoerotic. The infants are largely unaware of dawning of their sexual life, as Freud put it they experience 'sexual amnesia'. Borneman (1983), considered the skin (cutaneous phase) as a single erogenous zone from sexual development. Psychosexual maturing, including the ability to love begins to develop in infancy when babies are lovingly touched all over their little bodies. Infants and young children communicate by smiling, gesturing, crying and they learn to interpret movement, facial expressions, body language and tone of voice. Children become aware of sex and sexuality much earlier than many people realised (Strong, DeVault, Sayad & Yorber, 2005). Children generally learn to disguise their interest rather than risk the disapproval of their elders, but they continue as small as they are to play "mummy and daddy" and hug and kiss each other. They may also lie on top of each other, they may play doctor's roles so as to examine each other's genitals. All these attitudes are normal and natural no matter the culture or religious affiliations.

Adolescence is one of the most fascinating and complex transitions in the life of man; a time of accelerated growth and change (Adegoke, 2003). Adolescence is the developmental period of transmission from childhood to early adulthood; it involves biological, cognitive and socio-emotional changes. A key task of adolescence is preparation for adulthood (Larson, Brown & Mortimer, 2003). Adolescence is the social and psychological state that occurs between the beginning of puberty and acceptance into full adulthood. Puberty is the stage of human development when development of secondary characteristic begins and it starts between the ages of twelve years and terminates in the early twenties. . Attainment of puberty brings changes in body development and reflects in the behaviour of adolescents which brings about changes in sexuality, attitude to sex and various kinds of sexual behaviour. Puberty is hypothesised to have a major influence on adolescent sexual behaviour, leading to increase risk of pregnancy and child bearing. Puberty development may affect adolescents sexual behaviour through hormonal effects on the brain and through somatic changes that stimulate a more mature physical changes (Strong, DeVault, Sayad & Yorber, 2005).

Hormonal changes during puberty bring about a dramatic increase in sexual interest which has led to sexual desires and sexual feelings. Naturally, the physical changes at puberty are centred round the development of secondary sex characteristics in boys and girls, while the onset of menstruation in girls and ejaculation in boys. These physical changes are noticed on development of breasts, the growth of pubic and armpit hair and the onset of vaginal mucous secretions. The onset of menstruation and other development have great influence on girls in particular and boys in general. All these changes either in boys or in girls are natural in which little or nothing can be done about it either by the parents or even the adolescents. At puberty the boys begin to ejaculate semen which accompanies the experience of orgasm. Just as girls often do not know what is happening when they begin to menstruate, many boys are unnerved by the first appearance of semen as a result of masturbation or nocturnal emissions during sleep.

Like menstruation for girls, the onset of ejaculation is a sexual milestone for boys (Kinsey, Pomenoy & Martin 1948). During adolescence sexual urge is high and there is high production of sexual hormones, which later decline with age. Also during adolescence formation of a sexual identity is a major development task. Normally, from adolescence to young adulthood, young people begin the process of sexual exploration which is a search for their sexual

identities. Although, this may sound like sexual stereotype, it is during this time that boys aggressively search for sexual experience with girls and girls eagerly desire romantic involvement with boys. Cassell (1984) reported that adolescent boys recognised this socialization and professed to be "involve" with a large number of girls. He also found that more girls than boys reported being in love as the main reason for engaging in sexual intercourse. Research on attitudes and feelings about sexual intercourse has found twice as many boys as girls reported positive feelings about their sexual experience (Gordon & Gilgunm, 1987).

Sexuality in adolescence is a normal and natural phenomenon, it is not peculiar to Nigeria only, it is a situation that crosses over the whole world, either black or white, educated or non-educated. Sexual behaviour is natural, human sexual norms appear natural because we have internalised them from infancy. Nature has endowed adolescents to behave as such. Human development is a product of interaction between the growing organisms and the environment where he or she finds himself or herself.

Though, adolescents appear to be sexually matured in a physical sense, but they are miniature and still learning about their gender and social roles. At this stage the adolescents are still struggling to understand the meaning of their sexual feelings for others and sexual orientation.

It is on record that, as men and women reach older ages, body changes often impact the sexuality and certain changes are noticed due to decline in the level of the hormones estrogen and testosterone. In women there is decline in biological processes, such as less production of estrogen and progesterone while ovulation becomes less regular. Women become less in sexual desire, sexual interest, sexual response, sexual arousal and sexual behaviour. Sexuality tends to be more diffused, less genitally oriented and less insistent (Johnson, 2002). Kellett (1991) was of the opinion that as individuals enters old age the sexual activity among men and women is more cultural than in biological origin. Changes in male sexual responsiveness begin to become apparent when men are at their fifties, a period of change sometimes referred to as the male climacteric. Some men have complete erectile dysfunction and occasional erectile difficulties (Cowley, 1996). As men ages, his frequency of sexual activity declines; achieving erection requires more stimulation and time (Mulligan & Moss, 1991).

Sexuality in adolescence and sexuality in ageing is natural and normal it is being controlled by nature. The attitude and behaviour manifested by adolescents are due to human development, they should not be castigated. Adolescents need effective sexuality education programme information, assertive training avoiding undesirable consequences of sexual behaviour (Kirby, 2000).

RESEARCH RATIONALE

It appears as if most of the Nigerian adolescents are at risk for sexual problems and other problems when they have sexual intercourse when they lack knowledge of sex education and sexuality. These appear to have been accountable for the kinds of risks; unintended unwanted pregnancy, sexually transmitted infections by adolescent pregnancy in girls mothers and babies. The babies born to extremely young adolescent seem to have low birth weights and childhood illnesses. The mothers often drop out of school. In line with the stated problems, the main purpose of this study was to determine adolescent sexual attitude and behaviour among university students. Human sexuality is an important aspect of human behaviour and not peculiar to adolescents alone.

RESEARCH QUESTIONS
These questions are meant to guide the direction of the study. These research questions were raised.

1. Which contraceptive method is effectively used and prevalent among university adolescents?
2. Does cultural background have influence on sexuality of university adolescents?
3. Does religion have influence on sexuality of university adolescents?
4. Do peer groups influence sexuality of university adolescents?
5. What are the sexual attitude and behaviours of university adolescents?

METHODOLOGY

The research design adopted for this study was the descriptive design of the survey type. The survey design is effective in seeking the views and opinions of the respondents (Nworgu, 2006). Questionnaire was used to collect information from the subjects on sexuality of university students.

The population of the study comprised of male and female students from two universities in Ekiti State. Simple and stratified sampling procedures were adopted in selecting the students. The samples selected were 400students that are between 13 and 22years of age. The samples were adolescents in two universities. The instrument constructed by the researcher was used to collect data. The instrument for the study has 43 items which are grouped into 4 sections A, B C and D. Section A deals with bio-data of the respondents, section B has 18items to seek opinion on sexual attitude and sexual behaviour. Section B was structured on a 4-point likert scale of Strongly Agreed, Agreed, Disagreed and Strongly Disagreed. Section C sought the contraceptive methods most effectively used by the university students while section D of the questionnaire is Yes or No response on attitude and behaviour on sexuality. The face and content validities were established by panel of experts in Guidance and Counselling, psychology and experienced researchers in Test and Measurement Department in Ekiti State University.

The researcher and the experts agreed that the instrument contained the appropriate items and certified to be valid. Reliability of the instrument was established through test-retest procedure and the test was carried out on subjects who were part of the final samples. Data from the two administrations of the instrument were correlated using Pearson Moment Correlation Analysis. A reliability coefficient of 0.69 was obtained and considered to be high enough. This was found to be significant at 0.05 level and considered to be reliable. The researcher personally administered the questionnaire. The data generated from the responses were analysed using descriptive statistics that is frequency counts and percentages.

RESULTS

Research Question 1: Which contraceptive method is effectively used among university students?

Table 1   Frequency Counts and Percentages of effectively used Contraceptive Method.

S/N	Items	Effective		Non- Effective		No Response		Ranking
		Freq	%	Freq	%	Freq	%	
1.	Abstinence	306	76.5	68	17	26	6.5	2
2.	Female Sterilization	290	72.5	90	22.5	20	5	3
3.	Hormonal Injection	271	67.7	119	29.8	10	2.5	5
4.	Vaginal ring	72	43.0	221	55.3	07	1.7	8
5.	Diaphragm	276	69.0	120	30.0	04	1.0	4
6.	Female/Male Condom	329	82.3	70	17.5	01	0.2	1
7.	Withdrawal	216	54.0	180	45.0	04	1.0	7
8.	Spermicide	255	63.7	141	35.3	04	1.0	6

Figure 1: Graph Showing Usage Contraceptive Method among University Adolescents

1 – Abstinence
2 – Female Sterilization
3 - Hormonal Injection
4 - Vaginal ring
5 – Diaphragm
6 - Female/Male Condom
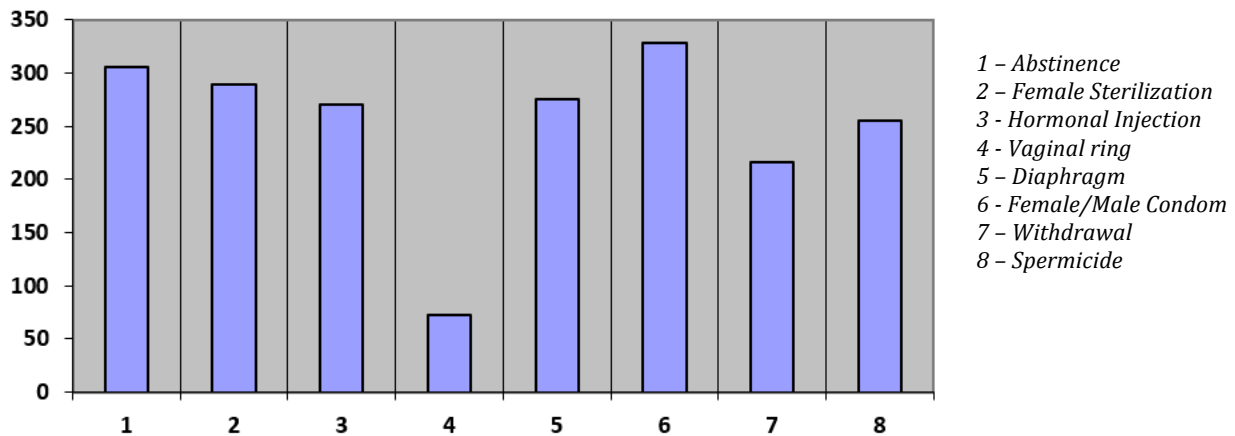7 – Withdrawal
8 – Spermicide

Table 1 and figure 1 showed usage of contraceptive method among university students, 306(76.5%) of the subjects indicated that abstinence was effective while 68(17%) it is not effective. 290(72.5%) was of the opinion that female sterilization was effective in birth control and 90(22.5%) said female sterilization was not effective to control pregnancy. Hormonal injection was supported by the respondents 271(67.7%) to be effective while 119(29.8%) did not support hormonal injection to be effective contraceptive method for birth control. Majority of the respondents 221(55.3%) was of the opinion that vaginal ring was ineffective means to control pregnancy.

Research Question 2: Does cultural background have influence on sexuality of university adolescents.

Table 2: Frequency Counts and Percentages on Cultural background Influence on Sexuality of university students.

S/N	Items	Agree		Disagree		No Response	
		Freq	%	Freq	%	Freq	%
1.	Culturally, sex is basically an expressive and intimate activity.	288	72	88	22	24	6
2.	Powerful force shaping or moulding human sexuality is culture.	194	48.5	180	45	26	6.5
3.	The culture of the environment modifies individual's	276	69	90	22.5	34	8.5

		YES		NO		No Response	
		Freq	%	Freq	%	Freq	%
4.	Do you believe that culture has influenced your behaviour in human sexuality?	264	66	132	33	4	1
5.	Is it true that university environment has influenced your sexuality?	203	50.8	104	26	93	23.2

The data on table 2 indicated that 72% of the respondents claimed that culturally sex is an expressive and intimate activity. 48% agreed that culture is powerful force that shapes and moulds sexuality while 66% of the adolescents indicated that culture has influence on sexual behaviour.

Research Question 3: Does religion have influence on sexuality of university students?

Table 3: University student's Frequency counts Percentages Responses on Influence of Religion on Sexuality.

S/N	Items on Religion influence on sexuality	Agree		Disagree		No Response	
		Freq	%	Freq	%	Freq	%
1.	Religion has great impact in sexuality.	306	76.5	82	20.5	12	3
2.	Religion has little control on sexuality since sexuality is a natural phenomenon.	242	60.5	140	35.0	18	4.5
3.	Religion frowns at contraceptive method of child bearing/control.	202	50.5	166	41.5	32	8
4.	Religion values do not allow watching partner undress.	224	56	160	40	16	4

Table 3 showed the influence of religious background on sexual attitude and behaviour. The response showed that majority 306 (76.5%) and 224 (56%) of the respondents agreed that religion has impact and frowns at sexual activities. 242 (60.5%) of the respondents agreed that religion has little control on sexuality since sexuality is a natural phenomenon.

Research Question 4: Do peer groups have influence on sexuality of university students?

Table 4: Responses of University Students on Influence of Peer Groups on Sexuality.

S/N	Items on Peer group influence on sexuality	YES		NO		No Response	
		Freq.	%	Freq.	%	Freq.	%
1.	Peers have influence on sexual behaviour of adolescents?	321	80.3	73	18.2	6	1.5
2.	Roommates sometimes introduce sexual practices to students?	301	75.3	81	20.2	18	4.5
3.	Do university students engage in risky sex-related behaviour through their peer groups?	217	54.3	169	42.2	14	3.5
4.	Some adolescents are using condoms because of their belief that their peers are also using condoms?	331	82.8	58	14.5	11	2.7
5.	Do adolescents get most of the information on sex through the peer groups?	294	73.5	100	25	6	1.5

Table 4 showed the influence of peer groups on university students' sexuality. The responses made by university students indicated that peer groups have increased their sexual behaviour 321 (80.3%). In the introduction of sexual practices, respondents 301 (75.3%) indicated that roommates have introduced them to practices 294 (73.5%) got sex information from the peers. Some adolescents 82.8% indicated that they got knowledge and use of condoms through their peers.

Research Question 5: What are the sexual attitude and behaviour of university students?

Table 5: Frequency Count and Percentage Responses on Sexual Attitude and Behaviour of University Students

	Items	S.Agree Freq.	%	Agree Freq.	%	Disagree Freq.	%	S.D Freq.	%	N.Resp. Freq.	%
1.	Marital satisfaction and emotional health foster the desire for sexual intimacy in lasting relationship	176	44	180	45	14	3.5	18	4.5	12	3
2.	Higher levels of sexual satisfaction and pleasure seem to be found in marriage than singlehood.	180	45	110	27.5	66	16.5	34	8.5	10	2.5
3.	Physical and emotional satisfaction begins to decline if a person has more than one sex partner.	148	37	120	30	68	17	48	12	16	4
4.	Sexual activities involve a mutual exchange of erotic pleasure.	152	38	154	38.5	22	5.5	34	8.5	38	9.5
5.	Both partners have a right to experience orgasm whether through intercourse or manual stimulation.	160	40	166	41.5	30	7.5	10	2.5	34	8.5
6.	Kissing is natural and normal in our cultural environment	92	23	84	21	126	31.5	70	17.5	28	7
7.	Kissing is an expression of intimacy, love and passion	216	54	118	29.5	24	6	20	5	22	5.5
8.	Lips and mouth are highly sensitive to touch and they are the erotic parts of the bodies.	208	52	138	34.5	32	8	14	3.5	8	2
9.	Kissing is probably the most acceptable of all premarital sexual activities.	164	41	104	26	60	15	44	11	28	7
10	Sexual expression is activity reserved only for the newly married individuals and adults.	190	47.5	100	25	70	17.5	24	6	16	4
11	It is wrong for either men or women to engage in sexual intercourse before marriage.	208	52	84	21	46	11.5	40	10	22	5.5

S/N	Items	YES Freq	%	NO Freq	%	No Response Freq	%
12	Have you initiated sexual intercourse before age of 15?	53	13.3	342	85.5	5	1.2
13.	Have you ever been impregnated before or have you ever impregnated someone before?	64	16	328	82	8	2
14	Do you usually use condom during most recent sexual intercourse?	282	70.5	107	26.8	11	2.7
15.	Do you believe that socio-economic status of your	203	50.8	190	47.5	7	1.7

	parents has influenced your sexual behaviour?					
16.	Most adolescents learn about sex from media?	320	80	70	17.5	10	2.5
17.	Do you consistently have orgasm with your partner?	84	21	300	75	16	4
18.	Do you reach pick of orgasm before your partner?	97	24.3	288	72	15	3.7
19.	Vaginal sexual practice is most preference?	297	74.3	100	25	3	0.7
20.	Masturbation is never an exciting experience?	247	61.8	132	33	21	5.2
21.	Rates of masturbation appear to be affected by sexual intercourse with a partner?	236	59	137	34.3	27	6.7

Table 5 showed sexual attitude and sexual behaviour of university students. Items 6, 7, 8 and 9 indicated the sexual attitude of university students. A very high percentage 54% of the respondents strongly agreed that kissing is an expression of intimacy, love and passion. Out of 400 respondents 346 (86.5%) strongly agreed and agreed that lips and mouth are highly sensitive to touch and that they are the erotic parts of the bodies. A high percentage of respondents (52%) strongly agreed and 21% agreed that sexual intercourse before marriage is wrong. 342 (85.5%) claimed that they had never initiated intercourse before age of 15. Out of 400 respondents, 328 (82%) had never impregnated or being impregnated before. A large number of respondents 282 (70.5%) claimed that they usually used condoms during intercourse recently. Most adolescents 80% learnt about sex from media as compared to 17.5% that got information on sex from other means. 300 (75%) and 288 (72%) respectively responded negatively on consistence orgasm or getting to the high pick of orgasm with their partners. On sexual behaviour on masturbation among university students, 61.8% claimed that masturbation is never an exciting experience while 59% was of the opinion that masturbation affected sexual intercourse with partners. Out of 400, 297 (74.3%) claimed that vaginal sexual practice is most preferred while 25% preferred other practices.

DISCUSSION

Literature revealed that most adolescents (males and females) are sexually active and males have more sense of conquest to sexual activities and have more sexual urge (Tenibiaje, 2011, Strong et al, 2005) then sexuality of adolescents need to be addressed. The result on research question one showed that condom was best ranked with 82.3%. This was also supported by Shayne & Kaplan 1988. On question two, the researcher wanted to find out the influence of culture on sexuality, the findings revealed that cultural background played a vital role on sexuality of adolescents (University adolescents). Culture is a powerful force that shapes and moulds human sexuality. The results of the findings showed that 48.5% of the respondents claimed that culture shaped and moulded the behaviour. This finding supported Strong, Devault, Sayad & Yarder, (2005) who attested that cultural background had influence on sexuality. They affirmed that culture moulds and shapes the sexual interest. All cultures assume that adults have the potential for becoming sexually aroused and for engaging in sexual intercourse, for the purpose of reproduction. But cultures differ considerably in terms of how strong they believe sexual interests are (Davenport, 1987 cited in Strong et al, 2005).

Research question three is does religious affiliation have control on sexual activities of adolescents? The results of these findings have shown that religion has great influence on sexuality. On impact of religion, the results showed that 76.5% of the respondents claimed that religion has great impact on sexuality. Also 60.5% of the respondents confirmed that their religion control their sex activities. The researcher also observed that religious affiliation affected the respondents in total completion of the items in the questionnaire. Some items in the questionnaire were deliberately neglected unattended to (masturbation, sexual intercourse). Some religious background frowns at sex outside marriage. A little more than a generation ago, virginity was the norm until marriage. Conservative religious background such as Catholics and fundamentalists Protestants, continue to view all non-marital sex as

morally wrong (Lord, 1985) This finding confirmed the study of Lord (1985) which established the fact that there is link between religion and sexuality.

Peers have influenced the attitude and behaviour of adolescents. The results of the findings indicated that 73.5% of sex information was received through peers than media or parents or teachers. During adolescence, peer groups provide needed support, and peers seems to be an especially important influence on sex activities and achievement of ethnic minority youth (Steinberg, Dornbursh & Brown, 1992). The result of the finding indicated that peers have influenced the sexual activities of the adolescents. In table 4, 80.3% and 75.3% of the respondents claimed that peers have influence on their sexual behaviour. 217(54.3) of respondents claimed that risky sex related behaviour was learnt through their peers. Peers and roommates have been found to be highly influential in shaping adolescent value, attitude and behaviour (Moore & Davidson, 1999). The result obtained supported the earlier submission of Yarber (1996) in his study of rural adolescents HIV/STD emphasised that more students engage in risky-sex related behaviour because they believe that their peers are doing the same and fewer, may be using condoms because of their belief that their peers are not using it. Yarber (1996) was in line with this study on the influence of peers on sexual activities. Research question five is on sexual attitude and sexual behaviour of adolescents (University students) Adolescents are sexually active and have more sexual urge. The results of the findings showed that 44% strongly agreed and 45% agreed that they are being in love and have marital satisfaction, sexual satisfaction and pleasure with their partners. The findings also revealed 21% low level experience on orgasm, but high level on kissing and sexual intercourse. The result of this finding agreed with Cassel (1984) found that more adolescent girls than boys reported being in love as the main reason for engaging in sexual intercourse.

CONCLUSION AND RECOMMENDATIONS

Sexuality in infancy and childhood is towards pleasure, feeling and love. They are not sexually matured. Adolescents are sexually matured and sexually active, but the production of certain hormones in the body and psychosexual development has necessitated the sexual attitude and sexual behaviour. Sexual physiology changes with age. As a result of age, males may often have less turgid erection less forceful ejaculations and a longer refractory period. These changes have contributed to sexual behaviour in aged males and females. Sexuality is normal and natural, it cannot be curtailed then the problems need to be solved. Sexuality is over the life span, but sexuality in adolescents is higher with increased commitment to the relationship which is accompanied by increased likelihood of sexual intimacy. Sexuality has resulted to early pregnancy, abortion, death, high rate of HIV/AIDS and STD. Adolescents are sexually active and they like to experiment information got from peers and media. Since sexuality is natural phenomenon as a result of physical and psychological development then solution to the adolescent problems must be sought. As counsellors, we need to introduce sexuality education into most of our programmes. Sexuality education programme is a lifelong programme that covers from infancy to late adulthood. The focus of this paper is to reduce risk taking behaviour and increase well-being of adolescents through sexuality education. It is the responsibility of school counsellors, schools and communities to develop programme that focuses on sexuality education. According to Strong et al (2005), the programme should be comprehensive to start from kindergarten to include information on relationship development, interpersonal skills as well as sexual relationship. It is recommended that:

1. Emphasis should be placed on abstinence based programme for adolescents. The programme emphasises the benefits of abstinence, non-coital sexual behaviour and disease prevention. Abstinence from all sexual behaviours outside marriage.

2. Effective sexuality education programme.
3. Decision-making skills.
4. Assertiveness training and avoiding undesirable consequences of sexual behaviour are programmes needed to modify adolescents' behaviour.

It is hoped that if these recommendations and other are maximally implemented, the problems of the adolescents' sexuality would be minimized.

References

Adegoke, A. A (2003). Adolescents in Africa. Revealing the Problems of Teenagers in a contemporary African Society. Ibadan: Hadassaa Publishing.

Borneman, E. (1983). "Progress in Empirical Research on children's sexuality" SIECUS Report 1 – 5.

Cassell. C. (1984). Swept away: Why women fear their own sexuality. New York: Simon & Schuster.

Colledge, R. (2003). Mastering Counselling theory. New York: Palgrave Master Series.

Cowley, G (1996). "Attention Aging Men" Newsweek September 16, 68 – 75.

Gordon, S & Gilgun, J. E (1987). Adolescent Sexuality. In V.B Van Hasselt & M. Hersen (eds). Handbook of adolescent psychology, New York: Pergamon Press.

Johnson, L. A. (2000). "New Risks seen with Genital Herpes". Monterey County Herald March 23 A6.

Johnson, K (2002). "Time Patience Needed to find Right Testosterone level with HRT" Family Practice News 32(11), 31.

Kellet, J. M (1991). "Sexuality of Elderly" Sexuality and Marital Therapy 6(2), 147 – 155.

Kinsey, A. Pameroy, W. & Martin C (1948). Sexual behaviour in the Human Male. Philadelphia: Saunders.

Kirby, D. (2000). "School – Based Interventions to prevent unprotected sex and HIV Among Adolescents". In J.H Peterson & R.J.D: Clemente (Eds), Handbook of HIV prevention. New York: Kluwer Academic/Plenum.

Larson, R.W, Brown, B.B & Mortimer, J (2003). Introduction: Globalization, Societal change and new technologies: what they mean for the future of adolescents. In R. Larson, B Brown & J. Mortimer (Eds). Adolescents preparation for the future: Perils and Promise. Malden, M. A. Blackwell.

Lord, L (1985). "Mortality" U.S. New & World Report December 9: 52 – 59.

Moore, N.B & Davidson, J.K (1999). Parents as First Sexuality information sources. Do They Make a Difference in Daughters Sexual attitudes and Behaviours? Journal of Sex Education and Therapy, 24(3) 155 – 163.

Mulligan, T & Moss, C.R (1991) "Sexuality and Aging in Male Veterans: A cross-sectional study of interest, Ability and Activity "Archives of sexuality Behaviour 20(1) 17 – 25.

Nworgu, B.G (2006). Educational Research: Basic Issues and Methods. Ibadan: Wisdom Publications Ltd.

Steinberg, L. Dornbursh S.M & Brown, B.B (1992). The vicissitudes of autonomy in early adolescence. Child Development, 57 (841 – 851).

Shayne, V & Kaplan, B (1988). AID Education for adolescents Youth and society, 20 180 – 208.

Strong, B. Devault, C, Sayad, B.W & Yarber, W.L (2005). Human Sexuality: Diversity in Contemporary America N.Y: McGraw-Hill.

Tenibiaje, D.J (2011). Voluntary Counselling and Testing As a Panacea to HIV/AIDS Epidemic in Nigeria. Journal of Emerging Trends in Educational Research and Policy Studies (JETRAPS) 2(4) 265 – 270.

Yarber, W.L (1996). "Rural Adolescent HIV/STD Health Risk Behaviour: The accuracy of Estimates of Five Groups" The Health Education Monograph Series, 14, 41 – 46.

Knowledge in Nutrition Among Pregnant Women in Apewosika, A Suburb of Cape Coast: A Nexus in Pregnancy Out

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ABSTRACT

The study sought to find out the knowledge of nutrition among pregnant women in Apewosiksa, a suburb of Cape Coast. A sample of forty (40) women was obtained through the snowball sampling method. The objectives of the study were to find out the level of knowledge in nutrition and also knowledge in nutrition as evidenced by their eating of balanced diets, changes in meals during pregnancy to reflect the demands of pregnancy, ages of pregnancy; eating of a balanced diet and also the sources of their knowledge on nutrition. It came to light that forty percent of them lacked adequate knowledge in nutrition, 17.5% had no knowledge of the consequences of inadequate nutrition on pregnancy. Forty percent were teenagers; 40% of the women ate a balanced diet. Their sources of knowledge on nutrition were mainly through school and ante-natal care (47.5%). Remarkably, none of the respondents obtained her knowledge in nutrition through television. From the study it was realized that generally their level of knowledge in nutrition was inadequate hence the need for nutrition education is paramount.

INTRODUCTION

Several nutrients have been shown to affect pregnancy outcomes, for example vitamin A plays important roles in reactions involved in cell differentiation. (Brown, Kraku, Murtaugh, Sharbaugh, Stang, 2005). However, excessive consumption of it could have teratogenic effects in humans (Worthington-Roberts & Williams, 1996). Status of vitamin C has been shown to affect the outcome of pregnancy. Since calcium metabolism increases during pregnancy, there is a necessity for an increase in its intakes. The amount of the mineral needed doubles to 19 micrograms per a day (Webb, Whitney & De Bruyne, 1999). Calcium is needed during pregnancy to promote adequate mineralization of foetal skeleton, teeth and the health of the mother (Wardlaw & Insel, 1996).

Folate deficiency could lead to neural tube defects, congenital malformations and pregnancy complications and decreases in red blood cells formation during pregnancy (Macphail, 2002). Zinc deficiency has been associated with complications of pregnancy as well as with growth retardation, congenital abnormalities and retarded neuro behavioural and immunological developments in the foetus (Black, 2001).

Severe iodine deficiency during pregnancy causes cretinism in babies. On the other hand, large amounts of iodine inhibit synthesis of thyroid hormones and surprisingly, it could lead to goiter; overzealous supplementation is the most common cause of iodine toxicity (Insel, Turner & Ross, 2003). Knowledge has been shown to impact positively on nutrition especially among socially disadvantaged groups where there is often a dearth of knowledge of the bare essentials of nutrition. (Perez-Escamilla, Hromi-Fiedler, Vega-Lopez, Milan & Segura-Perez, 2008; Barasi, 2003). Studies also point to the fact that almost all maternal deaths occur in

developing countries with more than half of these occurring in Sub-Sahara Africa (Chan, 2010). More than of all maternal deaths occur in only six countries namely, India, Nigeria, Pakistan Afghanistan, Ethiopia, and Democratic Republic of Congo (Hogan, Foreman, Naghave, Ahu, Wang, Makela, Lopez, Lozano, Murray , 2008). Among all maternal deaths, 99% occur in the developing world (Say & Pattinson, 2008). The risk of a woman in a developing country dying as a result of pregnancy or childbirth during their lifetime is about one in six as compared to one in thirty thousand in Northern Europe (Michael & Moodley, 2002).

Pregnancy is a time of immense changes in the body of a woman and also the developing foetus (Whitney & Rolfes, 2002). This often means an increase in the intake of certain nutrients and a need for the woman to decrease or abstain from consumption of certain foods and beverages which could negatively affect the developing foetus. Hence, the need for the expectant mother to be knowledgeable in certain basics of nutrition related to her health and foetus so that she could make informed choices that will impact positively on the pregnancy.

Anemia during pregnancy has been recognized as one of the major health and nutrition problems among pregnant women in the Sub-Saharan Africa (Leslie 1992; Olu Oduntan & Odunlami, 1975). The fact that it is not safe to go into labour with anaemia is well documented. (Kidanto, Magren, Landmark, Mussawe, Nystrom 2009) have also written on the negative effects of anaemia during pregnancy. Factors contributing to anaemia are poor dietary practices during pregnancy due to socio-cultural food taboos, infections, mal-absorption of nutrients and malaria (Leslie, Essaman & Ciemans, 1997). The importance of preventing anaemia during pregnancy cannot be over emphasized since it exacerbates a lot of the problems of delivery. Labour involves the expenditure of energy and its attendant use of oxygen; hence the importance of red blood cells cannot be overstated. Severe iron-deficiency anaemia may lead to pre-term delivery, maternal complication or death during delivery and increased risk to the foetus during the first weeks of gestation. Food sources of iron include vegetables such as spinach, broccoli, whole bread, soybeans, inter alia. Anti-nutritional factors include tea, coffee and other caffeinated beverages and coffee. From the above it could be seen that knowledge in nutrition is a very important nexus in good pregnancy outcomes.

 Chan (2010) has stated that most maternal deaths are avoidable as the health care solutions to prevent or mange them are well known. However, maternal deaths is relatively high in Sub-Saharan Africa, therefore, the need to know the reason for such paucity of knowledge in certain communities notably, Apewosika.

The objectives of the study were to find out the knowledge in foods as regards nutrition of pregnant women in Apewosika. It was specifically meant to deduce the level of knowledge as evidenced by their application of knowledge in their ages of pregnancy, eating of balanced diets, changes in meals that reflect the unique demands of pregnancy and how this could be used to help in nutrition education. The purpose of the study was to find out the levels of knowledge in nutrition in the community with a view to contributing towards an amelioration of the problems of maternal mortality and morbidity.

Research questions:
The following research questions guided the study:

1. What is the level of knowledge in nutrition among the pregnant women regarding the food groups?
2. How is the level of knowledge in nutrition reflected in the ages of pregnant women?
3. How is the knowledge in nutrition reflected in their eating of balanced diets?
4. What are the sources of the pregnant women knowledge in nutrition?

METHODOLOGY

The population for the study was pregnant women in Apewosika village which is completely surrounded by the University of Cape Coast campus. In all, forty women were sampled through the snow-ball sampling technique (Goodman, 1961). The research instrument used was questionnaire. The illiterates who could not complete the questionnaire were aided by interpreting it to their understanding.

RESULTS AND DISCUSION

Table 1: Knowledge of the Important Nutrients Obtained from the Six Food Groups.

Answers	Percentage (%)
Vitamins, minerals, fats and oils, proteins and carbohydrates	60
	5
Formation of blood, energy	5
Starch, formation of blood, fats and oils	30
No response	

Source: Field data, 2011

From Table 1, it could be realized that a large percentage (60%) had some idea about nutrients obtained from food. It is to be noted that 40% had no knowledge or incomplete knowledge about nutrients obtained from food.

Table 2: Knowledge about the Consequences of Lack of Nutrients in Diet

Answers	Percentage (%)
No	10.0
Yes	72.5
No answer	7
Total	100

Source: Field data 2011

When the pregnant women were asked if they knew the effects lack of nutrients in their diet had on their health and the development of the fetuses, Table 1 shows that though the majority (72.5%) of them answered Yes, it is noteworthy that those who did not know and those who did not give any answer constituted 17.5%. The most common nutrient deficiency among pregnant women is iron. A woman tends to have low stores to begin with but during pregnancy, her iron needs surges. In addition to the iron needed to build her red blood cells, the foetus needs foliate as well (Kolander, Ballard & Chandler, 1999). The implication of foliate deficiency for the developing foetus could be devastating as it could result in neural tube defect (Truswell & Milne, 2002).

Table 3: How often they Ate a Balanced Diet

Responses	Frequency N = 40	Percentage (%)
Very often	16	40.0
Often	11	27.5
Hardly	9	22.5
No response	4	10.0

Source: Field data, 2011

A balanced diet is one which contains different types of foods in such quantities and proportion that the macronutrient and micronutrient needs are adequately met (Srilakshmi, 2009). Hence, a pregnant woman's eating of a balanced meal is crucial. Thus, for the 23% who hardly ate a balanced meal and some of the ten percent (10%) who gave no response to such a crucial questions, probably because they did not have knowledge about a balanced diet; it could have negative effects on their health and pregnancy outcomes (Bayol, Simbi, Bertland, Stickland, 2009). From this, it can be inferred that such pregnant women (the 23%) are likely to suffer from the diet related diseases which account for a large percentage of maternal mortality in Ghana as indicated by aboagye and Akosa (1996).

Table 4: Meals during pregnancy being different from the normal meals

Answers	Frequency N = 40	Percentage (%)
No	14	35
Yes	22	55
No answer	4	10

Source: Field data, 2011

Table 4 shows that 14(35%) of the women did not change their meals towards a more balanced diet during pregnancy. This is a striking observation since a pregnant woman's diet should of necessity change to make it more nutrients- densed so that she could satisfy the full complement of nutrients. Also, there are some nutrients which are crucial for successful pregnancy outcomes which must be met. For example protein needs are altered (Worthington-Robert & Williams, 1996; Williams, 1981). Vitamin A deficiency could produce malformation of foetal lungs, urinary tract and heart ailments. Folate is crucial for a positive pregnancy outcome since it is essential in the synthesis of DNA. Hence both foetal growth and maternal health depend on an ample supply of folates. Lack of adequate folate could lead to megaloblasticanaemia. As regards vitamin C, particular care must be exercised to ensure that the extra amount of it needed during pregnancy is met. However, large doses of supplementary vitamin C may adversely influence foetal metabolism which could lead to scurvy during the neonatal period.

Calcium is needed during pregnancy to promote adequate mineralization of the foetal skeleton and teeth and the health of the expectant mother. The third trimester is the time when it is most needed since foetal skeletal bones grow most rapidly during this period. However, extra calcium intake, as it is recommended, should start immediately after conception. Dairy products are good sources of calcium hence, especially skimmed milk, and green leafy vegetables are recommended (Mader, 2000).

Table 5: Age of Respondents

Age	Percentage (%)
16 – 20	40
21 – 25	15
26 – 30	20
31 – 35	20
36 – 40	5

Source: Field data, 2011

The majority of respondents (40%) as shown in Table 5 were in the age bracket 16-20 who were adolescents or teenagers. It has been noted that for adolescent pregnancies that are carried to term, nutritional considerations are paramount; since these needs rise considerably

during pregnancy, particularly in pregnant adolescents (Dwyer, 1996). Adequate energy, calcium and iron are of particular concern because intakes before pregnancy may have been low and needs increase as pregnancy proceeds. Child bearing in very young adolescent who may still be growing themselves and who find themselves in poor socio-economic environments and circumstances is fraught with nutritional risks. Hence, such pregnant mothers' knowledge in nutrition to a large extent should be reflected in their age of pregnancy. Young women who are poor or otherwise disadvantaged and conceive out of wedlock appear to be at particular risk of poor pregnancy outcomes (Dwyer, 1996). One factor that may have contributed to the high percentage of teenage pregnancy is the fact that Apewosika is virtually surrounded by the University of Cape Coast which has a large volume of young virile bachelors.

The percentage of pregnancies above the age 35 was expectedly low (5%). Though such mothers may be emotionally and psychologically prepared for pregnancy, there are contending factors that militate against pregnancy within such an age bracket. There is also a decline in both the quality and viability of eggs produced after age thirty five; and statistically the chances of having a baby with birth defects rises after this age; Down syndrome is the most commonly encountered genetically abnormal condition. Those who were pregnant within the age bracket 21 – 30 constituted thirty five percent and twenty percent were in the age bracket 31 – 35. Also, the physical ability of these women vis-à-vis delivery is lower than what pertains in their twenties. However, such women tend to be more conscientious about following medical advice and more psychologically mature than are some younger women (Donatelle & Davis, 2000).

The nutrition requirements of adolescents are influenced primarily by the normal events of puberty and simultaneous spurts of growth. Puberty is an intensely anabolic period which results in changes in the composition of the body. It is a period of development of physiological, psychosocial and cognitive levels all of which impact on the nutritional needs of the adolescents. The teenager is a rapidly changing biological organism with very individual growth patterns, biological make up and psychosocial development. It is the only time in extra-uterine life when growth velocity increases. The growth spurt contributes to 15% of adult height and 50% of the adult weight. Hence the role of nutrition at this stage of a human's development cannot be over emphasized (Gong & Heald, 1988).However, studies show that adolescents are more likely to skip meals and engage in dieting which could lead to nutrient intakes that are inadequate to support pregnancy (Brown et al., 2005).

The onset of pubescence may with its concomitant changes give them a deceptive semblance of adulthood. Some adolescents are driven to experiment with drugs and sex, because of their relative inexperience, naivety and even gullibility. This has often resulted in grave social disadvantages and consequences. Studies show that in the United States thirty percent (30%) of adult births are non-marital, in contrast approximately seventy two percent (72%) of pregnant teens were unmarried in 1993. Marriage between adolescents is usually unsafe: approximately 70% end in early divorce. Adolescent mothers have been observed to be less sensitive, less accepting and less cooperative with their children than older adults. They are more likely to have low paying jobs, lower status jobs, and experiment with drugs and be impoverished adults (Slap & Jablow, 1994). Post neonatal morbidity and mortality are particularly high in infants born to mothers younger than 18 years and pregnant teenagers experience considerable obstetric risk and complications.

Furthermore, their infants are more likely to suffer from Sudden Infant Syndrome. Their pregnancies could be complicated by such factors as, decreased family support, family

member abuse, Sexually Transmitted Diseases (STDs), and urinary tract infections (Greydanus, 1997). Teenage pregnancy is still an issue in Ghana. At the BECE examination conducted in 2009, some pregnant teenagers were candidates. It was said that such teenagers fail to undergo good nutrition (Ghana Dot.com, May 7 2009).

MAJOR OCCUPATION OF RESPONDENTS

One's ability to afford nutritious meals is determined to a large extent by one's occupation since it determines ones purchasing power. Expectedly, 45% of the respondents were fishmongers. This is because Apewosika is a community close to the sea. Twenty three percent were petty traders, five percent were hair dressers, 10% were gari sellers and 18% of them were unemployed. All these are small businesses and are, more often than not, likely to result in small earnings. These are recipes for poverty, especially, during pregnancies when the pregnant woman's strength and mobility are diminished and they are even more inclined to be ill. It is also noteworthy that about 18% of the respondents were unemployed. In such communities, it is the norm rather than the exception that both parents, even when they are married, work to supplement the income. It, therefore, becomes more imperative for a single woman expecting a child to work because of the meager incomes. Hence, these results will certainly have a knock-on effect on the nutrition status of the expectant mothers, foetuses and pregnancy outcomes. They may not necessarily lead to deaths but could have implications for morbidity, physical and mental development of the child. Child bearing imposes more needs on the expectant mother and the expectant father; hence it could perpetuate vicious cycles of poverty.

Table 6: Sources of Information on Knowledge in Nutrition

Responses	Percentage (%)
School	27.5
Ante-natal	20.0
Other	5.0
Multiple responses	37.5

Source: Field data, 2011

A list of options was given as regards the issue of sources of information on knowledge in nutrition which were; school, ante-natal, close relatives, friends and television as sources from which respondents obtained their knowledge in nutrition. None of the respondents chose close relatives, friends and television as sources from which they obtained knowledge in nutrition. Table 6 shows 28% of the respondents chose school as where they obtained information hence the need to intensify efforts at disseminating information at schools. Since teenage pregnancy is on the ascendency and there has been reported incidences in the news of pregnant candidates taking the B.E.C.E examinations and some even delivering their babies while writing certain papers, there is a need to equip them at that level with the requisite information.

CONCLUSION AND RECOMMENDATION

It can be concluded from the study that knowledge in nutrition of the pregnant women is generally inadequate to support the demands of pregnancy. It is therefore recommended that nutrition education should be intensified in the community. Again, since antenatal was an important source of their information, nurses and doctors should also be aware of the fact that the information they give is a very important source from which the respondents obtain information. Hence, the need for nurses to intensify and simplify the information they disseminate so that most of the patients of such levels of education could understand and put the information to good use.

References

Aboagye, A.B. & Akosa, A.B. (1996). An autopsy study of maternal death. *Ghana Medical Journal, 34*, 15-35.

Barasi, E.M. (2003). *Human nutrition a health perspective.* London: Arnold.

Bayol, S. A, Simbi, B. H., Bertland, J.A. Stickland, G. (2008). Offspring from mothers fed as "junk food" diet in pregnancy and lactation exhibit exacerbated adiposity that is more pronounced in females. *The Journal of Physiology. 13,* 3219-3230.

Black, R. E. (2001). Micronutrients in pregnancy *British Journal of Nutrition* supplementary 193 –197.

Brown, T. E., Isaac, J. S., Krakue, U. B., Murtaugh, M. A. Sharbaugh, C., Stang, J., (2005). *Nutrition throughout the life cycle*. Wooldridge, N.H., Belmont, C.A.,: Thomson Wadsworth.

Chan, M. (2010). *Maternal death worldwide drop by third*. Retrieved from www.who.nt/media centre (news release/2012 maternal mortality 01000915cn/index.html

Donatelle, R. & Davis, L. G. (2000). *Access to health*, Boston: Allyn and Bacon.

Dwyer, J. T. (1996) Adolescence. In Ekhard, E.Z. & L.J. Jnr. Filer, (Eds). *Present Knowledge in nutrition*. (Pp 404 – 411). Washington, D.C.: ILS1 press. Gong, E.J. & Heald, E.P. Diet Nutrition and Adolescence in Shills, M.E. & Young, V.R.

(Eds) *Modern nutrition in health and disease* (7th Eds) pp. 969 – 981 Philadelphia: Lea & Febiger.

Goodman, L. A. (1961). Snow ball sampling. *Annals of mathematics statistics. 32*, 1, 148 – 170.

Greydanus, D. E. (1997) Adolescence pregnancy and Abortion in Hoftman, A.D. and Greydanus, D.E. (Eds) *Adolescence medicine*, pp. 589 – 604

Hogan, M. C., Foreman, K. J., Naghave, M., Ahu, S. Y., Wang, M., Makela, S.M., Lopez, A.D. Lozano, R., Murray, C.J.L. (2008). Maternal, mortality for 181 countries 1980 – 2008; a systematic analysis of progress towards millennium development goals. *The lancet 375*, 9726, 1609 – 1638. Insel, P., Turner, R. E. & Ross, D. (2003). *Discovering nutrition*. Boston: Jones and Bartlett.

Kafatos, A.G., Vlachonkolis, I.G. & Codrington, C.A. (1989) Nutrition during pregnancy: the effects of an educational intervention programme in Greece. *The American Journal of Clinical Nutrition. 50,* 5970– 5979.

Kidanto, H. L., Magren, I., Landmark, G., Mussawe, S., Nystron, L. (2009). Advanced maternal ages as a risk factor caesarean delivery. *South African Medical Journal 99,* 2*.*

King, F. S. & Burgess, A. (1993). *Nutrition for developing countries* (2nd ed), Oxford University Press.

Kolander, C. A., Ballard, D. J., & Chandler, C.K. (1999). *Health issues for today and the future*. Boston: WCB McGraw-Hill.

Leslie, J. (1992). Women's lives and women's health using social science research to promote better health for women. *Journal of Women's Health. 1* (4), 307 – 318,

Retired March 15, 2011 from http://unu.edu.unu press (food U 181 e/ch 2 html.

Leslie, Essaman, S. B. & Ciemans, E. (1997) Female nutritional status across the life span in Sub-Saharan African: causes and consequences. *Food nutrition. Bull. 18*, 44 – 55 retrieved March 15, 2011, from http//unu.edu.unu press/food/visie/ch.2htm.

Lindsay, H.A. (2000) Anaemia and iron deficiency: effects on pregnancy outcome. *The American Journal of Clinical Nutrition. 77*(5) 1284. Retrieved from www.ajch.org 8/8/12.

Macphail, P. (2002) Iron. In Mann, J. & Truswell, S. (Eds) *Essential of human nutrition* (2nd ed.) 145– 159: New York: Oxford University Press.

Mantel, G. D. & Moodley, J. (2002). Can a develop country's maternal mortality review be used as a gold standard*. Journal of Obstetrics, Gynaecology and reproductive Biology 100 (*2) 189 – 195.

Mader, S. S. (2002). *Human biology*. Boston: McGraw-Hill Company.

Olu Oduntan, S. & Odunlami, U.B. (1975) Maternal mortality in Western Nigeria. *Tropical and geographical medicine 3,* 313 – 316. Retrieved 26/7/12 from www.ncbinlm nih.gov/pubmed/1081290.

Perez-Escamilla Hroan – Fiedldler and Vega-Lopez (2008) Peer education Counselling in nutrition and health outcomes among Latinos. *The Journal of Nutrition Education and Behaviour. 40* (4) 208 -255.

Say, L. & Pattinson, R.C. (2008). *International encyclopaedia of public health*. New York: Academic Press.

Slap, G.B. & Jablow, N.M. (1944). *Teenage healthcare*. New York: Pocket books.

Srilaskmi, B. (2009). *Human Nutrition for B.Sc. Nursing students*. New Delhi: New age publishers.

Truswell, A. S. & Milne, R. (2002). The B vitamins in Mann, J. & Truswell, S. (Eds) *Essential of human nutrition* (2nd ed). New York: Oxford University Press.

Williams, S. R. (1981). *Nutrition and diet therapy* (4th ed.) New York: CV Mosby Company.

Worthington-Roberts & Williams, S.R. (1996) *Nutrition throughout the life cycle* (3rd ed) New York: McGraw-Hill.

Whitney, E.N. & Rolfes, S.R. (2002) *Understandings nutrition*. (9th ed) Belmont. C. A.: Wadworth Thomson.

Implementing the Islamic Paradigm for Religious Tolerance for Peaceful Co-existence in Nigeria: The Example of *Jamaᶜat Nasrul* Islam of Nigeria (JNI)

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ABSTRACT
Tolerance and forgiveness are qualities which ensure success and prosperity in this world as well as in the hereafter. It should be remembered that forgiveness carries value when one is in a position to take revenge and it behaves only that person to forgive who possesses the necessary power. Islam teaches tolerance in whatever we do and if we encounter a problem or difficulty in life, we should not give up but continue struggling with prayer to God for the success of our objectives. Methodology relied solely on biographic appraisal of such studies that are related to this study. The paper looks at Jamaᶜatul Nasril Islam in this regard by way of examining how the organisation exhibited tolerance and created avenue for peaceful co-existence among Muslims and Non-Muslims alike in all areas of its jurisdiction. The paper concludes by making few recommendations to Muslim and Non-Muslim Organisations in Nigeria to emulate the Jamaᶜatul Nasril Islam style of operation for peaceful and harmonious co-existence in Nigeria.

INTRODUCTION
By the end of 1960, the Honourable Premier of Northern Nigeria, Alhaji Sir Ahmadu Bello, identified some Muslims who had interest in Islamic education and encouraged them to make the best use of their position to assist the cause of education in their respective domain. After a protracted debate in the Northern Region House of Assembly on how to serve the Muslims in particular and Islam in general. Sardauna seized the opportunity and called for a meeting where he invited all members who were Northerners and others who were Muslims in other regions.

Members of legislative, eminent Islamic scholars and Northern Emirs were invited where he delivered a speech at that occasion, the organisation called Jamaᶜat Nasril Islam was floated the late premier mentioned the following as the tasks before the new organisation (i) To propagate the religion of Islam and improve Muslims welfare (ii) To give Islam a uniform voice internally and externally and also (iii) To coordinate Islamic activities within Nigeria (iv) To educate people as well as responsible for the spread of Islam, and (v) uniting Islamic scholars together. The meeting was held on 5th January 1961. In his speech also, he advised those who attended the meeting that they should open a branch of the organisation at their various areas.

A committee was set up to advice the government as how to boost Islamic education in Northern Region. When the committee turned in its report with some far reaching recommendations, it became imperative to set up an organisation that will ensure their efficient.

AN APPRAISAL OF THE VISIONS AND MISSIONS OF JAMAᶜAT NASRIL ISLAM

Vision is an idea or a picture in ones imagination. Jamaᶜat Nasril Islam envisions a total war against ignorance in Islam and encouragement of the distribution of Islamic literature in Nigeria local languages, building mosques, and Islamic centre of learning, promoting unity among the Muslims, regardless of brotherhood affiliation and reformed brotherhood organisation. Similarly, Jamaᶜat Nasril Islam envisions to act as a voice externally on behalf of all Nigerian Muslims, as well to coordinate Islamic activities within Nigeria and to educate people, spread the religion of Islam, teach average Muslim on how to carry out his religious obligations as well consolidate the development of Northern states under the atmosphere of peace and stability.

The missions of Jamaᶜat Nasril Islam were drawn to meet the objectives of the organisation in other words to achieve its visions. These include: To propagate the principles of Islam thereby striving to win more adherents to the faith. To remove or eradicate immorality in the society and maintain Islamic morality among the Muslims and to promote friendly relationship among Nigerian Muslims in particular and world Muslim in general. To promote friendly relationship not only at National level but also at International level. To put into practice the ideals of Islam as prescribed in glorious Quran and practiced by the holy prophet of Islam, in other words to teach the Muslims normal way in which the religion of Islam is practiced as taught by Quran and explained in the practice of the prophet Muhammad (S.A.W)

It is the intention of Jamaᶜat Nasril Islam to achieve the set goals through the following instrumentality.

(i)   *Establishing and running of Hospitals, Dispensaries and Clinics both in rural and urban areas for the care of the sick.*
(ii)   *Establishing and running of schools and libraries at all levels of education where Islamic ethic and culture will be the foundation of all subjects to be taught.*
(iii)   *Co-ordination of the collection and distribution of Zakat from the Muslims.*
(iv)   *Purchases of Daᶜwah vehicles.*

RELIGIOUS TOLERANCE IN ISLAM

To develop an appreciation and understanding of tolerance, let firstly understand its literal meaning, Web steps Dictionary defines tolerance as:
  (i)   the capacity to endure pain or hardship.
  (ii)   allowable deviation from a standard
  (iii)   a permissive or liberal attitude toward beliefs or practices differing from or conflicting with one's owns.

Literally the word "tolerance" means "to bear". As a concept it means "respect, acceptance and appreciation of the rich diversity of the world's cultures, forms of expression and ways of being human". In Arabic it is called "Jasamuh", there are also other words that give similar meanings, such as "Hilm" (forbearance) or 'Afu" (pardon, forgiveness) or "Safh" (overlooking, disregarding).

Tolerance is a basic principle of Islam. It is a religious moral duty. It does not mean "concession, condescension or indulgence". It does not mean lack of principles or lack of seriousness about one's principles. People are tolerant of things that they do not care about. But this is not the case in Islam. Tolerance according to Islam does not mean that we believe that all religions are the same. It does not mean that we do not convey the message of Islam to others and do not wish them to become Muslims.

Islam teaches tolerance on all levels; individual, groups and states. It should be a political and legal requirement. Tolerance is the mechanism that upholds human rights, pluralism (including cultural pluralism) and the rule of law. The Qur'an says very clearly:

> To every people have we appointed rites and ceremonies which they must follow, let them not then dispute with you on the matter, but do invite (them) to your Lord: for you are assuredly on the Right way. If they do wrangle with you, say, God knows best what it is you are doing. God will judge between you on the Day of Judgment concerning the matters (Q. 22:76-79).

Prophet Muhammad (SAW) faced much difficulty and opposition in his own birth-place, the city of Mecca. He was eventually forced to migrate to Madina. But in spite of all the opposition and even physical torture that his followers suffered in Mecca, Prophet Muhammad (SAW) always approached the unbelievers to Mecca with tolerance At one stage of his mission, the prophet read to them a short chapter from the revelation:

> O you do not believe? I worship what you worship, and you are not worshipping what I worship; not am I worshipping what you worship, neither-art you worshipping what I worship. Therefore, to you your religion; and to me my religion! (Chap. 109).

Islam confirms that tolerances, a high human quality, enhances good relations and facilitates the means for mutual understanding and respect among people. the major sources of Islam, the Qur'an and sunnah, recommend and promote tolerance, as do the historic accounts of the caliphs who followed the prophet's (SAW) example. These sources do not only recommend the practice of tolerance among the Muslims toward each other, but also with the non-Muslims within the Islamic society.

The Qur'anic view of tolerance toward the people of the Book. As Qur'an is the primary source of guidance for the Muslims. It sets the foundation for their creed, legislation, ethics, moral behaviour and every matter of daily life. There are many verses that set the ground work for these relations that recommend kindness and excellent behavioiur.

Allah states that one of His objectives in creating humanity was that they should interact in the best of terms. Allah says:

> O mankind! We created you from a single (pair) of a male and female, and made you into nations and tribes; that ye may know each other (not that ye may despise each other). Verily the most honoured of you in the sight of God is (he who is) the most righteous of you. And God has full knowledge and is well acquainted (with all things)(Q. 49:13)

Allah commands Muslims to be affectionate, kind and just in their practice of tolerance with Non-Muslims.
Allah says:

> God forbids you not, with regard to those who fight you not for your faith nor drive you out of your homes, from dealing kindly and justly with them. For God loveth those who are just (Q. 60:8).

The foundation of this tolerant view of other faiths is a set of beliefs and truths that Islam inculcates in the hearts and mind of Muslims. The most essential of these are: humanity's

common origin; the dignity of human beings; religious differences existing by Allah's will; Muslims not being charged with judging people of other faiths. Also, in addition to prohibiting forced conversion, Islam has encouraged establishing justice among people, which is required for stable and peaceful coexistence.

PROMOTION OF TOLERANCE AND PEACEFUL CO-EXISTENCE BY JNI

From the inception of this organisation in 1961 the Jamaᶜat Nasril Islam had attracted many non-Muslims into the Islamic faith. John Paden confirmed the conversion of many pagans into Islam by the founder of Jamaᶜat Nasril Islam in Zaria and Niger provinces despite the fact that he did not attempt to go into any of the Christian areas of the middle belt.

There are many groups of Islamic organisations which preach peaceful co-existence most especially in Nigeria, but Jamaᶜat Nasril Islam (JNI) is one of them, especially against the back drop of the past and recent developments in Nigeria. For example, when the founder Sir Ahmadu Bello of the organisation was called JNI did not make inflammatory remarks. So also, it refrained from compound problem each time there was religious crisis in Nigeria. In 1966, the assassination of Sir Ahmadu Bello generated serious tension and northern were charged and ready for violence and were only writing for an individual or organisation to call people out for vengeance which JNI could have done but did not.

For example, in a press released in Punch Newspaper by Jamaᶜat Nasril Islam, Muslims in the country were urged to be tolerant and patient even in the face of unnecessary provocation on the interest of peaceful co-existence. The former Secretary General of Jamaᶜat Nasril Islam, Justice AbdulKadri orire (Rtd.) stated this when he was reacting to the violent clashes in the year 2001 in Jos, Plateau State capital. He said that Jamaᶜat Nasril Islam condemned in strongest term the killing in Jos as it also condemned unfortunate situation where worshippers were followed to their places of worship and brutally killed, maimed and butchered while worshipping. He advised Muslims in the country to give peace a chance and live in harmony. He added that Muslims, wherever they may be, should not reach to this situation negatively.

Similarly, Jamaᶜat Nasril Islam, organized a conference on 27th of May 2006 for South and South-East ion how Muslims cemeteries from the authorities absence of proper understanding of the religion of Islam among the indigenes and lack of proper co-ordinance of Islamic activities in those areas bring about disunity among the Muslims.
In view of the above observations the conference resolved as follows:

   i)   *That the conference appeals to the concerned state government as a matter of fundamental right to accord Muslims in their area, the right to possess lad, employment and appointment.*

   ii)   *The conference also condemned the bombing of Islamic centre Anofia Atikpo in Ebonyi State and calls on Ebonyi State and calls on Ebonyi State Government and the Federal Government to acts decisively and bring before the law those that had hand in the bombing and the centre be reactivated.*

   iii)   *The Federal Government, State Government and Islamic organisation are to ensure that a balance educational system of both Islamic and western be made available and accessible to the Muslims populace of that area.*

Furthermore, Jamaᶜat Nasril Islam also preached tolerance and peaceful co-existence between members of Tijaniyyah and Qadriyyah orders whose members used to antagonize each other. An example of such conflicts was the one that happened at Toronke of Sokoto Emirate in 1964 where many people were killed.

The reason was on the standing posture during prayers either Sadlu or Qabdu. Jamaᶜat Nasril Islam resolved the issue, whoever wants to lead prayers should maintain the Sadhu postures and Qabdu to be performed at home by individual who wished to do so.

Today, through the role of the JNI members of Tijaniyyah and Qadriyyah live peacefully in any parts of the country. People are free where to practices sadlu or Qabdu.

Apart from preaching tolerance and peaceful co-existence by Jamaᶜat Nasril Islam, also embarks on conflict resolution among the Muslims in Nigeria. All most all the branches in different states have reconciliatory committee that is in charge of listening and reconciling between Muslims with a view to minimizing the rate at which Muslims washes their dirty liners in public through the court litigation.

Jamaᶜat Nasril Islam is in line with the directive of Allah in the glorious Qur'an:

> *The believers are nothing else than brothers (in Islamic religion). So make reconciliation between your brothers and fear Allah, that you may receive mercy (Q. 49:10). There is no good in most of their secret talks save (in) him who orders sadaqa (charity in Allah's cause) or Ma'ruf (Islamic monotheism and all the good and righteous deeds which Allah has ordained) or reconciliation, between mankind and he who does His, seeking the good pleasure of Allah. we shall give him a great reward (Q. 4:114).*

The committee is mandated to look into so many cases ranging from child custody, marriage dissolutions, inheritance and violation of trust. Even though all the branches of Jamaᶜat Nasril Islam in Northern Nigeria, may be proud of having the committee. However, Kwara State branch of Jamaᶜat Nasril Islam were among branches that has some documents to show that some efforts were made in the area of conflict resolution and reconciliation.

The Sulhu committee of Jamaᶜat Nasril Islam in Ilorin branch, has been able to decide quite a number of cases ranging from inheritance related cases to land matters, child custody and child abuse, juvenile cases and social problem and religions crisis that could have disturbed public peace in the state. The table below shows the summary of some cases as explained by the secretary of Jamaᶜat Nasril Islam, Ilorin Emirate branch 2003-2010.

	Nature/Type of Cases	Total No. of Cases heard	Total No of Cases Resolved	%	Total No. of Cases yet to be resolved	%
01	Inheritance related cases	20	15	75	05	25
02	Land related cases	10	08	80	02	20
03	Social problem (public disturbance)	05	05	100	-	-
04	Juvenile crime/Child abuse	10	10	100	-	-
05	Child custody	10	06	60	04	40
06	Religious related problem	05	05	100	-	-
	Total	60	41	81.6	11	18.4

A BRIEF ACHIEVEMENT OF JAMAᶜAT NASRIL ISLAM OF NIGERIA

In spite of whatever may be said about the Jamaᶜat Nasril Islam by its critics, it must be admitted that the Jamaᶜat Nasril Islam has achieved a lot in its Islamic activities, just to mention a few.

JNI has created unprecedented awareness in training many of its teachers and preachers so that, Islamic Religious Knowledge could be inculcated in Muslims in order to form a strong front.

JNI brought Tijaniyyah and Qadriyyah orders together to discuss and resolve the issue of Sadlu and Qabdu amicably.

Formation of the Supreme Council for Islamic Affairs was initiated by the Jamaᶜat Nasril Islam in Kaduna, in 1974 so that, Muslims in Nigeria can speak with one voice and with a common identity.

JNI is the father of several Islamic organisation in the Northern Nigeria. This means that most Islamic organisations are under umbrella of this organisation. The establishment of the Nigeria Aid Group of Jamaᶜat Nasril Islam on 30th October 1975 to help control crowd and the traffic at Muslim ceremonies was one of their achievements.

CONCLUSION

Tolerance is the need of the hour today as it was yesterday, we must emphasise the need for this virtue among us and in the world. We must foster tolerance through deliberate policies and efforts. We should teach our children respect of each other irrespective of caste, creed, gender, nationality and ethnicity, society cannot be governed by law alone. Law has a relation with society. It suffers if society is rigid and intolerant.

It is clear that Jamaᶜat Nasril Islam is an important Islamic organisation in the country. Having examined the various mission and the focus of the organisations. It is safe to conclude that the organisation is achieving profound success in the pursuant of its mission. It is pertinent to recommend to Muslim and Non-Muslim organisations in Nigeria to emulate the Jamaᶜat Nasril Islam style of operation for the peaceful and harmonious co-existence in Nigeria.

References

A one day Unity Conference for South and South East organised by *Jamaᶜat Nasril* Islam. National Headquarters, Kaduna on 27th May, 2006.

A.A. Adekilekun. Selected Islamic Organisation in Nigeria. 1916 – 1986.

Abdul Lateef Adekilekun. Selected Islamic Organisation in Nigeria, 1916 – 1986 (Ilorin: Kewulere Printing Press, 1989) p. 106.

An interview conducted with Justice AbdulKadri Orire (Rtd) at his residence in Ilorin on 22/02/2009

An interview conducted with Mallam Abdullahi Ahmed, the Administrative Secretary *Jamaᶜat Nasril* Islam, Ilorin Emirate at his office in Ilorin on 18th Feb. 2009.

Jamaᶜat Nasril Islam. Understanding sharia in Nigeria. Ibadan: Spectrum Books Limited. 2001.

John, N. Padan. Ahmadu bello Sardauna of Sokoto (Zaria: Hudahuda Publishing Company, 1986) p. 567

Muhammed Aliyu Kudu "The Role of Jamaᶜat Nasril Islamias and Islamic Organisation". An unpublished B.A. project submitted to the Department of Islamic Studies, University of Sokoto. July 1984.

See Punch Newspaper of Thursday September 13, 2001 (Published in Lagos Nigeria by Punch Newspaper)

The Constitution of the Jamaᶜat Nasril Islamias an Islamic Organisation. An unpublished B.A Project submitted to the Department of Islamic Studies, University of Sokoto. July 1984.

www.biharanjuman.org Mozilla Firefox 18/3/2014

www.islamunveiled.org/eng 17/3/2014

www.islamunveiled.org/eng 20/3/2014

www.al-islam.org/religious-tolerance-islam Mozilla Firefox 18/3/2014

www.suhaibwebb.com 22/3/2014

Organising Pedagogical Activities for Sleep

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ABSTRACT
The aim of this study is to highlight the importance of sleep in the memory-learning procedure, through pedagogical activities. For this purpose: (a) there was investigated the relationship between sleep and memory–learning through contemporary research data from the Neuroscience and (b) pedagogical activities were designed and proposed. Recent studies support that sleep is affecting the daily activities, the physical and mental health and it plays a significant role in memory's consolidation and furthermore in learning. Research data support that the problem sleep lack is fundamental in adolescence. Taking into consideration that: The recent findings of the positive role of a sufficient and qualitative sleep in memory–learning are not widely known in pupils / students. The learning process concerns directly pupils / students as it is related to their personal progress and prosperity. We thought that it would be meaningful to accomplish this work and more specifically: (a) to accomplish a didactic transformation of data from the field of Neuroscience related to sleep and memory - learning. (b) to propose specific examples such as activities of a role playing, synthesis of a questionnaire and several dramatizations.

Keywords: sleep, memory, learning, storytelling.

INTRODUCTION

Today, it is generally accepted that a normal – qualitative (good) sleep has an important influence in human labour, mental and psychological development and equilibrium. Qualitative sleep is considered as a continuous, sufficient (7 – 9 hours) early at night sleep [28, 41]. Sleep deprivation or excess is problematic [17, 18, 24]. Sleep is divided into NREM and REM phases [45] and it follows the circadian rhythms [16, 46].

The relationship between sleep and memory – learning is an interesting, provocative and modern issue which concerns all of us. The findings which sustain this relationship, are only recently accumulated over the last ten years. It is certified from these data that:
Sleep attributes greatly to the main cognitive tasks such as attention, concentration, alertness, encoding and consolidation of memory and finally problem solving-decision making. But the strongest experimental evidence supports a primary role for sleep in the regulation of neuroplasticity [20, 47, 49].

Even short periods of full sleep deprivation could have a permanent ramification impact to memory – learning [17, 18, 24]. The sleep demand in pupils / students is more intense due to learning needs. Every day at school, children learn many, new themes and their brains have to reform and record them. Research certifies that pupils / students will have a better learning only if they sleep after the early obtained knowledge [15, 50]. For this reason, [13] introduce a

good night sleep to pupils/students before taking exams the next day so that they will assimilate the yesterday reading.

Taking into consideration the followings:

1. The relationship between sleep and memory – learning which is a major and vital issue, especially for pupils / students who are in an active learning procedure
2. The present didactic approach is designed and organized appropriately and it is addressed to pupils / students who are not specialized to Neuroscience, Biology and Medicine in general
3. Sleep's functions and the procedures of storage and information recall (memory and learning) are very complicated which involved many and complex concepts
4. Sleep's major contribution to memory - learning, is sustained only the last ten years. The neuroscience research data are discarded into various, specialized sources, they are not widely broadcasted to pupils / students who will be the future citizens. Consequently, these data are not processed, are not familiar and ignored to pupils / students
5. Nonetheless, these findings would alter the conceptions and attitudes of a major part of pupil / student population. They might suffer from insomnia or they are used to stay out late by surfing the internet, either ignoring the negative consequences sleep lack or they believe that by adopting vigil they become adults.

For all the above reasons, it was determined to accomplish the present study which aspires to highlight the importance of sleep in memory – learning procedure, through pedagogical activities.

In order to accomplish this study, it was required the followings:

a. It was investigated the relationship between sleep and memory – learning through neuroscience research data and
b. It was designed and proposed pedagogical activities.
c. This didactic approach would gradually contribute to form a positive attitude and behaviour in pupils / students.

THE CONCEPTUAL FRAMEWORK
Definitions – basic acceptances
Memory – Learning - Neuroplasticity
Memory constitutes a fundamental property of the brain and its storage is an inextricable part of the procedure of continuous information processing from the brain. Brain areas involved in the neuroanatomy of memory such as the hippocampus, the amygdala, the striatum or the mammillary bodies are thought to be involved in specific types of memory [30].

Memory is based into the alterations of synaptic communication among neurons. These alterations are maintained for short or long period of time. This ability to alter the synaptic communications is called neuroplasticity which is the base of memory and learning [31].

Nowadays, it is believed that brain is not a physiologically static organ, and it explores how - and in which ways - the brain changes throughout life [39]. Ramon y Cajal in 1890, introduced the principle of connective specificity among neurons and he stated that pre-existing connections can be either reinforced in action or multiply the terminals in use. Kandel vindicated Cajal through experiments on aplysia [25].

Nowadays, it is believed that neurons communicate by applying the Hebb rule, cells which fire together, wire together [26]. Especially, Eric Kandel in 2009 found that the cellular basis for memory depends on persistent changes in synapses. The differences in the strength of these connections come about through learning. Neuroplasticity occurs from cellular changes due to learning, to large-scale changes involved in *cortical remapping* in response to injury.

Memory is distinguished into two categories, short-term memory and long-term memory according to the fingerprint time of an information – knowledge in the brain [5]**.**
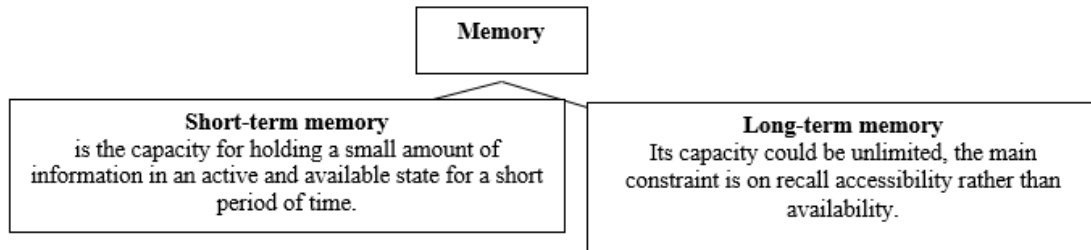

Figure-1. Short-term and long-term memory.

Furthermore, long-term memory is usually divided into two types, explicit and implicit memory whether the subject has or has not consciousness of what he is learning [7, 27].
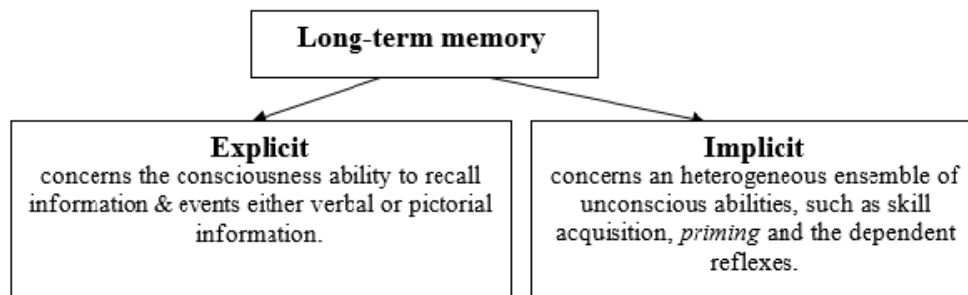

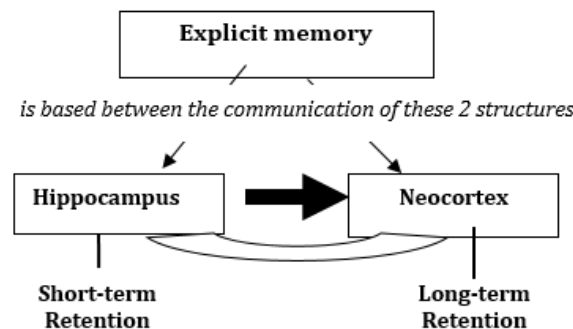**Figure-2 Definitions of explicit and implicit memory**

Figure-3. Location of long – term memory [15, 47].

Learning is acquiring new or modifying knowledge, behaviours or skills. Learning builds upon and is shaped by what we already know so that learning is considered as a process. Learning produces changes in the brain which are relatively permanent [43].

Sleep
Sleep is a naturally recurring state characterized by absent consciousness, relatively suspended sensory activity, and inactivity of all voluntary muscles [32] (p. 936)). It is part of an endogenous biological cycle of sleep and alertness following the circadian rhythms. Finally,

it occupies one third of our lives. In mammals sleep is divided into two broad types: sleep with NREM and sleep with REM. Each type has a distinct set of associated physiological and neurological features [45]. NREM sleep was divided into three stages in 2007 by the American Academy of Sleep Medicine (AASM).

Stage 1 occurs in the beginning of sleep with slow eye movements. It is considered the gate between awake and sleepy.
Stage 2 no eye movement occurs and dreaming is very rare. It consists of 50% of the whole eight hour night sleep.
Stage 3 is a deep sleep which is also called Slow-Wave Sleep (SWS). Dreaming is more common in this stage than in other stages of NREM sleep [44].
Stage 4 – (REM sleep), most muscles are paralysed. REM sleep appears to be important for brain development so that it occupies the majority of infants' sleep time [10]. Furthermore, it helps in the emotional processing of prominent events which occur during the day and finally brain adapts according to new situations.

The relationship between Sleep and Memory - Learning
Recent studies [12, 14, 48] have shed light on the role of sleep in neuroplasticity and more specifically in memory consolidation and optimization of neural networks to retain eminent memory traces.

Memory consolidation:
Human brain consists of neural networks which are involved in both the encoding and the consolidation of memory and during sleep no new incoming information is loaded so that memory consolidation works more effectively during sleep [14].

After encoding, memory contents initially remain labile and vulnerable [3] and they need to undergo a phase of stabilization in order to be remembered in the long-term [19]. Such stabilization is referred to as memory consolidation. Thereby, making the loss of consciousness an adaptive feature of sleep which benefits the stabilization of recently encoded information [8]. Moreover, an important mechanism proposed for sleep's role in the facilitation of memory consolidation is the replay of memory traces in hippocampal and neural networks during sleep [14, 38].

What does sleep attribute?
Sleep attributes greatly to the main cognitive tasks such as attention, concentration, alertness, encoding and consolidation of memory and finally problem solving-decision making.
  o ***Attention***: good sleep reinforces attention [22, 40] which is the most important cognitive function.
  o ***Alertness***: is reduced after sleep deprivation and it is observed reduced brain activity especially in thalamus and prefrontal cortex [47].
  o ***Memory solidification***: is the ability of remembering and solidifying recently obtained memory. Researchers certified that sleep after memorization and before the memory test, it improves the performance. Thereby, sleep has an active role in organization and solidification of memories [14, 48].
  o ***Problem solving and decision making***: is sharpened after a good night sleep. Research proved that humans' brain who stayed awake the whole night, were oscillated from absolute euphoria to absolute despair [20]. This fact is not the best in order to reach a right decision.

DIDACTIC TRANSFORMATION

The present didactic approach is designed and organized in such a way so that it would address to the young population and more specifically to pupils of High school and students who are not specialized to Neuroscience, or Biology or Medicine in general.

In order to didactically transform this scientific material so that it would become suitable for teaching into pupils/students, it is necessary to go through from scientific Knowledge to school Knowledge and to proceed to the followings:

(i) To locate the basic concepts – ideas which they will be approached

(ii) To determine the basic objectives which will be set

(iii) To investigate, to locate, to select and probably transform the relative scientific material

(iv) To investigate and to select the appropriate didactic methods, tools and techniques

(v) To design the appropriate pedagogical activities.

Basic ideas

o During sleep, various brain parts are activated and sleep follows the circadian rhythms

o Sleep is consisted of two phases, Non Rapid Eye Movements (NREM) and Rapid Eye Movements (REM)

o The concept of equilibrium at sleep. Human organism needs the appropriate amount of sleep. Deprivation or excess of sleep is problematic

o The concepts of memory and learning

o The relationship between sleep and memory - learning

o The qualitative sleep is sufficient, constant and starts early at night

Qualitative sleep:

o Promotes memory and learning facilitates the neuroplasticity and the communication among different brain areas

o Enhances the attention which is the base of all cognitive abilities

o Enhances alertness

o Improves the ability to remember and solidification of recently obtained memory

o Sharpens the ability of problem solving and decision making.

General objectives

In this study, we solicit to set objectives of different areas (emotional, mental and action ones) which angle to construct a gradually global - complex thought [33, 34] so that pupils/students will adopt positive attitudes towards a qualitative sleep.

Indicative objectives

Pupils/Students:

o To investigate the beneficial effects of qualitative sleep mainly in memory and learning

o To comprehend/evaluate that their organism needs a specific amount of sleep: deprivation or excess is problematic

o To appreciate the complexity of human organism functions

o To adopt positive views and attitudes towards qualitative night sleep

o To develop collaborative and ccommunicative skills

o To argue and document their viewpoint [6].

o To design and suggest optimistic prospects - solutions to possible problems towards sleep.

Investigation and Selection of the appropriate educational material

For this study, it is required the investigation and selection of the appropriate educational material. We can exploit a great variety of educational material types several sources such as the internet, libraries, newspapers, journals and scientific meetings.

This educational material is used directly or appropriately transformed in order to cater pupils/students' needs. It can be given to pupils/students as a simple text or an enriched text with various figures and images or even a more popular Power Point.

Didactic methods - techniques and Activities

In this study, we aspire to create a rich and active learning/didactic environment [37] combining different methods which accomplish educational objectives of different areas. Methods and activities are selected according to the following criteria:

- o To be active and to rear pupils/students' interest
- o To operate for stimulating cooperation and as incentives for participation [35]
- o To develop pupils/students' critical thinking
- o To integrate dramatizations and conflict situations (role playing, dramatized dialogues) which motivate pupils/students' emotions and interests and foster their participation [42].

These activities can be based on a variety of teaching methods and approaches such as Jigsaw method, role playing, synthesis of questionnaire, storytelling [1, 2, 21, 23, 35, 36].

DESIGN AND ORGANISATION OF ACTIVITIES AND EXAMPLES FOR SLEEP AND ITS IMPORTANCE INTO MEMORY – LEARNING

Design and Organization of Activities

In order to design and organize the activities, it was necessary to determine and relate the (a) Conceptual framework–Key ideas, (b) the Educational Objectives and (c) the Activities, (see table 1).

Table 1: Design of Activities for sleep and its importance into memory –learning

Conceptual framework–Key ideas	Indicative Objectives	Activities
The qualitative sleep: ➢ Facilitates neuroplasticity ➢ Enhances memory – learning ➢ Reinforces attention ➢ Reinforces alertness ➢ Improves the ability of memory and solidification of recently obtained memory ➢ Sharpens the ability of problem solving and decision making	Pupils/Students: ➢ Gradually adopt a positive attitudes towards qualitative sleep ➢ To comprehend that sleep is a very important function which follows the circadian rhythms. ➢ To develop social skills (collaboration and communication) ➢ To argue and document their viewpoint	**Activity (1)** Jigsaw Role Playing *He considers night for day* **Activity (4)** Synthesis of questionnaire *Sleep and its importance* **Activity (5)** Synthesis of open letter to a young friend *Why should I go early to bed tonight?*

Our organism needs a specific amount of sleep: deprivation or excess is problematic Pythagoras: *Food, drink, sleep and sex, all these should be in moderation. Immoderation causes disease* Alcmaeon: Equality - Equilibrium Hippocrates: *Both of them, sleepiness and insomnia are harmful* Walter Cannon: Homeostasis	Pupils/Students: ➢ To investigate and compare the dominated conceptions for sleep and its importance through years. ➢ To develop listening skills and show respect for the viewpoint of others ➢ To develop an exploratory & critical attitude towards the dominant, social perceptions for sleep and its importance.	Jigsaw Role-Playing Activity (2) An intense televised debate about *Insomnia and Sleepiness*
Sleep unfolds into 2 phases while important functions take place During REM sleep, hippocampus and amygdala are activated and it occurs the consolidation of emotional memories Morfeas, in ancient years, was considered the god of dreams.	Pupils/Students: ➢ To develop analogical and symbolic thinking through approaching myths ➢ To cultivate their imagination ➢ To practice in the synthesis of stories	Storytelling activity (3) Synthesis of a story *Morfeas's journey from NREM to REM sleep and vice versa.*

It should be clarified that the above mentioned example of the design and organization of activities for sleep and its relation to memory - learning is an indicative proposal. Only part of the above activities it has been applied into a student class. To investigate the effect of all of the proposed activities on students' knowledge and attitudes specific field research is needed using a real classroom.

Pedagogical techniques for Activities and Examples
Jigsaw Role Playing Activity
The Jigsaw Role Playing Activity derives from the combination of Jigsaw method [4] and Role Playing [11] and it can support both cooperative - collaborative learning and Role Playing. The main goal of this activity is to encourage pupils/students to learn through performing specific investigations and engaging roles.

The proposed Jigsaw Role Playing Activity consists of the following seven phases:

*(i) **Introduction to the activity**:* Pupils/Students are informed about the whole context of the activity, exchange ideas and clarify the aims and the whole procedure of the activity.
*(ii) **Original group creation**:* The pupils/students are randomly assigned - using the Grouping tool - to 4 groups of 6 students. Initially, each group discusses the issues, striving to form a commonly acceptable framework of ideas. Each member of each group should also decide which essential issue they prefer to investigate.
*(iii) **Creation of expert groups**:* Each expert group must visit the specific areas to collect specific data, attempt as much as possible to comprehend the deeper meaning of the data they have collected, include a variety of learning representations: e.g., photographs, texts, schemes,

and organize an educational material as a learning tool to teach their colleagues in their base groups.

(iv) **Back to the original groups***:* On returning to their original group, each expert should propose their learning materials.

(v) **Group Role playing formation/construction***:* Each group has to prepare a whole learning material as part of a role game in order to cover the total knowledge acquired during their learning process, taking into account all the information included in the instructional materials created by the expert groups.

(*vi*) **Group Role playing presentation***:* The presentation of the *Role play* by the pupils/students.

(vii) **Assessment-Evaluation***:* Indicative criteria on the basis of which the role play of pupils/students can be assessed are, among others, as follows:

if each specific role play:

(a) Integrates successfully dramatizations and conflict situations to motivate students' emotions and interest,

(b) is able to excite pupils' fantasy and interest [29].

Example (a): Jigsaw Role Playing Activity (1) (see table 1)
He considers night for day. How are we going to convince him to sleep at nights?

A short scenario: *A family discussion about sleep*
Stelios, first year student in a district University, returns home for his summer vacations. Meanwhile, his parents realised that *he considers night for day.* He does not sleep at all during night but he sleeps during daytime and he wakes up in the evening. His parents are worried but they do not know the appropriate arguments of a good night sleep.
Organise a family conversation based on arguments of a good night sleep in order to convince Stelios to sleep early at night.

Create Four Expert Groups for specific investigations into the following essential issues:

- o Circadian rhythms (word etymology).
- o Positive consequences of night sleep (Structure 2-3 arguments from contemporary Neuroscience research)
- o Negative consequences of lack of night sleep (Structure 2-3 arguments from contemporary Neuroscience research)
- o The importance of night sleep in greek tradition (Dominant social conceptions, sayings, proverbs, mottos in favor of a qualitative night sleep).

Roles
Role 1: Stelios (Student)
Role 2 & 3: Grandmother and Grandfather of Stelios
Role 3 & 4: Mother and Father of Stelios
Role 5: Neighbor (favorite friend of Stelios) who studies Neuroscience.

Example (b): Jigsaw Role Playing Activity (2) (see table 1)
Both of them, sleep and lack of sleep when they are excessive, they are harmful. An intense televised debate on the theme: Insomnia and Sleepiness, two sides of the same coin. From Pythagoras and Hippocrates until the contemporary ideas of Neuroscientists. Create Four Expert Groups for specific investigations into the following essential issues:

- (i) The equilibrium in sleep through the greek tradition, the greek and foreign literature (sayings, proverbs, dominant social perceptions, mottos concerning insomnia and sleepiness).

(ii)　The equilibrium in sleep in ancient greek philosophy (Pythagoras, Hippocrates, Alcmaeon)
(iii)　Contemporary views from Neuroscience for insomnia
(iv)　Contemporary views from Neuroscience for sleepiness.

Roles:
Role 1: Philosopher
Role 2, 3, 4: Neuroscientists
Role 5, 6, 7, 8, 9: Pupils/Students
Role 10: Coordinator.

It is clarified that the number of participants in the discussion of Neuroscientists, Philosophers and pupils/students is modified according to circumstances.

Example (c): Storytelling Activity (3)
Synthesis of a story based on supporting material and key questions - Telling the story (group work).

Morfeas's journey through NREM to REM sleep and vice versa.
According to ancient Greeks, Morfeas was the god of dreams and his mission was to appear in human's dreams impersonating several faces.
He had three brothers, called the Dreams, who helped him. Their names were Fovitor, Fantasos and Ikaelos.
Imagine and describe a fiction Morfeas's journey into NREM and REM sleep.

You can rely your story, of Morfeas and his brothers' fantastic night visit during your sleep, after having experienced an emotional fact.

You could rely on the supporting material relevant to the following themes:
o　The dream in ancient Greece (according to Hippocrates, Platon and Artemidoro)
o　Gods of sleep in ancient Greece (God of sleep, Morfeas, Pasithei)
o　NREM and REM sleep
o　Sleep and emotional memory - Sleep and explicit memory.

Source: http://hypnos.gr/index.php?mod=text&view=_text_page_142&pid=142&cat=133
http://en.wikipedia.org/wiki/Sleep
http://www.youtube.com/watch?v=5iV0ThBmXmA&feature=youtu.be

Indicative key questions
o　What would Morfeas see as he was going through NREM to REM sleep and vice versa?
o　Which possible facts and memories will wake up Morfeas in a specific person?
o　Whose of Morfeas brothers will accompanied him to this journey?

Example (d): Synthesis of Questionnaire (Activity 4) (see table 1)
Sleep and its importance.
Pupils/Students construct a questionnaire in group work and then in the class. Every pupil/student has the responsibility to address it to five persons (friends, relatives, classmates) (see questionnaire in appendix).

Example (e): Synthesis of an open letter to a young friend (Activity 5)
(friend, relative, classmate) (see table 1)
Why should I go early to sleep?
Which arguments will I use in order to sustain the importance of qualitative sleep and to convince a young friend to change his habits to stay up late and to aspire a qualitative sleep.

Instructions

a) Entrench your arguments in scientific studies.

b) Use cartoons, sayings, mottos and proverbs so that you accomplish to have an interesting and convincing letter.

References

Agelidou, Evangelia. & Tsilimeni, T. (2009). *Storytelling as a learning tool in Environmental Education - activities and proposals for pre-school and primary education.* Athens, Kastaniotis Publications.

Agelidou, Evangelia. & Baratsi-Barakou, Anna. (2012). Approaching the concept of recycling-reuse through storytelling within the framework of Environmental Education For Sustainability. Proceedings of ICERI 2012 conference, 19th-21st November 2012, Madrid, Spain.

Alberini, C. M. (2011). The Role of Reconsolidation and the Dynamic Process of Long-Term Memory Formation and Storage. *Front Behav Neurosci.* 5: 12.

Aronson, E. (1971). *History of the Jigsaw Classroom.* Retrieved from The Jigsaw Classroom. In http://www.jigsaw.org/history.htm (27/3/2012).

Baddeley, A. D.; Thomson, N.; Buchanan, M. (1975). Word length and the structure of short term memory. *Journal of Verbal Learning and Verbal Behavior* 14 (6): 575–589.

Bellenger, L. (1996). *L'argumentation.* Paris, ESF.

Bergmann, T.O., Mölle, M., Diedrichs, J., Born, J., & Siebner, H.R. (2011). Sleep spindle-related reactivation of category-specific cortical regions after learning face-scene associations. *NeuroImage* 59 (3): 2733–2742.

Born, J., Rasch, B., & Gais, S. (2006). Sleep to remember. *The Neuroscientist,* 12, 410-424.

Cajal, R.S. (1890). *Manual de Anatomia Patológica General (Handbook of General Anatomical Pathology).*

Carson, N. & Heth, C.D. (2010). *Psychology: the science of behavior*, 7th ed, Pearson.

Chesler, M. & Fox, R. (1966). *Role-playing methods in the classroom*. Chicago: Science Research Associates.

Cirelli C, Tononi G. (2008) Is sleep essential? PLoS Biol 6 (8): e216.

Davis, M. H. & Gaskell, M. G. (2009). A complementary systems account of word learning: neural and behavioural evidence. *Phil. Trans. R. Soc. B*, 00, 1–28.

Diekelmann, S. & Born, J. (2010). The memory function of sleep. *Nat Rev Neurosci*, 11, 114–126.

Diekelmann, S., Büchel, C., Born, J. & Rasch, B.J. (2011). Labile or stable: opposing consequences for memory when reactivated during waking and sleep. *Nature Neuroscience*, 14, 381–386.

Dijk et al. (2005). Timing and Consolidation of Human Sleep, Wakefulness, and Performance by a Symphony of Oscillators. *J Biol Rhythms*, 20 (4): 279–290.

Drummond, S.P., et al. (2000). Altered brain response to verbal learning following sleep deprivation. *Nature*, 403, 655–657.

Drummond, S.P. & Brown, G.G. (2001). The effects of total sleep deprivation on cerebral responses to cognitive performance. *Neuropsychopharmacology*, 25, 68–73.

Dudai, Y. (2004). The neurobiology of consolidations, or, how stable is the engram? *Annual Review of Psycholgy*, 55, 51-86.

Ellenbogen, J.M., Hulbert, J.C., Stickgold, R., Dinges, D.F. & Thompson-Schill, S.L. (2006). Interfering with theories of sleep and memory: sleep, declarative memory and associative interference, *Current Biology*, 16: 1290-1294.

Febvre, M. & Giordan, A. (1990). *Maîtriser l' information scientifique et médicale*. Paris: Delachaux et Niestlé.

Fukuda, K, & Vogel, E.K. (2009). Human variation in overriding attentional capture. *The J. of Neuroscience* 29(27): 8726–33.

Galbraith, I. D. (1996). *A portfolio of teaching Ideas for high school biology.* Trifolium Books Inc. Canada

Harrison, Y. & Horne, J.A. (2000). Sleep loss and temporal memory. *Q J Exp Psychol A.*, 53, 271–279.

Hawkins, R.D., Lalevic, N., Clark, G.A. & Kandel, E.R. (1989). Classical conditioning of the Aplysia siphon-withdrawal reflex exhibits response specificity. *Proc Natl Acad Sci USA*, 86(19): 7620–7624.

Hebb, D.O. (1949). *The Organization of Behavior*. NY, Wiley & Sons.

Jacobs, J. (1887). Experiments on Prehension. *Mind* 12 (45): 75–79.

Klerman, E.B., Gershengorn, H.B., Duffy, J.F., Kronauer, R.E. (2002). Comparisons of the Variability of Three Markers of the Human Circadian Pacemaker. J Biol Rhythms *17 (2): 181–193.*

Kordaki, M. & Agelidou, E. (2010). A learning design based environment for online, collaborative digital story telling: an example for Environmental Education. *International Journal of Learning,* Vol.17, 95-106.

LaBar, K.S. & Cabeza, R. (2006). Cognitive neuroscience of emotional memory. *Nature Reviews Neuroscience* 7: 54–64.

LeDoux, J.E. (2002). *Synaptic self: how our brains become who we are*. New York, USA Viking.

Macmillan Dictionary for Students, Macmillan, Pan Ltd. (1981).

Morin, E. (1990). *Introduction à la pensée complexe*. Paris: ESF.

Morin, E. (1999). *La tête bien faite.* Paris: Éditions du Seuil.

Mucchielli, R. (1996a). *Le travail en equipe*. Paris, ESF.

Mucchielli, R. (1996b). *La dynamique des groupes*. Paris, ESF.

Mucchielli, R. (1998). *Les methodes actives dans la pedagogie des adultes*. Paris, ESF.

Nishino, S. & Okuro, M. (2008). Armodafinil for excessive daytime sleepiness. Drugs of today (Barcelona, Spain: 1998) *44 (6): 395–414.*

O'Neill, J., et al. (2010). Play it again: reactivation of waking experience and memory. *Trends Neurosci.* 33:220–229.

Pascual-Leone, A., Freitas, C., Oberman, L., Horvath, J. C., Halko, M., Eldaief, M. et al. (2011). Characterizing brain cortical plasticity and network dynamics across the age-span in health and disease with TMS-EEG and TMS-fMRI. *Brain Topography*, 24, 302-315.

Paula, A. & Polo-Kantola, P. (2007). Sleep deprivation: Impact on cognitive performance. *Neuropsychiatr Dis Treat* 3 (5): 553–567.

Porkka-Heiskanen, T. (2013). Sleep homeostasis. *Curr Opin Neurobiol.*

Ramondt, L. & Watts, L. (2005). Sustainability through engagement: Storytelling strategies as incentives for participation.

In: *jellis.org/work/group2005/papers/RamondtWattsRevised.pdf (3/4/2010).*

Schacter, D.L., Gilbert, D.T. & Wegner D.M. (2011). *Psychology.* Worth Publishers, 2nd ed.

Schulz & Hartmut (2008). Rethinking sleep analysis. Comment on the AASM Manual for the Scoring of Sleep and Associated Events. *J Clin Sleep Med* (AASM) 4 (2): 99–103.

Silber, M.H., et al. (2007). The visual scoring of sleep in adults. *Journal of Clinical Sleep Medicine* 3 (2): 121–31.

Shneerson, J.M., Ohayon, M.M. & Carskadon, M.A. (2007). Circadian rhythms. *Rapid eye movement (REM) sleep*. Armenian Medical Network.

Thomas, M., Sing, H., Belenky, G., Holcomb, H., Mayberg, H., Dannals, R., Wagner, H., Thorne, D., Popp, K., Rowland, L., Welsh, A, Balwinski, S. & Redmond, D. (2000). Neural basis of alertness and cognitive performance impairments during sleepiness. I. Effects of 24h of sleep deprivation on waking human regional brain activity. *J Sleep Res.* 9 (4), 335-352.

Walker, M.P. (2009). The role of sleep in cognition and emotion. Ann N.Y. Acad. Sci. 1156:168–197.

Wang, G., Grone, B., Colas, D., Appelbaum, L. & Mourrain, P. (2011). Synaptic plasticity in sleep: learning, homeostasis and disease. *Trends Neurosci.*, 34(9):452-463.

Wilhelm, I., Diekelmann, S., Molzow, I., Ayoub, A., Mölle M, Born J. (2011). Sleep selectively enhances memory expected to be of future relevance. *J Neurosci.* 2;31(5): 1563-9.

http://hypnos.gr/index.php?mod=text&view=_text_page_142&pid=142&cat=133

http://www.youtube.com/watch?v=5iV0ThBmXmA&feature=youtu.be

APPENDIX
QUESTIONNAIRE FOR YOUR SLEEP
SLEEP AND ITS SIGNIFICANCE

1. Age:
18-25 □
25-30 □
30-35 □

2. Occupation:
Student   □
Employee   □

3. If you are an employee, which is your field of work?
……………………………………………………………………………………

4. How many hours do you sleep during the 24h day-night?
……………………………………………………………………………………

4a. Do you have siesta?
Yes □
No □
I don't answer □

4b. Justify your answer, by giving two reasons for whom you are used to have or not have siesta
……
……
………………………………………………………

5. At night, what time do you usually go to bed?
……………………………………………………………………………………………

6. Mark with an X in one or more of the following sentences which you agree

During night sleep, usually:
- I do not have difficulties to sleep □
- I sleep quietly □
- I sleep constantly without awakenings □
- I find it difficult to get to sleep □
- During the night, I wake 3-4 times □
- I wake early in the morning and then I can't sleep □
- I can't wake in the morning □

7. How many times during the week or month do you stay awake? (meaning that you sleep after 2-3 am)?
…………………………………………………………………………………………………

8. Do you stay awake for a specific reason ?

………………………………………………………………………………………………

9. Mark with an X one or more of the following sentences which you agree

When I stay awake,
- I regret because I find it difficult to wake up the next morning □
- I regret because I do not feel well the whole next day and literally, its like *doing nothing the whole day* □
- I don't regret because I feel very well the next day □
- I don't regret because I feel that I've grown up and I am free to choose whether I want to stay awake the whole night or not □
- I don't regret because I manage to compensate the remaining sleep during the day □

10. Mark with an X one or more of the following sentences which you agree

I've noticed that when I stay awake at night, I experience usually the next day:

a. Difficulties to concentrate eg. in order to study a scientific topic or to finish tasks which require attention eg. in order to fix a complicated device □

b. I experience difficulties in order to accomplish tasks which demand increased alertness (quick and accurate responses on my behalf) □

c. I experience difficulties in order to make the right decisions (decision making) on crucial matters which I'm concerned □

d. I experience difficulties in order to remember e.g. details on various matters which took place the previous day □

11. Mark with an X one or more of the following sentences which you agree

During exams (now and in the past), I ascribe better (remember, learn the syllabus):

a. I study the syllabus and I take the exams after an 8h sleep during the night □

b. I study the syllabus and I take the exams after a few hours and interrupted night sleep □

c. I study the syllabus and I take the exams without sleeping at all (no night sleep) □

Economic Growth and Ecological Sustainability: Some macro level evidence globally

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ABSTRACT

To preserve global ecological capital is becoming more important that spreading social capital, as decreasing ecological capital can be measured easily. The amount of CO2 equivalent stuff in the atmosphere is increasing too quickly. Can economic growth be combined with ecological sustainability to give both prosperity and the urgently needed protection of ecological capital? On the micro level, many projects show that this is indeed possible. But on the macro level, global emissions of greenhouse gases follow the advancement of country affluence closely. The link is the constantly increasing need for more energy, provided by fossil fuels.

Key Words: ecological sustainability, greenhouse gases, energy consumption, the growth-environment problematic: micro (firm) versus macro (country) relationships, ecological capital.

INTRODUCTION

Global ecological sustainability is not enhanced as long as total carbon equivalent emission increase, i.e. augments sharply year in and year out in reality. Yet, economists and environmentalists alike underline that there is in principle no contradiction between economic growth on the one hand and preservation of the environment on the other hand. And they go on to offer many examples of innovations that foster both growth and ecology concerns. Thus, Singapore for instance has spearheaded the development towards economic growth that is also environmentally sustainable. And an entire city in China has been built upon the use of renewable sun energy. Moreover, almost all carmakers have planned for the construction of electricity or hydrogen cars. And many urban sites employ so-called green buses.

This coherence between economic growth and environmental sustainability holds at the micro level in the economy, encompassing lots of interesting and promising projects. However, I would like to argue strongly that at the macro level, especially at the global level, matters are entirely different, as economic activity in general consumes lots of energy, which results in a constantly increasing emission of greenhouse gases.

This global contradiction between economic growth and ecological sustainability, where both entities are valued by many people, will most probably be the major headache of the 21rst century for country governments, because there is a limit to the increase in CO2 equivalent emissions, as far as climate change is concerned. Too much global warming will most probably change the basic living conditions on the planet Earth.

THE RELEVANCE OF ECONOMIC GROWTH

Economists and politicians in all countries emphasize the need for balanced growth on almost every occasion. Zero economic growth has been pledged by a small group of people, talking

about the global limits to growth. They are often rebutted by the argument that growth and environment do not necessarily collide. This is true – at the micro level.

One understands the quest of e.g. France for economic growth, having experienced the misfortunes that a long period of almost zero growth leads to: budget cuts, loss of public service employees, too little investments, reductions in welfare spending, cut backs on culture projects, etc.

Development theory provides a key role to economic growth for the ambition of the Third World to catch-up with the First World. The recent surge in economic growth in for instance the new economic giant countries is looked upon with envy by the European Union (Table 1).

Table 1. Economic affluence in the 21rst century
**(LN GDP per capita in constant value 2005 USD)**

Year	2000	2003	2006	2009	2013
Euro area	10,3	10,3	10,4	10,3	10,4
European Union	10,2	10,2	10,2	10,2	10,3
Brazil	8,39	8,40	8,49	8,57	8,67
India	6,36	6,47	6,68	6,85	7,06
China	7,02	7,26	7,57	7,87	8,18
United States	30,1	30,1	30,2	30,2	30,3

Source: World Bank Open Data, http://data.worldbank.org

As is well-known, the GDP measures on income or production does not take environmental costs into account. Instead, polluting industries like the airline business, shipping and the car sector contribute considerably to the GDP. It has been argued that the GDP standard indicator should be revised to include the subtraction of ecology costs.

Now, the generation of total income or production for a year comes with the emission of greenhouse gases. Diagram 1 portrays the close connection between GDP and total emission, using LN numbers for most recently available data.

**Diagram 1. Total emissions and GDP: Equation: LN GDP - LN GHG Total: y=0.81x , R2 = 0.708**
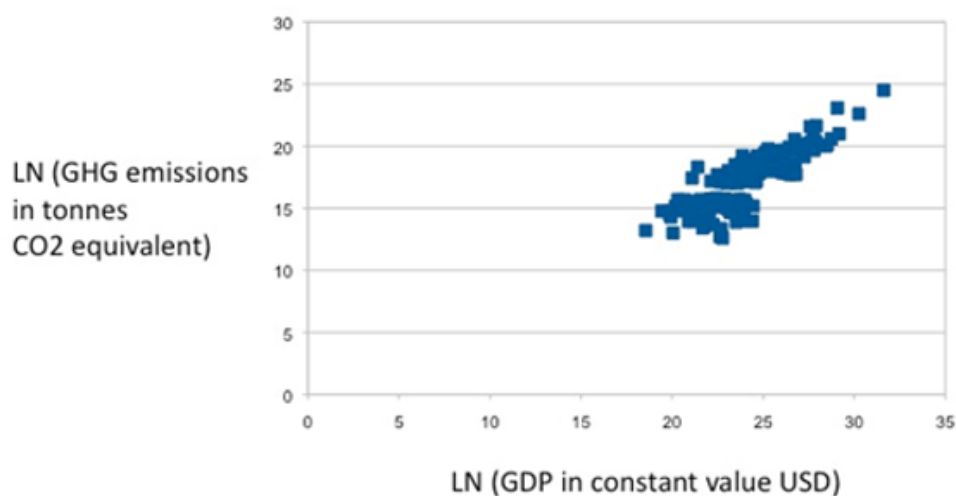
Note: GDP vs. Greenhouse emissions for 158 countries in 2011
Sources: 1. World Bank Open Data, http://data.worldbank.org.2. CAIT WRI 2.0: Climate Data Explorer, World Resources Institute, http://cait2.wri.org

Diagram 1 shows that on the global macro level, the variation in economic development has strong implications for the emission of all kinds of greenhouse gases: the richer and larger a country economy, the more emissions it releases. This finding is, of course, the rationale for the argument that we need another kind of economic growth that builds upon carbon neutral technology. This is no doubt feasible in theory, but in practice we are stuck with the fossil fuel economy. And the destruction of forests and fresh water sources continue as well as the acidification of the oceans.

At global reunions among the politicians and experts, there is much talk about the emissions per capita. Developing countries underline that they tend to display lower emissions per capita than advanced economies. Is this true? Diagram 2 suggests an answer to the question of the distribution of the total greenhouse gases, which is a most policy relevant issue.

Diagram 2. Emissions per capita and GDP per capita: Equation: LN GDP / CAP - LN GHG / CAP: y=0.52x, R2=0.370
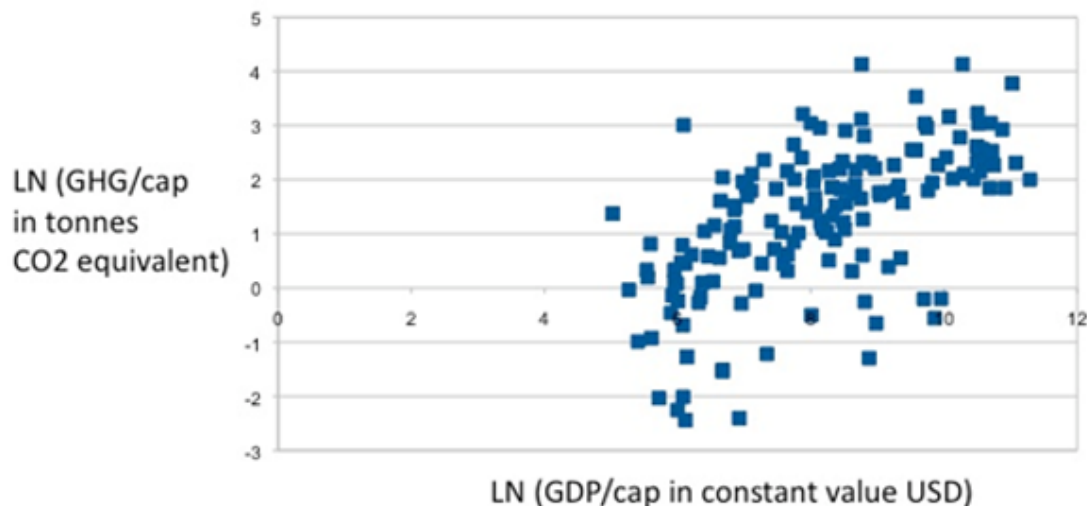
Note: GDP/capita vs. Greenhouse gas (GHG) emissions / capita for 158 countries in 2011. Sources: 1. World Bank Open Data, http://data.worldbank.org. 2. CAIT WRI 2.0: Climate Data Explorer, World Resources Institute, http://cait2.wri.org

The finding, however, suggests strongly that emissions per capita is only weakly associated with GDP per capita. Thus, a few rich countries have rather low emissions, whereas some developing countries have substantial emissions per person. Thus, a global policy for ecological sustainability with regard to emissions control must be the responsibility of all countries on the globe, all people being concerned. It is true that a few rich countries have very high emission per capita (Gulf States, Australia, the US), but most of the emissions originate in the very populous countries in the world, especially in Asia.

Economic development can, I emphasize again, be environmental friendly. Many micro projects have reduced carbon emissions and yet delivered goods and services more efficiently. However, what counts at the macro level is the overall addition and subtractions. Take the example for Singapore that is well aware of the energy-environmental conundrum. Although it must be admitted that Singapore is doing many advanced projects to promote ecological sustainability, it should be pointed out that it is a big hub for air traffic and see shipping, which both result in greenhouse gases. In addition, Singapore has coal fired power stations and consumer huge amounts of electricity (water cleaning, waste treatment, air conditioning in almost all housing and public buildings).

The same contradictory finding applies to the UAE where lots of investments are done in ecologically friendly projects. But the fact remains that CO2 emission per capita here are the largest in the world, like Qatar. To understand the close link between total GDP and total emissions one needs to look at global energy consumption.

ENERGY CONSUMPTION

Economic activity in all forms consumes directly or indirectly huge amounts of energy. This leads to the emission of greenhouse gases, directly or indirectly. To take a somewhat drastic example: the rapid increase in consumption of meat energy has resulted in an enormous growth of the number of cows in the world, which produce methane that is very conducive to climate change and global warming. Diagram3 shows the close connection between total GDP and total emission today.

Diagram 3. Energy consumption and GDP: LN GDP - LN Energy consumption: y=0.71x, R2=0.695.
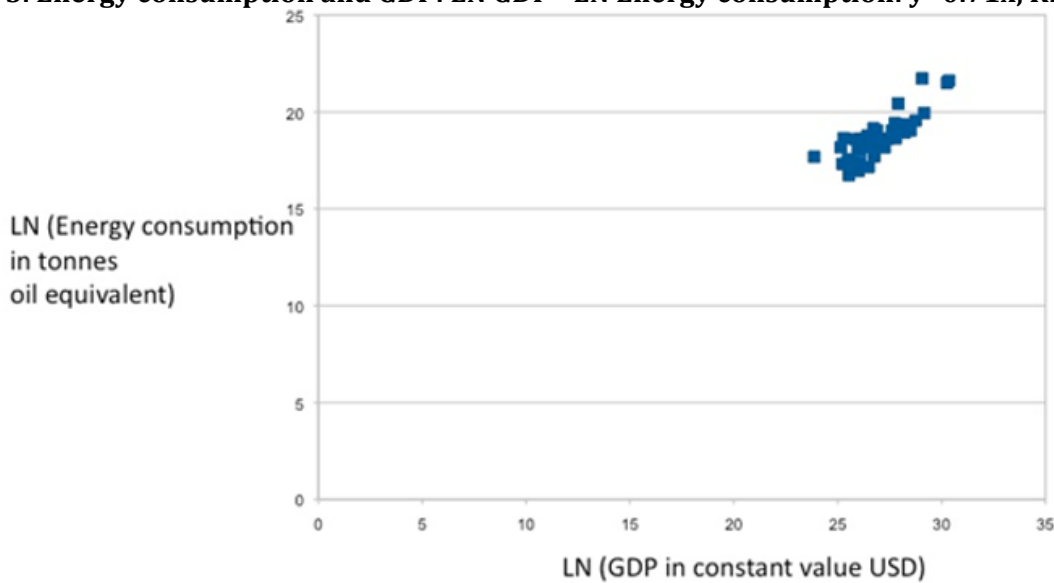
It is true that rich countries consume more energy per person than poor countries, as higher levels of affluence require more energy–in general. Again, the situation is paradoxical, as rich countries can invest in environment friendly technology, but they also consume more energy for upholding their lifestyle. Diagram 4 has the finding.

Diagram 4. GDP per capita – energy consumption per capita: LN GDP / CAP - LN Energy consumption / CAP: y=0.47x, R2=0.641.
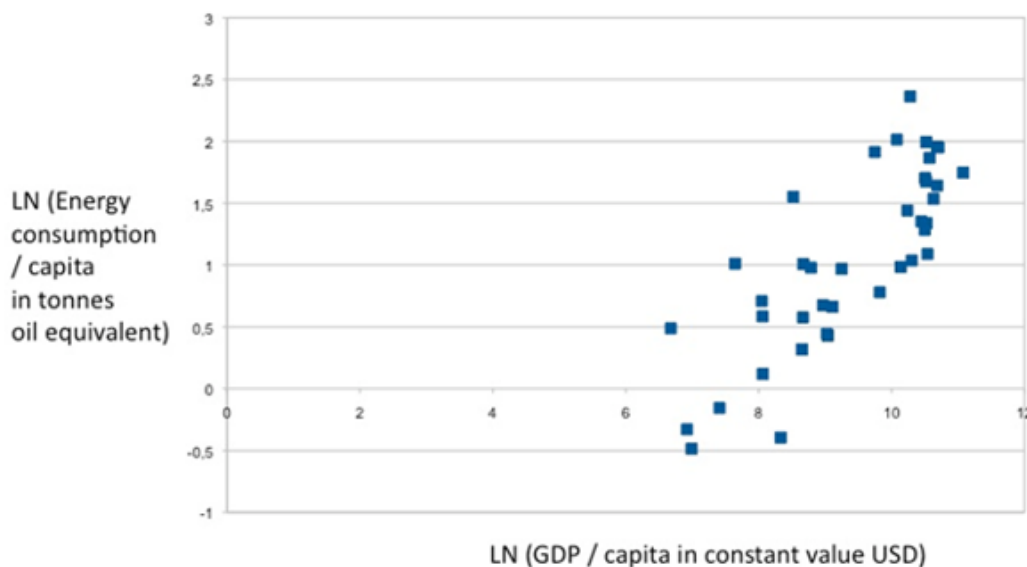
More affluent or luxury life styles are exhibited not only in bigger and stronger cars but also in more heating and air conditioning. Electricity is much needed in affluent countries. If it is not to be produced by nuclear energy, as in Germany, a country mat actually rely more upon coal fired power stations with massive amounts of imports of coal from developing countries, like Colombia with dismal ecological effect.

CONCLUSION

The aim of this research piece has been to attempt to pin down more exactly than what is usually the case the relations between the following entities at the aggregate level: the macro relationships between economic activity, energy consumption and greenhouse gases, as they hold for the globe today when measured at total levels. The findings include:

Two factors increasing greenhouse gases on the macro or global level are world population and economic activity:

Equation I: Total greenhouse gases = LN GHG = 0.520*LN GDP + 0.477 * LN Pop, R2=0.76.

This equation models the global situation today. One can imagine what happens to total greenhouse gases emissions and ecological sustainability when the world population reaches 9 billion and GDP doubles.

The major factor behind the increases year by year in greenhouse gases by some 3 per cent, besides many promising innovations, is the constantly augmenting need for energy. Other factors matter too, it is true, like the cutting or burning down of forests and the acidification of the seas and oceans. We look at the following equations finally:

Equation II. LN Energy = 0.477*LN Pop + 0.43 * LN GDP, R2=0.88.

Again, the increase in energy consumption predictions for the next coming two decades from Energy Information Administration (EIA: Annual Energy Outlook for 2014) mirror the projected growth in world population and the optimistic scenario for economic production or the stylised economic growth rates. I believe the energy factor is the central one, with support from the following equation:

Equation III. LN GHG = 1.0109*LN Energy - 0.133*LN Pop + 0.1052*LN GDP, R2=0.95.

The G20 group of states and governments need to do something to promote the use of energy from renewable resources. As they represent almost 80 per cent of global country population, the G20 could embark upon an ecologically sustainable energy policy without either free riding or massive transactions, which have plagued the UN efforts thus far. Changing energy patterns is the only realistic option, as the quest for economic growth is unstoppable.

References

Data for GDP, GDP per capita, and population: World Bank Data indicators: http://data.worldbank.org/indicator

Energy consumption data: Enerdata Global Statistical Yearbook: http://yearbook.enerdata.net

Greenhouse gas emission data: World Resources Institute CAIT2, http://cait2.wri.org.

EIA: Energy Outlook for 2014:http://www.eia.gov/forecasts/aeo/

Enrich College English Teacher's Knowledge of Summarizing Strategies Instruction and Expository Text Comprehension with Kintsch's Reading Model

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ABSTRACT

College English teachers' knowledge of summarizing strategies instruction with expository text can be enhanced by their understanding of Kintsch's Construction-Integration (CI) model. The argument is based on the exploration of how Kintsch's CI model, being a reading model, could serve as a theoretical base to explain the comprehension process of expository text, and the functioning process of summarization. Rooted in cognitive theories, Kintsch's reading model consists of two reading phases (i.e., a construction phase and an integration phase) that make it suitable to explain readers' text comprehension process when they come across unfamiliar reading material, which is exactly the case when post-secondary students read to learn from content area textbooks mostly written in the genre of expository text. Moreover, the generation of three levels of text representation (i.e., surface structure, textbase and situation model) conveyed in this model reveal what reading strategies can be derived from this model and how one type of the reading strategies, namely, macrostructure strategies, is closely related to summarization. This relatedness is supported by researchers' studies on and educators' practice of summarization instruction to college students. Kintsch's CI model is, thus, an appropriate reading model for college English teachers to add to their knowledge base to facilitate their teaching of summarizing strategies with expository text at the tertiary level.

Keywords: Teacher Knowledge, Expository text, Summarization, Summarizing strategies instruction, Kintsch's CI model.

INTRODUCTION

The difficulty of reading comprehension for both native English speakers and particularly non-English speakers demands effective reading instruction at various educational contexts. To accomplish each sort of doing, people should have a specific knowledge base to support that kind of accomplishment. Teachers then should possess a great deal of knowledge in order to complete their doing - teaching effectively. National Center for Research on Teacher Education in the United States used the term "knowledge base" to refer to the repertoire of knowledge, skills, and dispositions that teachers require to effectively carry out classroom practices 0]. This definition actually concurs with Shulman's conception of a knowledge base for teaching. Shulman conceived the knowledge base for teaching as an amalgam of knowledge, skills, and dispositions that underlies a teacher's capacity to teach successfully, and considered a solid knowledge base as a precondition to effective teaching 0. At the tertiary level, each week college students are required to read hundreds of pages of content area textbooks mostly written in the genre of expository text, and to understand, summarize, and remember the most important ideas conveyed in the reading materials. Thus, to facilitate college students' academic reading and writing, college English teachers should teach them how to comprehend and summarize expository text, which is a complex teaching endeavor

requiring much knowledge about the subject matter of reading strategies instruction and expository text comprehension.

Many researchers have conducted research on what professional knowledge teachers should generally acquire, of which Shuman's typology is widely known and greatly adopted. Shuman's typology characterizes the knowledge base for teaching into seven types, namely, subject matter knowledge, general pedagogical knowledge, curricular knowledge, pedagogical content knowledge, knowledge of learners and their characteristics, knowledge of educational contexts, and knowledge of educational ends, purposes, values, and their philosophical and historical grounds0. According to Shulman, subject matter knowledge refers to "[f]actual and conceptual subject matter information, the structures of subject matter, the principles of conceptual organization, and the principles of inquiry" 0. This explanation indicates that in order to accomplish specific teaching tasks effectively, teachers need to know the content in ways that differ from what is typically taught and learned in university courses, that is, differ from what learners should know.

This article argues for the enrichment of college English teachers' knowledge of expository text comprehension and summarizing strategies instruction with a reading model, i.e., Kintsch's Construction-Integration (CI) model. Following an introduction of Kintsch's CI model, the focuses of the article are on why Kintsch's CI model is appropriate for such enrichment, how the reading model is related to summarization and how it contributes to the comprehension of expository text.

WHAT ARE THE COMPONENTS OF KINTSCH'S CI MODEL?

As a reading model, Kintsch's CI model first of all provides an explanation of the process of comprehension that the reader experiences. Kintsch called this model the outcome of comprehension, which ends up with a mental representation of a text 0. The mental representation is built up sequentially and in cycles along three levels from the lowest to the highest: surface level, textbase level, and situation model. Kintsch's CI model has thus produced and analyzed these three hierarchical levels of mental representations, which act as a unitary whole in the model of text comprehension. Moreover, a dynamic and strategic system should be required to generate these multi-level representations, and to accomplish the engaged multi-level processes of producing them. Kintsch, carrying on his previous research with the cooperation of van Dijk 0, described all strategies comprising such a system in his CI model. The major constituents of Kinstch's CI model, namely, the reading process, the hierarchically-organized text representations, and the involved strategies, are then to be reviewed in more detail as follows.

Comprehension Processes

Kintsch's CI model considers comprehension as a paradigm for cognition, ranging from perception to analytic thinking or problem solving. In this view, comprehension is thought to proceed from automatic perceiving to conscious planning and strategy use when normal reading breaks down. Thus, Kintsch's CI model is rooted in cognitive theories, which involves the aspects of both perception and analytic thinking. When perceiving, a person must figure out meanings from various sensory inputs in a most efficient way. Kintsch said this is a kind of constraint satisfactory process, "such as solving a puzzle in which the pieces could be assembled in several different ways; the best way is the one that violates the least number of constraints" 0. Analytic thinking is a matter of "planning, generating search spaces and using means-end strategies to find a solution path" 0. Sharing aspects with both, reading comprehension, thus, involves both automatic comprehension without elaboration, and conscious problem-solving with great efforts when normal reading breaks down.

While reading, how readers progress from automatic perceiving to conscious planning and strategy use depends on the comprehension demands of a text. The automatic-to-conscious process has considerable educational implications when reading instruction aims at helping students learn from text, that is, when reading teachers push their students to move forward during their reading from what they already know to what they need to know. This known-to-unknown process usually requires active and resource-demanding efforts that are usually difficult to maintain and direct.

To understand what they read during this comprehension process, readers try to build a mental representation of a text. This mental-representation-building process then involves the type of evolvement in the way from early elementary and loosely structured perceptions to late quite orderly and conscious stages until the establishment of a coherent mental model of the text. Thus, this sort of comprehension process is "quite sensitive to context and flexibly adjust(ing) to shifts in the environment" 0. As said earlier, the comprehension process first goes through a construction process that is only weakly controlled and proceeds largely in an associative, bottom-up manner, and then continues to "a constraint satisfaction process in the form of a spreading activation mechanism," which ends up with "the coherent order that we experience" 0. This model is thus named the Construction-Integration (CI) model[1].

 As said, the construction-integration comprehension process results in a mental representation of a text. The forming of a mental text representation during reading is the key part in Kintsch's construction-integration theory. The following section elaborates the three levels of mental representations derived directly from text comprehension.

Three Levels of Text Representation
The mental representation of a text produced in Kintsch's CI model is hierarchically organized, starting from a text's surface structures to its propositional representations that consist of textbase and situation model. The three-level representation of a text or a discourse in one's memory is firstly explored by van Dijk and Kintsch 0, and then carried onto Kintsch's CI model. Each level is then explained in more detail in the following.

Surface Structure
First of all, texts are written in words, which are then organized into sentences, paragraphs, and finally into higher-order discourse units such as sections or chapters. When comprehending a text by building a mental model, the reader begins with understanding the meaning of words, and ends with getting the meaning of a text.

Information is represented by the exact words and phrases in the text at the surface level. When reading, sometimes readers need to remember the exact wording, such as in a poem, a joke, or an argument. Such memory for the actual words and phrases of a text is often called the *surface-level* memory. To match this level of mental representation a reader forms, van Dijk and Kintsch 0 used the term "surface structure," which is typically short-lived during the process of comprehension.

For most people, the purposes of reading is not to memorize the exact words and sentences, but to catch and keep the meaning of the words, sentences, paragraphs, and eventually the

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[1] The process model was first described in Kintsch0. It continues and extends the earlier 1978 model of Kintsch and van Dijk0. Kintsch and van Dijk 0 provided the basic process model of text comprehension in 1978, but did not deal with knowledge use in comprehension. Later, Kintsch added this feature and created the construction-integration model 0.

whole text. To achieve this purpose, Kintsch's CI model supposes that the reader forms a higher level of mental representations of a text, which are propositional representations consisting of two levels – text base and situation model.

The Text base
Before the discussion of textbase and situation model, the basic but essential concept "proposition" needs to be discussed first.

Propositions
Most of the time, especially for instructional texts, which are generally organized and constrained by meaning, implied in narrative/expositive content, what matters most is not the exact wording but the message, or in van Dijk and Kintsch's term, semantic contents, conveyed in and extracted from the texts 0. More than one word is combined in schematic forms to form idea units. These idea units are termed as "propositions," which are ways of specifying what constitutes an idea in a text. This semantic level of text representation is thus called the *propositional level* of representation. For example, *Peter watched the film with his iPhone* is a conceptual unit that relates, by means of the predicate *watches*, an agent, an object, and an instrument in a meaningful, conventional way.

This semantic level of text representation can be further elaborated from atomic propositions and complex propositions. Kintsch defined an *atomic proposition* as "a linguistic unit consisting of a relational term (a predicate) and one or more arguments (which may be concepts or other propositions)" 0.

Take the following sentence as an example:
Housewives cook meals (COOK, HOUSEWIVES, MEALS).
Here, COOK is the predicator, and HOUSEWIVES and MEALS are the arguments of the proposition.
A *complex proposition* is defined as a network of atomic propositions corresponding to a (simple) sentence. Propositions are linked in a network either because they are related referentially, as in

The beautiful girl made tea   [MAKE, GIRL, TEA] – [BEAUTIFUL, GIRL],
or because of propositional embedding, that is, one proposition may be embedded in another by serving as an argument of it, as in

If Jane loves David, she is a tomfool   (IF, [LOVE, JANE, DAVID], [TOMFOOL, JANE]),

or because of other-than-referential overlap among propositions, for example, on the basis of a causal relationship, as in

The beautiful girl was tired from cooking meals ([TIRED, GIRL], [BEAUTIFUL GIRL], [COOK, GIRL, MEALS]).

This form of propositional representation makes it possible to count idea units in a text. Kintsch points out that "What makes reading difficult is determined not only by sentence length and the familiarity of the words used but also by the number of ideas expressed, their coherence, and their structure" 0. Nevertheless, reading teachers need to remember that propositional analysis is only a valuable research tool, but not a teaching tool to teach students idea units.

Examples cited above only show propositions at sentence level. Propositions can also be combined to form representations of a whole text. Syntactic information in a sentence is essential in determining the structure of propositional network at the sentential level. Besides the sentence syntax, more structures exist in a discourse, which is organized globally, usually according to certain conventional rhetorical formats. For example, a simplest story is often organized in the form of setting-complication-resolution, while an expository text may use such structures as a compare-and-contrast schema, a generalization-plus-examples schema, or other kinds of schemas.

van Dijk and Kintsch used the terms *microstructure* and *macrostructure* to differentiate the sentence-level structure from the discourse-level structure 0. According to them, microstructures and macrostructures together form the *textbase* of a text, which is the second level of mental representations for the text in Kintsch's CI model. The *textbase* is the semantic underpinning of a text. In the following analyses of the *textbase*, propositional structures provide convenient and workable tools to represent the meaning of a text.

Microstructure and Macrostructure

The microstructure of a text is the sentence-level structure, which can be represented by an atomic proposition or a complex proposition. This sentence-by-sentence information, or, the network of propositions, is the local structure of the text that represents the meaning conveyed in the text.

The term *macrostructure* is used to mean the global structure of the text which is derived from the microstructure and is a hierarchically ordered set of propositions 0. Macrostructure, the discourse-level structure, is thus the global organization of ideas into higher-order units, often according to conventional rhetoric formats. For example, a story may have many propositions, linked in a complex network. It has been mentioned above that the simplest stories at the macrostructure level are of the form of setting-complication-resolution. Nevertheless, a writer may tell his story in different ways, such as, in the form of a flashback, starting with the resolution and then filling in the setting and complication. This approach results in a very different macrostructure, but the microstructure may remain unchanged. Readers sometimes find the macrostructure directly signaled in a text, but often they must infer it from the text 0.

Thus, the textbase, composed by the microstructures and macrostructures, is "obtained from semantic analysis of a text and its rhetorical structure, as the author of the text intended it" 0. Briefly, the textbase is the semantic content of a text that is represented in memory.

The Situation Model

The textbase of a text is constituted by the propositions directly derived from a text. However, seldom readers understand a text purely depending on its textbase; usually they must supplement the information conveyed in a text "from their knowledge and experience (long-term memory) to achieve a personal interpretation of the text that is related to other information held in long-term memory" 0. Thus, the *situation model*, the third level of text representation in memory, is not the text itself that is represented, but the situation described in the text. Like the textbase, the situation model consists of its own microstructures and macrostructures, which are not necessarily the same as the micro- and macrostructures of the textbase because readers may integrate both locally and globally their own knowledge and beliefs with the information expressed in the text.

The construction of situation model greatly depends on readers' goals in reading a text, their interests, and available background knowledge, so situation models formed by different

readers may be widely different. Moreover, though texts are verbal and textbases are propositional structures, Kintsch believed that "situation models are not necessarily verbal" 0, because sometimes readers often turn to imagery to model the situation described by a text, such as the mental images of maps, diagrams, and pictures. However, at present researchers do not have good understanding of the integration of mental images with verbal information, and the consideration of individual preferences makes this understanding even harder.

In short, the situation model is a deeper level of comprehension. When a reader has deactivated irrelevant and inconsistent information and has absorbed important knowledge elements, a kind of situation model is got from the integrated textbase 0. Figure 1 is an example cited by Kintschto show how a person's prior knowledge elaborated information provided in a text, and integrated it in a situation model 0.

In Figure 1, two sentences taken from a text on heart disease are analyzed with their textbase and situation model. The textbase consists of three propositions (the NOT-GETRID proposition includes two modifiers) linked by sentence connectives. It is natural that not every reader will construct exactly the same textbase: Some reader might, for instance, neglect the modifier ENOUGH.

A situation model here is shown in the form of a graph. Most of the graph is based on the reader's knowledge about the circulatory system, rather than on the text directly. What is derived from the text itself is only the fact that there is a gap in the septal wall so that purple blood gets mixed with the red blood. Once again, different readers do not necessarily construct the same situation model, especially considering that the (correct) model is rather complex and requires a good understanding of the circulatory system that not every reader possesses.
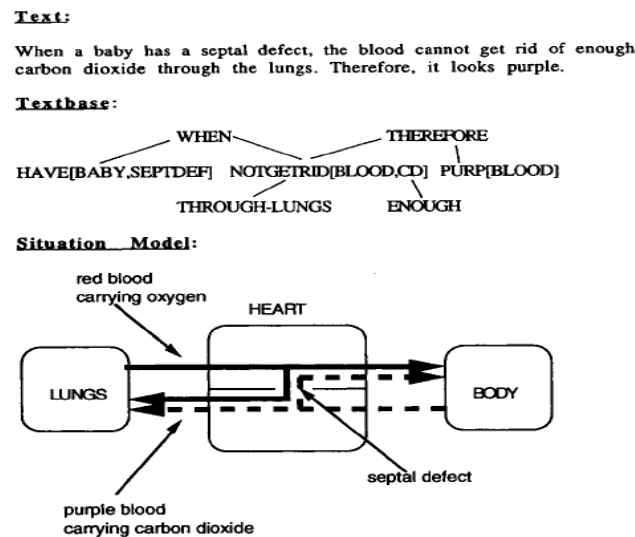

Figure 1: A two-sentence text fragment with its textbase and situation model.
Note. From "Text comprehension, memory, and learning," by W. Kintsch, 1994, *American Psychologist, 49*, P. 295.

An important characteristic of the situation model is that integrating a new situation model with the reader's prior knowledge is a prerequisite for the reader's capability of making knowledge acquired from texts usable in novel situations. Failing to link a new situation model with other relevant portions of readers' prior knowledge will result in encapsulated knowledge that is only available via specific episodic text memory, but is not part of their generally available knowledge base to be retrieved in new situations when the episodic retrieval cues are lacking. For example, if a EFL reader, who had read a dining scene in Hemingway's novel, *A Moveable Feast*, and also had been taught how to order dishes served at

a French restaurant, still felt at a loss when he/she did dine at a French restaurant for the first time, and were unable to order his/her meal because he/she did not see the same kinds of dishes learnt at his/her EFL class, then we can judge that the learner only held encapsulated knowledge about dining at a western-style restaurant. Therefore, the transfer of knowledge learned from texts to novel situations must depend on how active this new situation model is linked to semantic retrieval cues. If the menu at the French restaurant included the same dishes as described in Hemingway's *A Moveable Feast*, these semantic cues would help the EFL reader to retrieve what he/she had learned from his/her EFL class. This retrieval then would help him/her to order the same dishes successfully. This transfer of knowledge is not an automatic process, but requires the learner's strategic action and effort.

From the above discussion, we can see that surface structure, textbase, and situation model are the three levels of mental representations which play important roles in the reader's reading process, and which the reading teacher should consider while conducting reading comprehension instruction. Figure 2 demonstrates the relationships of these three levels of text representations. Figure 2 shows that texts are represented at different levels. The first level is surface structure, which represents the actual words and phrases of the text. The second is textbase, and the third is situation model, both of which are the propositional levels of text representations, and both of which are comprised by their own microstructures and macrostructures. The situation model is different from the textbase in that it is built when the information provided by a text is integrated into whatever prior knowledge there is available in readers' long-term memory until the mental representation of the whole text can be stored in their memory for later retrieval and application. Therefore, in instruction, what situation models students form concern reading teachers greatly when considering whether the students understand a text correctly and whether they are able to integrate the textual information with their own prior knowledge for future use.
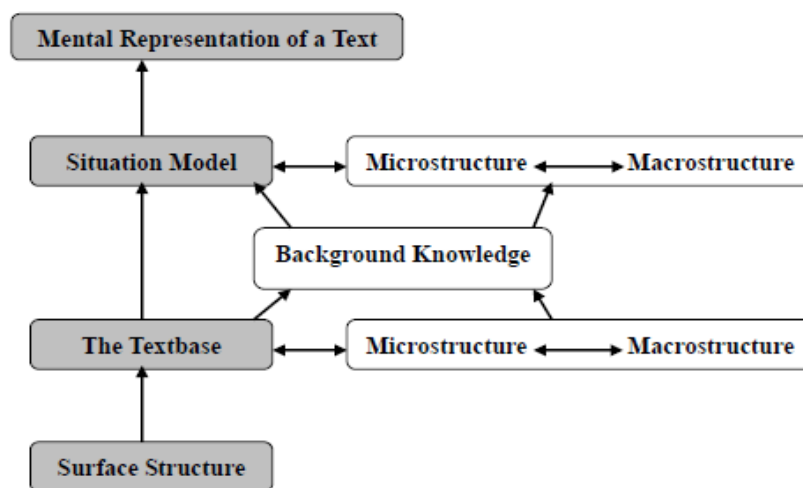

Figure 2: Relationship of the Three Levels of Mental Representations of a Text

To sum up, Kintsch's CI model of text comprehension describes a complete reading process from recognizing words and syntactic parsing of sentences in a text to understanding the underlying meaning and incorporating the meaning of the text in other present knowledge about the same topic until constructing a mental representation of the meaning conveyed in the text. Therefore, the CI model assumes that during their comprehension processes, readers build three different levels representations of a text: a surface structure that is a verbatim representation of the text, a textbase that involves semantic representations describing the meaning of the text, and a situation model that indicates the mental representation of a situation to which the text refers.

WHY IS KINTSCH'S CI MODEL AN APPROPRIATE THEORETICAL BASE FOR READING INSTRUCTION AT THE TERTIARY LEVEL?

Comprehension is considered as a paradigm for cognition in Kintsch's CI model of text comprehension, which puts forward that the reader's comprehension process involves creating a mental representation of information conveyed in a text within two major phases: a construction phase and an integration phase. This CI model shows the process of how disorderly mental representations constructed at an early stage are integrated into well-ordered ones at a later stage 0. For example, the CI model generates several plausible meanings of *grade* in *The grade was too steep* in parallel and only later, when a rich context is available, sorts out the right *slope* meaning of *grade*. Thus, according to Kintsch, understanding something starts from the construction phase, which activates much information, relevant and irrelevant, orderly and disorderly, consistent and contradictory in memory independent of indicated situations in a text. Then the reader's comprehension process proceeds to the integration phase, which de-activates the irrelevant, disorderly, and contradictory information and yields a context-specific and well-structured mental representation of the text through the use of one's knowledge of ideas or concepts mentioned in the text 0.

This bottom-up process is inconsistent with the top-down view of schema theory, according to which, a schema filters out incorrect interpretations at the very beginning. For the previous example, supporters of schema theory would claim that readers know that they are talking about a hill, and then assign the right *slope* meaning to *grade* 0. That is to say, the rules of a schema-based theory would choose the right construction from the beginning, while the production rules in the CI model are weak and do not prevent the wrong constructions from being formed. The construction stage in the CI model yields both irrelevant and relevant meanings of a word or inferences via weak production rules. Only the integration process of the CI model generates the construction of contextually correct meanings, and thus quickly deactivates contextually incorrect constructions. The bidirectional reading process implied in this CI model makes it suitable for researchers to explain readers' comprehension process when they come across unfamiliar reading materials, for which they do not have appropriate knowledge base to assist their reading, and, thus, are not equipped with relevant schema to help choose the right construction from the stump. This explains why the CI model is considered as more suitable than schema theory for researchers to explain readers' comprehension process when they come across unfamiliar reading materials. It is exactly the situation when post-secondary students read to learn from their content area textbooks for various academic courses. Most content area textbooks are written in the genre of expository text. Researchers now agree that generally students are less familiar with expository text than with narrative text, and most students take more efforts to comprehend expository text.

Thus, Kinstch's CI model would be a good resource for reading teachers to turn to when they try to understand their students' difficulties in comprehending expository text, and then to come up with ways to ease their struggles with expository text comprehension. In fact, in collaboration with van Dijk, Kintsch has been activating his research on models of text comprehension in the area of comprehension of non-narrative text [0-0, 0-00. Moreover, since the proposal of this CI model, it has been greatly rooted in as well as applied to studies and experiments of non-narrative text comprehension. The above arguments, thus, provide detailed supports to the suitability and reasonability for reading teachers to base their understanding of expository text comprehension on Kintsch's CI model.

Moreover, the reading process analyzed in Kintsch's CI model shows readers' application of all top-down and bottom-up reading strategies to understand a text, attaining the main ideas of the text to be stored in their long-term memory as knowledge and information for later retrieval. The process of using all reading strategies to get the main ideas of a text is actually a condensing process. This condensing process is analogous to a summarizing process when readers use summarizing strategies to get the brief of a text. Therefore, if reading teachers have Kintsch's CI model in their knowledge base to support their understanding of summarizing processes and their decision-making on summarizing instructions, their teaching would be not only theoretically based, but also systematically effective.

Last but not least, Kintsch' CI model is a particular research program and theory of text comprehension that is based on data from proficient readers, for whom comprehension is fluent, automatic, and easy as long as they read familiar materials. This model thus should be a proper theoretic base for comprehension instruction at the tertiary level since post-secondary students are expected to become mature readers.

Clearly, the views presented above indicate that it is reasonable and appropriate to adopt Kintsch's CI model to explain mature readers' expository text comprehension, and to be a theoretical anchor for summarizing strategies instruction. Therefore, it would be beneficial for college reading teachers to integrate Kintsch's CI model into their knowledge base of teaching summarizing strategies with expository text at the tertiary level.

HOW IS KINTSCH'S CI MODEL RELATED TO SUMMARIZATION?

The three levels of representation of a text proposed by Kintsch are essential for reading teachers to predict how a text is comprehended and remembered. To comprehend a text effectively and successfully by building a mental representation of the text in their memory, readers need to apply various reading comprehension strategies during the process of comprehension. Therefore, in addition to the analyses of the hierarchically organized mental representations of a text, Kintsch's CI model has also surveyed the major comprehension strategies involved in helping the readers build text representations.

What Are the Important Reading Strategies Derived from Kintsch's CI Model?

Kintsch's CI model is a hierarchically structured model of text comprehension, which describes how top-down processes guide comprehension and how bottom-up processes constrain it. Therefore, the interplay of both top-down and bottom-up processes determines the nature of mental representations at each level of analysis – from basic linguistic processing to knowledge integration. The processes distinguished by this model belong to two major categories –microstructural processes, *low* in hierarchy, and macrostructural processes, *high* in hierarchy. These multi-level representations and multi-level processes surely require a "flexible", "dynamic", "multilevel", and "strategic" system to accomplish. Van Dijk and Kintsch discussed all "strategies that are used at the various levels of discourse processing, starting with the construction of a propositional representation for a text, and ending with its macrostructure" 0.

Propositional strategies and *local coherence strategies* represent types of strategies for lower processes. With propositional strategies, readers are assumed to build up a propositional level of text representation. For this purpose, they have to decode the meaning of words, to disambiguate word meanings within a sentence context, and to combine word meanings into elementary propositions. *Local coherence strategies* associate elementary propositions to the secondary level of propositional representation – the textbase via simple mechanisms such as argument overlap or coreferentiality of expressions. While these processes mainly rely on

basic linguistic knowledge, the higher level of strategies mentioned in the following make a stronger use of world knowledge.

Macropropositional strategies generate macropropositions that are representations of the main statements or topic sentences of a text, by deletion, generalization, or construction. The efficiency of macropropositional strategies heavily depends on the availability of domain specific knowledge. Moreover, van Dijk and Kintsch also discussed about *schematic strategies* and *rhetorical strategies* as strategies high in hierarchy 0. *Schematic strategies* make use of super structures, that is, knowledge about typical structural properties of certain kinds of texts (for example, letters, expository texts, or fairy tales), while *rhetorical strategies* in general refer to pragmatically relevant knowledge, such as knowledge about the author, his or her intentions, and the discourse context.

All these strategies used in the complex discourse comprehension process actually aim at reducing the complexity of meaning-making, starting from comprehending a text word by word and sentence by sentence to forming a mental representation of the text so that the meaning of the text as a whole is to be made and the gist of its meaning is to be stored in one's working memory first and then long-term memory for later retrieval. The whole process of using all strategies in text comprehension is in fact a process of condensing. The condensing procedure is like peeling off layers and layers of onion until the core is reached if the onion has a core. This process of condensing is analogous to the process of summarizing. At this, it is now obvious that reading teachers' knowledge of summarizing and summarizing instruction can be enriched with their understanding of Kintsch's CI model of text comprehension.

In fact, some pioneering research on summarizing strategies, such as Brown and Day's studies 0, has originated from *macrostructure strategies* that generate the macrostructures as defined in Kintsch's CI model. Macrostructure is a term used by van Dijk 0 and elaborated in van Dijk and Kintsch 0. Kintsch defined it as "a hierarchically ordered set of propositions representing the global structure of the text that is derived from the microstructure" 0. Thus, macrostructures are represented by macropropositions, obtained by applying macrostructure strategies, namely, the above stated macropropositional strategies. Kintsch even affirmed that "an ideal summary is (or should be) a text expressing the macrostructure" 0. Then how are the macrostructure strategies in Kintsch's CI model related to summarization?

How Are the Macrostructure Strategies in Kintsch's CI Model Related to Summarization?

As said, Kintsch's CI model, modeling how text representations are constructed and integrated with the reader's knowledge, is actually a complete account of the reading process that implies and specifies what strategy is applied and how it interacts with input from both the text and other prior knowledge that the reader may have about the topic. As an important part of the reading process in Kintsch's CI model, the macrostructural process, namely, the use of macrostructural strategies to produce the macrostructures of a text is the key part that is closely related to the reading strategies commonly known as summarizing strategies. The following explores the nature of macrostructural strategies and their products— macrostructures, and their relations to summarizing strategies that reading teachers could include into their knowledge base for summarizing strategies instruction.

Macrostructures and Summary Statements

The macrostructures produced during the macrostructural processes of comprehending a text are mental representations of the text at a global level. When macrostructures simply mirror

the structures of a text from which they were derived, they are considered as the textbase of the text, and when they reflect readers' own prior knowledge structures to varying degrees, they carry the nature of a situation model. Kintsch pointed out that "macropropositions put into words are summary statements at different levels of generality" 0. Macropropostions are generated via macroprocessing predicted on the basis of microprocessing. The formation of a memory representation of the gist of a text is then based on the redundancy of proposition occurrence, and the subsequent overlap of arguments. Thus, salient and structurally important propositions are more likely to be recalled because the comprehension process tends to be more concerned with them than with structurally unimportant propositions 0. Then, the macropropositions, or summary statements of different sections of a text, reflect the important propositions in the text.

Summarizing is thus closely related to and implied in Kintsch's macrostructure strategies applied to the formation of macrostructures – abstract semantic descriptions of the global content of a discourse. Summarizing here is then considered as a kind of comprehension process achieved via the application of a set of macrostructure strategies, which is generalized as summarizing strategies in the later part of this article.
As said previously, macrostructures are semantic units that must consist of propositions, namely, *macropropositions* 00.

A macroproposition is derived bottom-up from the sententially expressed propositions of a discourse. Therefore, the definition of macrostructures need to be based on the meanings of the sentences of a discourse, which are summary statements either presented directly in a text or generated by readers according to their own understanding.

Macrostructures and Macrorules
Then, how can we derive the meaning of a text from the lower level of propositions, and relate them to the higher level ones? According van Dijk and Kintsch, as mental representations of text at a global level, macrostructures are defined by means of *macrorules* 0. Macrorules are "semantic mapping rules: they relate proposition sequences at a lower level with proposition sequences at a higher level, and thus derive the global meaning of an episode or a whole discourse from the local, sentential meaning of the discourse" 0. Macrorules are recursive in the sense that they may apply over and over again to derive a still higher level macrostructure(s) given a sequence of macropropositions. Therefore, the notion of macrostructure is relative, that is, the macrostructure of a discourse is a hierarchical structure, consisting of several levels of propositions. When we express the generated macrostructures in sentences, we get summary statements at different levels of generality, which indicate what the different sections of a text are about.

Macrorules, as defined in van Dijk and Kintsch's theory of discourse, consist of deletion, generalization, and construction 0.

The three macrorules are illustrated in the following:
DELETION: Given a sequence of propositions, delete each proposition that is not an interpretation condition (e.g., a presupposition) for another proposition in the sequence.

GENERALIZATION: Given a sequence of propositions, substitute the sequence by a proposition that is entailed by each of the propositions of the sequence.

CONSTRUCTION: Given a sequence of propositions, replace it by a proposition that is entailed by the joint set of propositions of the sequence. 0

The operation of macrorules helps explain the procedures of generating macropropositions, and thus derives macrostructures. Though Kintsch also stated that, "the macrorules merely help us to explain what can be done, but they are not algorithms or computational procedures that generate macropropositions from a text automatically" 0, these macrorules have become the base for other researchers to design instruction procedures in their experimental research on the reading strategies of summarization. Namely, these macrorules have been generated into summarizing strategies in reading strategies instruction.

Macrostructure Derivation and Summarizing
From the cognitive perspective, the macrostructure of a text is the conceptual global meaning assigned to it. This assignment is based on textually manifested surface meaning structures on the one hand and on various types of knowledge or other purely cognitive structures on the other 0. Summarizing during normal reading is thus related to how language users actually infer macrostructure. Such derivation of macrostructure of a discourse may be approached both contextually and textually depending on the role of prior knowledge in the processing of getting text summarizations. This aspect distinguishes author-based summary from reader-based summary. Author-based summary is more textually-derived, while reader-based summary more contextually-derived. The efficiency of producing both kinds of summary heavily depends on the availability of readers' domain-specific knowledge.

The application of summarizing strategies during students' reading process facilitates the recurrence of important information in a text, and the subsequent assembly of high-importance propositions into macrostructures to represent a gist of the text. Hence, summarizing strategies promote students' processing of high-importance information, and help them memorize and learn from text. Via the operation of such macrorules as deletion, generalization, and construction, Kintsch's CI model has revealed the covert cognitive performance of generative summarizing processes. When the reader applies summarizing strategies, propositions of high importance are recalled from memory more frequently, and are recycled more often as the reading process starts and proceeds. This recalling and recycling process, thus, enhances the probability of developing connections or links between new important information and readers' prior knowledge in memory.

At this, it is now clear that summarizing is an important reading process to assist readers' learning from text, and memorizing important information learned. Here summarizing can also be regarded as a general term for a series of summarizing strategies. Being able to explain summarizing strategies within Kintsch's CI model of text comprehension then should be part of reading teachers' knowledge of teaching those strategies in their classrooms.

HOW DOES KINTSCH'S CI MODEL CONTRIBURE TO THE COMPREHENSION OF EXPOSITORY TEXT?
As previously mentioned, Kintsch's CI model is a particular research program and theory of text comprehension based on data from proficient readers, for whom comprehension is fluent, automatic, and easy as long as they read familiar material. It is thus appropriate for college reading teachers to base their instruction of reading strategies on Kintsch's CI model. Specifically, Kintsch's CI model makes contributions to the comprehension of expository text in the way of providing explanations to the process of students' understanding and learning from expository text, and also to the process of determining important information in a text unfamiliar to them.

Explaining the Process of Students' Understanding and Learning from Expository Text
Most of the readings that post-secondary students have to accomplish for several content area subjects each week are expository texts. As also stated earlier, researchers have agreed upon the fact that expository text is more difficult for most readers because it has different requirements from narrative in terms of reading strategy application and prior knowledge activation. The justification of the idea that Kintsch' CI model is suitable for the explanation of expository text comprehension lies in the understanding of the essential elements that cause the difficulties for post-secondary students to comprehend content area readings, and the key points that might ease the difficulties for them.

Friend pointed out that content area reading is quite different from reading for one's own pleasure because college students have to understand and remember new information in order to learn, and also because what should be learned has been decided by others for each content area 0. This nature and demand of reading for college study has determined the importance of memory for college students. Then what is the best model of memory for post-secondary students to learn from reading? What are the effective ways for them to learn from expository text?

The answers are provided by information processing research 0. Memory for the content area reading is called semantic memory, which is defined by Raynolds, Sinatra, and Jetton 0 as a network of related ideas grouped into interlinked concepts. To strengthen the semantic memory, students need to connect ideas in a text and organize the connections. Each time an idea is used, that idea and the ideas associated with it are alerted, or primed (a term used in information processing). The more an idea is primed, the stronger the memory, and the better an idea can be recalled and applied 0. Thus, when reading, students should put together important ideas in a text, and organize them to get a gist of the text. To organize important information in a text, students actually generate macrostructures, the mental representations of the text, which can then be expressed in summary statements. A summary constructed in this way is author-based, which generally represents what has explained earlier the textbase of a text in Kintsch's CI model.

Moreover, to organize new information in a text, students must also draw on their prior knowledge and pay attention to the nature of relationships among the known and the unknown. Using one's prior knowledge of the topic to organize the new information in a text, students make connections among related concepts. When new information is linked with the network of prior ideas, it will be recalled more easily and used more adaptively later. Such a summary, constructed to link new information with the readers' background knowledge, is considered as a reader-based summary, which is thus related to the previously mentioned situation model of a text in Kintsch's CI model.

A summary, no matter author-based or reader-based, thus requires transforming long detailed passages into concise statements to represent the gist of the information. A clear-cut boundary for author-based and reader-based summaries is too ideal to be expected and to be true. Most summaries must be constructed with the application of the reader's prior knowledge in comprehending a text at various degrees. Thus, summarizing is a deep process of priming concepts that are related to new information, and are activated by one's prior knowledge as well. In this way, summarizing helps post-secondary students with their learning of new knowledge, and improves their recall and application of what they have learned.

Obviously, Kintsch's CI model contributes to the explanation of how post-secondary students may learn from content area reading. These contributions are particularly implied in the

application of summarizing strategies for students' comprehension of expository text. The above arguments also help justify the idea conveyed in this article that college teachers' understanding and knowledge of summarizing strategies instruction with expository text can be enriched by their understanding of Kintsch's CI model. Next section then continues to explore how Kintsch's CI model provides explanation for the process of determining important information in a text unfamiliar to students.

Explaining the Process of Determining Important Information in a Text Unfamiliar to Students

The reasonability of Kintsch's CI model for the theoretical explanation of expository text comprehension lies in the reading process conveyed in this model. As said, content area information from school study is stored in semantic memory. This semantic memory differs from episodic memory where mostly personal experiences are stored. Semantic and episodic memories have different cues to indicate importance. In semantic memory, the essential cues to text-based importance are *repeated reference* and *generalization* 00, while "novelty, emotion, and drama are cues to importance in episodic memory" 0. Actually, novelty, emotion, and drama are labeled as seductive details for expository text comprehension since they distract students' attention from important ideas that are usually more abstract 0. Therefore, when judging what is important to the author during their reading of content area materials, students depend on the *repeated reference* and *generalization* in a text instead of their personal experiences and idiosyncratic personal values, which are usually more effective for reading narratives. The application of *repeated reference* and *generalization* in reading has been integrated by Friend 0 into her teaching of summarization as a content area reading strategy to college students.

The process of determining the importance during expository text comprehension is analogous to the macropropositional processing proposed in Kintsch's CI model, as discussed in the above sections. Like the macropropositonal processing, this importance determination process is thus quite bottom-up: the prior integration of higher order concepts and their relations (macrostructure) is on the basis of the interpretation of the subordinate, low-importance constituents temporary stored in the reader's working memory. This way of using information of high importance is essential when the text is unfamiliar to readers. Such is the case when expository texts in college content areas are new to most post-secondary students, they cannot readily access that high-importance information. That is to say, when the readers have little in the way of a guiding schema during expository text comprehension, this bottom-up macropropositional processing is more appropriate for them to approach their reading, and to obtain the macrostructures of a text mentally.

Moreover, Kintsch's CI model of text comprehension regards text structure as an essential cue, effective at the macroprocessing level for readers to identify and keep the important information in their summaries and recall. Many researchers 00 have suggested that students' insensitivity to the text structure of expository text is a major contributing factor that causes trouble for them in getting a gist of an expository text 0. At this, the nature of expository text revealed mainly in its text structure is an important factor that influences summarizing instruction.

CONCLUSION

Kintsch's CI model is an appropriate reading model that systematically supports the application of comprehension strategies at higher level of reading process. The CI model has also backed up the explanation of expository text comprehension, which is especially important for us to understand how post-secondary students learn from reading content area

materials, mostly falling into the genre of expository text. Therefore, reading teachers who are expected to teach summarizing strategies and expository text comprehension effectively at the tertiary level could reasonably take Kintsch's CI model as part of the theoretical base for summarizing strategies instruction with expository text. Further research is thus expected to test the effectiveness of Kintsch's CI model in supporting college reading teachers' teaching of summarizing strategies and expository text comprehension at different educational settings.

References

National Center for Research on Teacher Education (1988). Teacher education and learning to teach: A research agenda. *Journal of Teacher Education, 32*(6), 27-32.

Shulman, L. S. (1986). Those who understand: Knowledge growth in teaching. *Educational Researcher, 15*, 4-14.

Shulman, L. S. (1987). Knowledge and teaching: Foundations of the new reform. *Harvard Educational View, 57*, 1-22.

Kintsch, W. (1998). *Comprehension: A paradigm for cognition*. New York, NY: Cambridge University Press.

van Dijk, T. A., & Kintsch, W. (1983). *Strategies of discourse comprehension*. New York: Academic Press, Inc.

Kintsch, W. (2004). The Construction-Integration model of text comprehension and its implication. In R. Ruddell & N. Unrau (Eds.), *Theoretical models and processes of reading* (5th ed. ; pp. 1270-1362). Newark, DE: International Reading Association.

Kintsch, W. (1988). The role of knowledge in discourse comprehension: A Construction-Integration Model. *Psychological Review, 95*, 163-182.

Kintsch, W., & van Dijk, T. A. (1978). Toward a model of text comprehension and production. *Psychological Review, 85*, 363-394.

van Dijk, T. A. (1980). *Macrostructures: An interdisciplinary study of global structures in discourse, interaction, and cognition*. Hillsdale, NJ: Erlbaum.

Kintsch, W. (1994). Text comprehension, memory, and learning. *American Psychologist, 49*, 294-303.

Kintsch, W. (1974). *The representation of meaning in memory*. Hillsdale, NJ: Lawrence Erlbaum Associates.

Kintsch, W. (1992). How readers construct situation models for stories: The role of syntactic cues and causal inferences. In A. F. Healy, S. M. Kosslyn, & R. M. Shiffrin (Eds.), *From learning theory to connectionist theory: Essays in honor of William K. Estes* (Vol. II, pp.261-278). Hillsdale, NJ: Lawrence Erlbaum Associates.

Brown, A. L., & Day, J. D. (1983). Macrorules for summarization texts: The development of expertise. *Journal of Verbal Learning and Verbal Behavior, 22*, 1-14.

Friend, R. (2000). Teaching summarization as a content area reading strategy. *Journal of Adolescent & Adult Literacy, 44*, 320-329.

Reynolds, R. E., Sinatra, G. M., & Jetton, T. L. (1996). Views of knowledge acquisition and representation: A continuum from experience centered to mind centered. *Educational Psychology, 31*, 93-104.

Morton, E. V., & Hosey, J. G. (1984). *Reading and studying for success*. Minneapolis, MN: Burgess International Group.

Garner, R., Gillingham, M. G., & White, S. (1989). Effects of "seductive details" on macroprocessing and microprocessing in adults and children. *Cognition and Instruction, 6* (1), 41-57.

Dymock, S. J. (1998). A comparison study of the effects of text structure training, reading practice, and guided reading on reading comprehension. In T. Shanahan & F. V. Rodriguez-Brown (Eds.), *47th yearbook of the National Reading Conference* (pp. 90-102). Chicago: National Reading Conference.

Dymock, S. J., & Nicholson, T. (1999). *Reading comprehension: What is it? How do you teach it?* Wellington, New Zealand: New Zealand Council of Educational Research.

Pearson, P. D., & Duke, N. K. (2002). Comprehension instruction in the primary grades. In C. C. Block & M. Pressley (Eds.), *Comprehension instruction: Research-based best practices* (pp. 247-258). New York: Guilford.

Dymock, S. J. (2005). Teaching expository text structure awareness. *The Reading Teacher, 59*, 177-181.

[1].

The Kola Saami Languages: Contemporary Sociolinguistic Situation

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ABSTRACT

This paper shows that the Kildin Saami language belongs to the group of critically endangered languages, which means that the youngest speakers are grand-parents and older. Family 'linguistic' connections are completely lost, the language is transmitted only by 'academics' (language courses) and used partially. To preserve the Kildin Saami language only the following can be done: change the status of the language through the formation of a language policy and create new opportunities for language functioning. My research is based on the framework that contemporary sociolinguistic situation should be studied from the following perspectives: number of native speakers, the language environment, language revitalization, the state's language policy, prestige of the language, existence of written forms of the language, and others.

Keywords: Indigenous minorities of the North, endangered languages, Saami languages, contemporary sociolinguistic situation.

INTRODUCTION

The Saami languages belong to the Finno-Ugric part of the Uralic family of languages and can be divided into western and eastern groups: the Western Saami languages (South Saami, Ume Saami, Pite Saami, Lule Saami, North Saami) and the Eastern Saami languages (Inari Saami, Skolt Saami, Akkala Saami, Kildin Saami, Ter Saami). The present Eastern Saami languages spoken in Russia can be divided into two groups: the mainland group (Skolt Saami, Akkala Saami) and the peninsula group (Kildin Saami, Ter Saami) [27]. The Kildin Saami language is the biggest group according on the number of speakers and it is based on the Kola Saami alphabet. The Saami, living in the northern part of Scandinavia and Finland and in the Kola Peninsula (Russia), are the only indigenous people in the European Union (EU) to have their own language, culture, means of livelihood and identity. The history of the Saami in the areas occupied by them dates back to the time prior to the formation of the present states in the region [32]. The Russian Saami people live on the Kola Peninsula. The term 'Kola Peninsula' is often used as a synonym for the Russian administrative area: the Murmansk region ('oblastj'). That is why the Russian Saami people are called the Kola Saami and the present Eastern Saami languages spoken in Russia are called the Kola Saami languages.

STRUCTURE AND ORGANIZATION OF THE PAPER

I organized this paper into two sections. The first section briefly presents the history of the study of the Kola Saami languages. The second section presents the results of my research on the Kola Saami languages, the current sociolinguistic situation from different perspectives. Analyzing these factors, I conclude that the situation with the Kola Saami languages can be regarded as critically dangerous.

LITERATURE REVIEW

Such encyclopedic works as 'The Saami. A cultural Encyclopaedia' [32] and Pekka Sammallahti's 'The Saami Languages. An Introduction' [27] chart and systematize a wide range of information about the Saami culture and the Saami languages.

The history of the Saami languages is presented in the monograph of the Finnish scientist Mikko Korhonen 'Introduction to the history of the Saami language' [21]. The study of the Kola Saami languages has an important part in the Russian scientist's works. The study makes a serious contribution to the research on this indigenous people. The Kildin Saami language is described in details in the monograph and in the numerous articles by the Russian scientist Georgij Kert 'The Saami language' [18], the prominent researcher of the Saami language research in USSR and Russia, and in Galina Kostina's doctoral thesis work on the vowel system of the Kildin Saami language [22].

The description of the Akkala Saami language is presented in the monograph of the Russian scientist Pekka Zajkov 'The Akkala Saami language (phonological and morphological study)'[35]. The Ter Saami language, its phonology and morphological categories—noun and verb—is described in Sergej Tereshkin's doctoral thesis work [31].

There are dictionaries of the Kola Saami languages: the descriptive dialect dictionary by Toivo Itkonen [7], the dictionary edited by Rimma Kuruch (Kildin-Russian) [1], published by Georgij Kert (Kildin-Russian-Kildin) (Kert 1986) and Pekka Sammallahti and Anastassia Chvorostuchina (Kildin-North Saami-Kildin) (1991). Another Saami-Russian and Russian-Saami dictionary, created in 2009 with updates through the present, is the result of the work at Giellatekno, Centre for Saami language technology, at the Arctic University of Norway (http://giellatekno.uit.no/).

A great contribution to the research of the Kola Saami languages is the works of Elisabeth Scheller, a researcher from the Arctic University of Norway. Her publications state that all the four Kola Saami languages are seriously endangered by a language shift from Saami to Russian. But a language revitalisation process has started particularly in the Kildin Saami language community in Lovozero, where most of the active and potential Kildin Saami language users live today. Lovozero appears to have good conditions that provide a relatively stable base for a language revitalisation and reintroduction of Kildin Saami as an everyday language of communication. However, today the Kildin Saami language community does not use all its resources effectively enough. Elisabeth Scheller's study was partly carried out within the framework of the project The Kola Saami Documentation Project (KSDP). The aim of the Kola Saami Documentation Project is to provide comprehensive linguistic, sociolinguistic and ethnographic documentation of the endangered Saami languages of Russia. The primary goal of the project to systematically record, transcribe, translate and archive the broadest possible variety of spoken language data from the Kola Saami languages. In addition to purely linguistic documentation, Saami language sociology and sociolinguistics are being evaluated with the help of questionnaires and interviews [25].

In my works I have analyzed how 'The European Charter for Regional or Minority Languages' provisions are realized in Russia in relation to the Kola Saami languages [8]. I tried to show that in connection to the languages of the indigenous minorities ('dying' languages), orientation to cumulative language function is more perspective than communicative [12]. In the Russian monolingual environment there is no straight and unambiguous dependence between the level of speaking the Saami language and internal self-identification [11]. I have found that the Saamis recognizing the Saami language as their native language do not speak

this language and do not want to study it [10]. My overview of the Kildin Saami language teaching in the Murmansk region at present and in historical perspective shows that the lack of language environment is the main problem for preservation and developing of the Kola Saami languages. I propose that developing a distance learning system for Kola Saami languages for the dispersedly living Saami population of the Kola Peninsula can solve the problem of studying the language [9, 16]. As a result of my field research with my doctoral students, the group of Saami traditional trade lexicon and lexicon of spiritual Saami culture was collected and analyzed [16, 13, 14, 15].

The United Nations World Conference on Indigenous Peoples, September 22-23, 2014, will sum up the results of the Second international decade of indigenous people of the world. In anticipation of the Post-2015 Development Agenda, it is important to define prospects and forecasts of development of such indigenous minorities of the North, as the Kola Saami.

ARTICLE FOCUS

According to the interactive atlas of endangered languages, published by UNESCO in 2009, the Kildin Saami language belongs to the group of severely endangered languages, which means that 'language is spoken by grandparents and older generations; while the parent generation may understand it, they do not speak it to children or among themselves (http://www.unesco.org/culture/languages-atlas/index.php). As my research shows, this definition does not correspond to the real situation with the Kola Saami languages.

My opinion is that the Kildin Saami language now belongs to the group of critically endangered languages, which means that the youngest speakers are grandparents and even older people, and they speak the language partially and infrequently (http://www.unesco.org/new/en/culture/themes/endangered-languages/atlas-of-languages-in-danger/). Family 'linguistic' connections are completely lost, which means that the older generations do not speak Saami with the younger generations at home. The Kildin Saami language is transmitted only by 'academics' (language course) and used partially. Functioning of the Kildin Saami language is limited by the personal spheres. Only an 'external' approach can be used to preserve the Kildin Saami language, i.e., we need to change the status of the language through the formation of a language policy and create new opportunities for language functioning.

RESEARCH SUBJECT AND APPROACHES

In my article I examine the contemporary sociolinguistic situation that evolved itself with the Kola Saami languages. Two main questions motivated my study. First, I wanted to know what is the 'degree' of the Kildin Saami language vitality? What kind of linguistic and social factors are involved? What kind of additional factors, such as Europe integration, are important? Secondly, I was interested in resources of the Kildin Saami language, the way to estimate its potential and to use these resources.

I base my research on the framework that the contemporary sociolinguistic situation should be studied from the following perspectives: number of native speakers, the language environment (the neighboring languages), traditional Saami trades (Saami sources of livelihood), revitalization of the language, cross-ethnic marriages (between the Saami and other nationalities), the state's language policy, prestige of the language, existence of written forms of the language, and the role of mass media [34].

RESEARCH METHODS

The research was carried out by methods of Sociolinguistics: a field study, questionnaires, written surveys and interviews, expert survey and biographical approach (case study used to examine contemporary real-life). In my research I used the Saami archives and libraries of the Murmansk region. The method of the language situation modeling was used to examine its state and dynamics.

RESULTS

Quantity of native speakers. According to the 2010 census data, 1,771 saamis live in Russia (787–urban population, 984–rural population), 1,599 out of them live in the Murmansk region. the number of saamis in russia rose from 1,615 in 1989 to 1,769 in 2002 and 1,771 in 2010 [24]. Thus, compared to the 2002 data, the number of saamis increased by 0.12%, compared to the 1989 census–by 9%. it is important to emphasize that the average annual saami population growth from the 18th century during 147 years (1782-1929) was 4%, over these years the number of kola saamis grew by 47% [2] (Fig. 1).
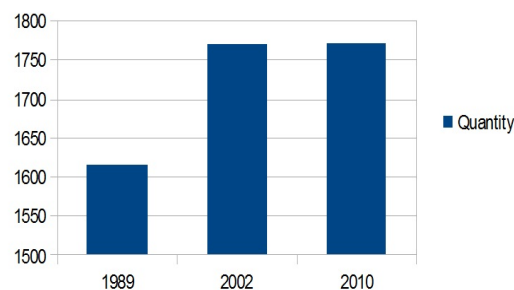

Figure 1: Evolution of The Saamis Population

The dynamics of the number of indigenous minorities in the Murmansk region (including the Saamis) after the year of 1989 is evident. Increase in the quantity is connected to the factor of national self-identity: more and more representatives of different ethnic groups identify themselves as part of their ethnic group and declare their nationality. A significant role in the quantity increase of the Saamis belongs to the economic factor: after Gorbachev's *perestrojka* many more possibilities for increased cooperation between the Saamis from Finland, Norway and Sweden and the Kola Saamis existed. However, indigenous peoples in the Soviet Union also had their benefits, e.g., no exams to enter a university.

According to the 2010 census data, the age distribution for the Saamis is as follows: 20-24 years old–154, 0-4 and 10-14 years old–139 people each, 35-39 years old–128, 30-34 years old–126, 50-54 years old–112, 25-29 years old–109, 55-59 years old–108, 40-44 years old–104 [24] (Fig. 2).
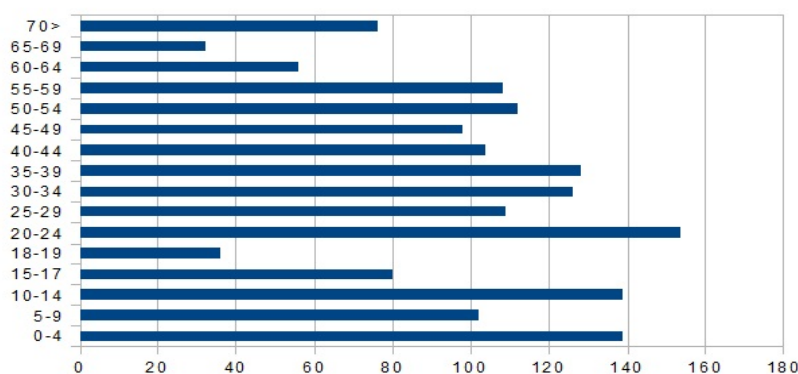

Figure 2: Age Distribution for the Saamis (2010)

In terms of the education level, most of the Saamis have secondary or incomplete secondary education (252 and 285 respectively). Two people identified themselves as illiterate [24].

Of the people living in the Murmansk region, 315 speak the Kola Saami language: 18 of them are Russians, 7 are Komi, 1 is German and 279 are Saamis [25]. Thus, 15.7% of the Saamis speak their mother tongue.

The Kildin Saami language is spoken by 700 speakers, which is found to be rather optimistic. According to Elisabeth Scheller, we are likely to have 100 active speakers of the Kildin Saami language, these are people fluent in the Saami language and using it on different levels [29]. They form 5% of the Saamis living in Russia in 2010. Around 200 speakers are regarded as passive speakers of the Kildin Saami language: they understand everything or pretty much everything, they are able to speak the Kildin Saami, but do not speak it for various reasons [29].

The Saami population lives in the territory of the Kola Peninsula dispersedly, the areas officially densely inhabited by them in line with the Resolution of the Russian Federation Government dated 11.01.1993 № 22 'On the List of Areas Inhabited by Minorities of the North' are the Lovozersky, Kovdorsky and Kolsky areas of the Murmansk region. According to the 2010 census data, 873 of the Saamis live in the Lovozersky area, 112 in the Kovdorsky area and 201 in the Kolsky. Some of the Saami people live in the cities of the Murmansk region: Murmansk–139, Kola–83, Apatity–53, Olenegorsk–46, Monchegorsk–43, etc. [25]. A significant role in the Saami communication belongs to the geopolitical factor: the areas densely populated by them are located in a distance from the regional center. The insignificantly developed transport infrastructure and the high cost of transportation services is a great obstacle for the indigenous people to study in the regional center (Murmansk or other cities).

Language Environment. According to 2010 census data, Russians still remain the most numerous nationality in the Murmansk Region (89%). The Ukrainians make 4.8%, the Byelorussians–1.7%, the Tatars–0.8%, the Azerbaijanians–0.5%, the Komi–0.2%, 0.1% of them are the Komi-Izhem, the Mordovians–0.2%, the Saamis–0.2%, and the Karelians–0.2% of the population [24]. In 2002 there were 1,995 representatives of indigenous minorities registered in the Murmansk Region, which is 0.19% of the total population: the Kets (the Ostyaks with the Ket Language), Koryaks, Kumandins, Mansi, Nanais, Nenets, Saamis, Ulchis, Khanty, Chuvans, Chukchi, Shortsi, Evenkis (Tungus with the Evenki Language), Evens (Tungus with the Even Language), Yukagirs. The largest group is the Saami which in 2002 made 88.6% of total quantity of indigenous minorities of the North. The Nenets–8.1%, the Evenkis–0.6%, the Khanty and Shortsi each make the 0.5% of total quantity of the indigenous smaller people of the North, the Mansi–0.3%, the Kumandins–0.25%, the Kets and Chukchi–0.2% each, the Evens–0.15%, the Koryaks–0.1%, the Nanais, Ulchis, Chuvans and Yukagirs–0.05% each.

The Saamis on the Kola Peninsula have always been surrounded by a Russian-speaking environment. According to Ivan Ushakov, the 1785 surveys showed that 100% of the male Saamis and 70% of the female Saamis spoke Russian (colloquial Russian). The Lapps (in the old tradition the Saamis were called the Lapps) knew many Russian songs, tales, and proverbs. Despite the fact that the Saamis took much from the Russians, they continued to have their native language and unique culture [33].

According to the 1995 data, the majority of Saami respondents living in the village Krasnoshchelye and the village Revda named Russian as their native language (85% and 75% respectively). 92% of Saami respondents said that the school children should be taught in the Saami language and in the Russian language.

In terms of speaking Russian, the quantity of the Saamis is insignificantly increasing over the past few years: 2002–99.8% of the Saamis, 2010–99.9%. Only one person living in the village does not speak Russian according to the 2010 census data. In general, we can say that all the Saamis speak the Russian language. The Russian language replaced the Kola Saami languages in all spheres (formal and informal).

Saami Sources of Livelihood (Traditional Trades). Saami sources of livelihood are reindeer husbandry, fishing, hunting, and handcrafts.

Reindeer herding is considered the core of the Saami ethnographic identity. It is closely connected to seasonal migrations and the unique social organization, the so-called *siida* ('Lapp village, reindeer-herding community'), which has common sources of livelihood and common usufruct territories [32]

The Saami sources of livelihood are based on respect for nature. The Saamis never took more fish or game than necessary for the needs of the family. These factors formed the Saami ethnographic identity.

The traditional livelihood of the Kola Saamis was based on a semi-nomadic hunting economy. The rhythm of life was determined by the working year. The cyclic Saami traditional economic system existed until the beginning of the twentieth century. This system was destroyed during the 1930s 'collectivization' which the Soviet regime called 'way-of-life pastoralism', forcing families to live in villages [32].

Nature and Saami traditional trades were seriously affected by the industrial development ('industrialization'). The Saamis, according to Georgij Kert, have been isolated from their natural environment: the Saami small unprofitable sectors of the economy were combined into state collectives where the property belonged to the state and did not bring sufficient income to the Saamis.
In the 2000s in the wave of the *perestrojka* reindeer husbandry revived with the move to a free market economy. Some hope emerged that the Saami traditional economic activity would remain and develop.

According to the report of the Federal Service for State Registration, Cadastre and Cartography in the Murmansk region 2011 and 2012, there are two reindeer husbandry cooperatives called *Tundra* and *Olenevod*, clan community (obshchina) *Piras*, *Chentembalj* (from the Lovozersky area) and kolkhoz *Belomorskij ribak* (from the Tersky area) (http://to51.rosreestr.ru). In 2013 the target program 'Reindeer husbandry in the Murmansk region 2012-2015' was accepted. This means that more than 80% of the reindeers are concentrated in the two reindeer husbandry cooperatives Tundra and Olenevod. In recent years the quantity of reindeer has decreased significantly (http:// agro.gov-murman.ru). According to the Murmansk Region Government, in 2008 the quantity of reindeer in the Murmansk region was approximately 66,000 heads. By 2011 the herd had thinned to around 50,000 and by 2013 the number was down to 42,000 head (http://www.rg.ru/2013/08/20/reg-szfo/saami.html).

The Saami and non-Saami youth can learn reindeer husbandry at the state educational institution of initial vocational education 'Vocational School № 26' in Lovozero since 1974.

Language Revitalization. The language transfer from parent generation to the children's generation is interrupted, because the Saamis do not speak their own language in the families. Several generations of the Kola Saami lost their language. It is frequent now that nobody talks to a child in the native language. Even if the family has members of the older generation who speak the language, often they live separately, and therefore are not able to constantly communicate with their grandchildren. For example, the famous translator, the Kildin Saami language teacher, the creator of 'Saami ABC', social activist Alexandra Antonova lives in Lovozero. Her granddaughter Veronica lives in another city (Murmansk) and does not speak the Saami language.

Academic reproduction path of the Saami language is represented by two periods: before and after *perestrojka* 1991.

In the Soviet times, before *perestrojka* 1991 everything was determined by the state and the reproduction of the Kildin Saami language made some progress. According to Alexandra Antonova, in the 1970s 50% of the Saami children spoke their mother tongue. The Ministry of Education of the Russian Federation decided that the Saami children should learn their mother tongue at school as a compulsory discipline. At this time municipal comprehensive boarding school 'Lovozero Boarding School of Secondary (Full) General Education' received the 'national' status. Since 1982 Alexandra Antonova's 'Saami ABC' was used for the Kildin Saami language teaching at schools.

Despite this, in some cases, there was a gap between practical necessity and administrative ways of solving problems. In 1985 the 'Saami-Russian Dictionary' (edited by Rimma Kuruch) was published by the Publishing House of the Russian Academy of Sciences (Moscow) in the quantity of 1,720 copies (Alexandra Antonova's 'Saami ABC' had only 500 copies). According to the public opinion, it was necessary to publish not the Saami-Russian dictionary but the Russian-Saami dictionary because the Kola Saamis spoke the Russian language perfectly which was not the case for the mother tongue [30]. This requirement was partially fulfilled in 1986 when the 'Saami-Russian and Russian-Saami dictionary' by Georgij Kert was published. However, it was designed for primary school children and was used infrequently in the Saami schools.

The situation changed after 1991. The boarding school in Lovozero with 160 students and classes for 15-16 people was closed and its 'national' status was taken away. Alexandra Antonova's 'Saami ABC' has not been used at schools since 1987. According to public opinion, the new Saami textbooks destroyed the connections established between the Saami generations. As a result, the previous generations that were taught using Alexandra Antonova's 'Saami ABC' did not understand the younger generation that was taught using the new Saami textbooks including the different principles of the Saami graphics system.

At present in the Murmansk region the children and the youth are taught the Kildin Saami language only in one educational institution: municipal comprehensive boarding school 'Lovozero Boarding School of Secondary (Full) General Education'. The school is situated in Lovozero—in the center of the areas densely populated by the Kola Saamis.
The elementary school classes of the 'Lovozero Boarding School of Secondary (Full) General Education' teach Saami classes one hour per week. In everyday life the school children do not

use the Saami language, they are not taught the theory of Saami language but only the spoken language. There was Saami language teaching in the elementary classes of school № 9 in Murmansk in 2003 for half a year.

In some municipalities training of grown-ups in the Kildin Saami language is arranged as private initiatives of Saami community leaders. Such courses are given on a non-systematic basis, have no methodology and teaching support, and take place for a very limited number of trainees. The focus of such courses is to develop speaking skills only.
According to Alexandra Antonova, the problem with teaching the Saami language is that teachers are focused on spoken language, not grammar.

In the post-perestroika period, both the state and the Saami public play an important and growing role in the revitalization of the Kola Saami language. The Saami activists propose active measures to initiate the revitalization of their language (the creation of language centers, the Center for the Saami knowledge, clubs and courses in the Saami language).

Researchers and the 'Kola Saami Documentation Project' (http://saami.uni-freiburg.de/ksdp/RU/) staff contributed significantly to the process of revitalizing the Kildin Saami language: they organized a language center where a real language environment was created, and found specialists and native speakers for teaching the Saami language. The Kola Saamis highly appreciated this contribution to the revitalization of the Saami language.

Currently the Saami community believes that now it is necessary to react on an emergency basis to revitalize the Kola Saami languages and use a technique called 'language nests', when a language is used both in the process of education and communication. This technique has really helped to revitalize the North Saami language in Norway. This technique is used in the Saami language teaching in Finland (http://www.rosvesty.ru/1958/guest/).

In December 2009 members of the initiative group on preservation and development of the Kola Saami languages proposed establishing a 'Center of Practical Language' in Lovozero to the Murmansk Regional Duma (Murmansk Regional Parliament). The objectives of this center include language courses and trainings for groups of different ages, to organize language meetings, discussions, camps, and hikes.

In July 2009 the Kola Saami language Summer Camp was held on the island of Charvin in Lovozero [6]. This project was supported by the 'Kola Saami Documentation Project' staff, including the material support: for participating in the camp the Kildin Saami native speakers received a 'salary'. As a result of the 'Kola Saami Documentation Project' the online study materials 'Do you want to learn or improve the Kildin Saami language?' and the Kildin Saami grammar and vocabulary textbooks were published on the Murmansk State Regional Universal Scientific Library's site (http://www.mgounb.ru/land/vy_hotite_izucha/).

The issues surrounding the revitalization of the Kola Saami language have been actively discussed during the regional public meetings, seminars and conferences.
Cross-ethnic Marriages. Assimilation of the Kola Saamis depended on peoples the Saami connected with in their economic life (the Russians, the Finnish, the Komi-Izhems, the Samoyeds, the Norwegians, and the Karelians). According to V. Alymov's research from the 1920s, the Saamis had communicated with the Russians throughout the Kola Peninsula, but communicated with other nationalities only on a certain part of the Kola Peninsula. With the Norwegians and the Karelians, the Saamis were in economic and cultural relations since ancient times, but by the early 20th century this relationship weakened. From these contacts

the Saamis lost more than they gained (lost lands and pastures, the transition to settled life, had the cultural influences in the clothing, household goods, and food).

It has always been customary for the Kola Saamis to marry Russians, and there is almost always the loss of Saami tribal traits as a consequence. A Saami woman, married to a Russian or a Finn, ceases to be a Saami. A Saami man, who begins to have a settled life and married to a Russian woman, soon becomes a Russian. A good example, according to Vasilij Alymov from the 1920s, is the Saamis from the East of the Kola Peninsula: by the transition to settled life and marriage with Russians a significant number of the Saamis became Russians. If representatives of peoples having a sedentary life, married to a Saami, they did not change their life, they did not go to the tundra. They considered nomadic life a life of a lower quality than their own life [2]. Now about 50% of all the marriages are between the Saamis and representatives of other ethnic groups [23]. According to the 2000 annual report of the State Committee for Environmental Protection in the Murmansk region a young Saami family today is a rare case. About 80% of the Russian Saamis under 50 years old were born in mixed ethnic families. That is why the native language is forgotten, attitude to the national trades is indifferent, and as a result lifestyle is lost. Unfortunately, many of the Saamis remember that they belong to the Saami nationality only when it comes to governmental benefits. Only a Saami family can be a guarantee of preservation of the Kola Saami ethnicity (http://www.murman.ru/ecology/ comitet/report00/).

State's Language Policy. According to the Constitution of the Russian Federation, the state language of the country is Russian. Article 26 of the Constitution and Article 2 of the Law 'On Languages of the People of the Russian Federation' (edition 2002) provides a general right for people belonging to national minorities to use their own languages (http://www.internet-law.ru/law/smi/iazyk.htm).

In Russia in the Northwest Federal district which the Murmansk region belongs to, the Advisory board concerning indigenous people is created and also the creation of the position of the representative protecting the rights of indigenous people in the Northwest Federal district is discussed. In 2009 the Council of Representatives of Indigenous Minorities of the North of the Russian Federation is created at the Murmansk Regional Government. In 2012 the departmental target program 'Economic and Social Development of the Indigenous Minorities People of the North of Murmansk Region' for 2012-2016 is developed.

The main objective of the Council of Indigenous Minorities of the North of the Russian Federation is to participate in the preparation and acceptance of government bodies exercising executive decisions on the development and realization of a state policy in the sphere of protection of the primordial habitat, the traditional way of life, management and crafts of the Saami.

At the last meeting of the Advisory board concerning indigenous people on December 9, 2013, the question of the preservation of the languages of indigenous people of the Northwest of Russia was discussed. During this meeting it was emphasized that in the Murmansk region public authorities and Murmansk Regional Government give support to the actions directed on preservation and use of the Kola Saami languages. There is research on the languages of the indigenous people at the highest educational institutions. The factors negatively influencing the use of the languages of the indigenous people are: urbanization, negative demographic tendencies in the environment of indigenous people, absence or low motivation of young generation to study native languages, contradictions in the federal legislation in

education, and in the sphere of support of social and economic and ethno cultural development of the Indigenous Minorities of the North. It was decided to consider until April 1, 2014, the possibility of introducing additional measures of stimulation of teaching and studying of the languages of the indigenous people and training in the native languages in preschool, average and highest educational institutions. It was decided also to consider until June 2, 2014, the possibility of implementing interaction with research institutions of the additional actions for documenting the languages of the indigenous people of the Northwest of Russia, including the Kola Saami languages people. Measures of support, including grants and subsidies, target projects of the non-profit non-governmental organizations directed on preservation and expansion of the usage spheres of the languages of the indigenous people of the Northwest of Russia (http://szfo.gov.ru/council/korennienarodi/prot20131209).

In the Murmansk region today there are 8 Saami public associations and 29 Saami clan communities of the Indigenous Minorities of the North of the Russian Federation. Their activity is directed on protection of the rights and legitimate interests of indigenous people, preservation and development of traditional types of the economic activity, a traditional way of life and culture. The quantity of the Saami clan communities increases in the Murmansk region.

Despite administrative measures, the serious legal base, the developed system of cooperation between public organizations and the authorities, results of language policy concerning the Kola Saami languages are quite insufficient. We can mention some facts of the government bodies paying attention to the Kildin Saami language. Emercom (Murmansk region, Russia) intends to prepare interactive editions on safety precautions in the Kildin Saami language. According to Emercom, promoting languages of the Indigenous Minorities of the North of the Russian Federation and increasing awareness of people in safety precautions becomes the purpose of issuing interactive posters and leaflets in Kildin Saami. The leaflets will be issued in Kildin Saami, and include translation into Russian and English. Safety precautions and the rules of behavior in mountains are the main subject of these interactive publications. Though the efficiency of these attempts is doubtful. On one hand, it is difficult to overestimate their attention to the Kildin Saami language, on the other hand, use of such publications in this language is almost impossible, because of the fact that there are not many people who are able to read the Kildin Saami language.

In my opinion, the main thing that should be taken into account in the policy of preservation and revival of the Kola Saami languages is that we need to change the language status. This will cause an increase of people studying the language, and will change their motivation to study the language. The factors that create the language status are its functioning, use in society, etc. They become real measures which are offered by the Saami public and the researchers dealing with the problems of the Kola Saami languages: to expand household function of the Kola Saami languages by means of real functioning of language groups, to create workplaces with use of the Kola Saami languages, to adjust functioning of mass media in the Kola Saami languages. These measures, certainly, have to be carried out in parallel with process of training in the Kola Saami languages. Thus the state too has to accept additional obligations.

I have examined how 'The European Charter for Regional or Minority Languages' provisions are realized in Russia in relation to the Kola Saami languages and what obligations the Russian Federation should accept. The Kola Saami languages is not in the list of minority languages in the database of the Charter of the Council of Europe. There are Saami languages in Norway, Finland and Sweden, but there are no Saami languages in Russia according this list.

When the government of Finland ratified 'The European Charter for Regional or Minority Languages', the government accepted 59 obligations in relation to the Saami languages in Finland. The Russian Federation has not yet ratified this Charter, and therefore does not accept any obligation.

In my research we use the method of language situation modeling to examine the state and dynamics of the Kildin Saami language. According to the results of this research, to change the situation with the Kola Saami languages it is necessary to recognize these languages as an expression of the cultural wealth, to act to promote the Kola Saami languages in order to safeguard, encourage the use of the Kola Saami languages, to develop flexible and innovative measures for their preservation, to create university courses and programs for the Kola Saami languages. So, the Kola Saami languages are not recognized as an expression of the Saami cultural wealth, and there is no law in the Murmansk region directly concerning the preservation of the Kola Saami languages as a unique cultural heritage. It is necessary to create certain conditions for public usage of the Kola Saami languages. It means first of all functioning of mass media in the Kola Saami languages. One condition of teaching of the Kola Saami languages at schools it is necessary to start teaching the Kola Saami languages at universities that is now done only at the Herzen State Pedagogical University of Russia, St. Petersburg.

Prestige of the Language. The prestige of the native language among the Saamis is unfortunately quite low. There is a variety of reasons for that: economic, social and political. It is possible to add the psychological health of the people and the psychological climate surrounding them in the society. So, if officially the state always supported preservation of the Kola Saami languages, the informal policy of the state for many years was in certain cases was to suppress these languages. A direct ban on studying a native language, of course, never took place, but the fact of obligatory employment of the population promoted its oblivion. The concept of a 'housewife' for the Saami women did not exist during the Soviet period. Parents were obliged to work and to send children to kindergarten or to a boarding school. Even during the summer children could not go with their parents to the tundra, they had to go to a summer camp in the southern regions of the country. As the kindergarten teachers did not speak Saami, parents were asked to speak Russian at home. It was prestigious to speak Russian, and to speak Kola Saami was considered to be shameful.

Existence of Written Forms of the Language. The first attempts of creation of a written form of Kola Saami were made at the end of the 19th century. Systematic research work on studying the questions of creation and development of written forms of Kola Saami began in 1926-1927 when the North Faculty at the Leningrad East Institute names after A. S. Enukidze as a part of the Leningrad University was organized.

The Latin graphics was the basis for spelling. Since 1937 the written forms of Kola Saami, as well as written forms of other languages of Indigenous Minorities of the North of the Russian Federation, were transferred to the Russian alphabet (Cyrillic) [19].

In 1982 Alexandra Antonova developed a new alphabet for the Russian Saamis based on the Russian graphic (Cyrillic). Absence of the consensus between the experts in the description of the phonologic system of the Kola Saami languages and in the way of the graphic representation of some sounds led to still continuing disputes. It is a serious obstacle for practical work on the preservation and development of the Kola Saami languages [3].

Recently we find single opinions on the possibility of returning to the Latin graphics system as the Cyrillic basis of spelling makes the Kildin Saami language not prestigious for studying. This is the opinion of the Kola Saami youth, for this reason many of them prefer studying the North Saami language (language of the Norwegian Saami). It should be also emphasized that, according to some representatives of the Saami public, now the Kola Saamis are often perceived by western (non-Russian) Saamis as 'strangers'. If the Kola Saami languages use Latin graphics, the Russian Saamis and the non-Russian Saamis will better understand each other and this fact will strengthen national consciousness of the Kola Saamis [4].

Literature in the Kola Saami languages exists. There are 18 Saami poets and writers, 5 of them write in the Kola Saami languages (in Kildin and Ter Saami languages), the others write in Russian.

The Role of Mass Media. Mass media in the Kola Saami languages does not currently exist. The project 'Kola Sámi Radio' which was started in 2003 deserves a special attention. The Saami Council, a voluntary Saami non–governmental organization with Saami member organizations in Finland, Russia, Norway and Sweden, and the Sámi Radio, Saami-language broadcasting from Sweden, Norway and Finland were its initiators. The project 'Kola Sámi Radio' received funding from these initiators and from the Ministries of Foreign Affairs (Norway and Finland), the Nordic Council of Ministers, Eurasia Foundation, The Saami Parliament (Sameting) of Norway, the Norwegian Barents Secretariat and programme Interreg (financed by the European Regional Development Fund). The radio broadcasting station is situated in Lovozero where more than half of the Russian Saami lives. In 2005 the 'Kola Sámi Radio' was broadcast in the Kildin Saami language three times a week for ten minutes. The broadcasting station had a staff of six people. Now the 'Kola Sámi Radio' has economic difficulties: in January 2010 it was declared that the 'Kola Sámi Radio' employees have not been paid a full salary since a long time. This project was not the first attempt to organize broadcasting in the Kildin Saami language in the Murmansk region. Since 1990 the broadcasting in the Kildin Saami language was carried out by the office of the State TV and Radio Broadcasting Company Murman (GTRK) in Lovozero, but in 2000 this broadcasting was stopped. Daily or weekly newspapers and regular broadcasting in the Kola Saami languages do not exist.

STRUCTURE AND ORGANIZATION OF THE PAPER

As my research on the current sociolinguistic situation shows, the Kildin Saami language already belongs to the group of critically endangered languages. The reasons for this are the loss of the Saami traditional trades and the Saami traditional way of life, dispersion of the Saami accommodation, lack of the educational environment, no demand of the Kola Saami languages between the Saamis, and duration of the impact on the Kola Saami languages.

The situation of the Kola Saami languages in comparison to the other Indigenous Minorities languages of the North in Russia is particular. On the one hand, the statement that the Kola Saami languages are 'dying' has already become quite common. On the other hand, real revival of the feeling of the ethnic consciousness causes confidence in the Kola Saamis that movement for a revitalization of the Kola Saami languages will lead to some notable results. Awareness of the fact that language 'can mean much more to its ethno culture than just languages in general or than the language capacity with all humans are endowed' [5] begins to emerge in the Russian Saami community. The Kola Saami's confidence in the revival of their own language and culture is supported first of all by a positive example of the Finnish, Norwegian and Swedish Saamis, with who the Kola Saamis have very active contacts. The Saami community of the different countries after 1991 has close and intensive contacts at different levels: economic, political, social and humanitarian. So, following the example of the

Saami of Finland, Norway and Sweden in 2010 the elective representative organ of the Russian Saamis living in Murmansk region (the Saami parliament of the Kola Peninsula) was created. The Saamis of the different countries have joint projects in different spheres. The youth of the Kola Saami have an opportunity to study in Finland and Norway using grants from these countries.

Acknowledgements

References

Afanas'eva N., Kuruch R., Mechkina E., Antonova A., Yakovlev L., Gluxov B. 1985. Saamsko-russkij slovar', Russkij yazyk, Moskva.

Alymov V. 1930 Rozhdaemost' i smertnost' loparej kol'skogo poluostrova: *Kol'skij Sbornik. Trudy Antropologo-e'tnograficheskogo Otryada Kol'skoj E'kspedicii*, Izdatel'stvo Akademii nauk, Leningrad. 99–100.

Burykin A. 2000. Izuchenie fonetiki yazykov malochislennyx narodov severa rossii i problemy razvitiya ix pis'mennosti (obzor): *Yazyk i Rechevaya Deyatel'nost', Vol. 3*, Filologicheskij fakul'tet Sankt-Peterburgskogo universiteta, Sankt-Peterburg. 157.

Butyleva A. 2011. Problema latinizacii kil'dinskogo dialekta saamskogo yazyka kak sposob ego soxraneniya i razvitiya: *Charnoluskie Chteniya*: Materialy Mezhregional'noj Nauchno-Prakticheskoj Konferencii 12-13 aprelya 2010., MGGU, Murmansk. 23–27.

Fishman, J.A. 2001. Why is it so Hard to Save a Threatened Language?: Can Threatened Languages be Saved?: *Reversing Language Shift Revisited: A 21st Century Perspective* / Ed. by Joshua A. Fishman. Multilingual Matters Ltd, 1-22.

Galkina E., Sharshina N., Maksimenko O., Ushakova N., Danilova S., Medvedeva M., Vasil'eva A., Cmykajlo T. 2010. Puti razvitiya yazykov korennyx malochislennyx narodov severa: *Nauka i Biznes na Murmane: Nauchno-prakticheskij Al'manax: Yazyki i Kul'tura Kol'skix Saami, no. 2(69)*, Knizhnoe izdatel'stvo, Murmansk. 35–44.

Itkonen, T. 1958. Koltan- ja kuolanlapin sanakirja. 1-2. Helsinki: Suomalais-Ugrilainen Seura.

Ivanishcheva O. 2011a. Evropejskaya xartiya o regional'nyx yazykax i yazykax men'shinstv i polozhenie saamskogo yazyka na kol'skom poluostrove, Vol. 1. *Filologiya*, Knizhnoe izdatel'stvo, Sankt-Peterburg. 145–152.

Ivanishcheva O. 2011b. Problemy soxraneniya yazyka korennogo malochislennogo naroda kol'skogo severa i perspektivy dvuyazychnogo obrazovaniya: *Materialy Mezhdunarodnoj Nauchnoj Konferencii Dvuyazychnoe obrazovanie: Teoriya i Praktika* (2628 aprelya 2011 g., Xel'sinki, Finlyandiya), Xel'sinskij universitet and Zlatoust, Xel'sinki. 108–109.

Ivanishcheva, O. 2013a. Vzaimodejstvie yazykov i kul'tur v kul'turno-kommunikativnom prostranstve kol'skogo severa, no. 2: Filologiya, Izdatel'skij dom Nauka obrazovaniya, Moskva. 66–73.

Ivanishcheva, O. 2013b. Rodnoj yazyk kak uslovie e'tnicheskoj samoidentifikacii (na primere naseleniya murmanskoj oblasti), no. 4 (41): Filologiya, Gorno-Altajsk, 22–25.

Ivanishcheva, O. 2013c. Yazyk i kul'tura korennogo malochislennogo naroda: problema vzaimodejstviya: *Model' Mira Korennyx Malochislennyx Narodov Arkticheskogo Regiona: Dinamika Vzaimodejstviya Yazyka i Kul'tury v Usloviyax Globalizacii i Regionalizacii: Materialy Mezhdunarodnogo Nauchno-Prakticheskogo Seminara.* 29-31 oktyabrya 2012 g., MGGU, Murmansk, 6–9.

Ivanishcheva O., Bakula V., Yazyk i kul'tura malochislennyx narodov Severa: istoriya i perspektivy: uchebnoe posobie, MGGU, Murmansk, 2012.

Ivanishcheva, O., Bakula, B. 2013a. Slovar' leksiki duxovnoj kul'tury kol'skix saami, MGGU, Murmansk.

Ivanishcheva, O., Bakula, V. 2013b. Yazyk i duhovnaya kul'tura kol'skix saamov, MGGU, Murmansk.

Ivanishcheva, O., Butyleva, A.. 2008. Olenevodcheskaya leksika kil'dinskogo dialekta saamskogo yazyka, no. 11: *Gumanitarnye i Social'nye Nauki*, PGU, Arxangel'sk, 166–173.

Ivanishcheva, O., Butyleva, A. 2010. Obuchenie saamskomu yazyku v usloviyax dispersnogo prozhivaniya korennogo naseleniya murmanskoj oblasti (k obosnovaniyu aktual'nosti vnedreniya sistemy distancionnogo obucheniya): *Real'nost' E'tnosa. Obrazovanie kak Faktor Ustojchivogo Razvitiya Korennyx Malochislennyx Narodov Severa, Sibiri i Dal'nego Vostoka*. K 80-letiyu Instituta Narodov Severa: Sbornik statej po materialam XII Mezhdunarodnoj nauchno-prakticheskoj konferencii (Sankt-Peterburg, 20-21 maya 2010 g.), Vol. 1, Izdatel'stvo RGPU imeni Gercena, Sankt-Peterburg, 421–423.

Kert, G. 1971. Saamskij yazyk (kil'dinskij dialekt): fonetika, morfologiya, sintaksis, Nauka, Leningrad.

Kert, G. 1975. Saamskij yazyk: *Osnovy Finno-Ugorskogo Yazykoznaniya. Pribaltijsko-Finskie, Saamskij i Mordovskie Yazyki*, Nauka, Moskva. 209–210.

Kert, G. 1986. Slovar' saamsko-russkij i russko-saamskij, Prosveshhenie, Leningrad.

Korhonen, M. 1981. Johdatus lapin kielen historiaan [An introduction to the history of the Saami language]. Helsinki: Suomalaisen Kirjallisuuden Seura.

Kostina, G. 2006. Vokalicheskaya sistema kil'dinskogo dialekta saamskogo yazyka v svete russko-saamskoj interferencii, Ph.D. thesis, Sankt-Peterburgskij gosudarstvennyj universitet.

Luk'yanchenko, T. 1994. Saamy: *Narody Rossii: E'nciklopediya*, Nauchnoe izdatel'stvo Bol'shaya Rossijskaya E'nciklopediya, Moskva, 249–253.

Natsionaljnyj sostav,1. 2013. Nacional'nyj sostav i vladenie yazykami, grazhdanstvo naseleniya Murmanskoj oblasti. Itogi Vserossijskoj Perepisi Naseleniya, Vol. 4, Book 1. Federal'naya sluzhba gosudarstvennoj statistiki, Murmansk.

Natsionaljnyj sostav,2. 2013. Nacional'nyj sostav i vladenie yazykami, grazhdanstvo naseleniya Murmanskoj oblasti. Itogi Vserossijskoj Perepisi Naseleniya, Vol. 4, Book 2. Murmansk.

Rießler, M., Wilbur, J. 2007. Documenting the endangered Kola Saami languages // Bull, Tove/Kusmenko, Juruj/ (Hg): *Språk og Språkforhold i Sápmi*. Berlin: Nordeuropa-Institut, 39-82.

Sammallahti, P. 1998. The Saami Languages. An Introduction. Davvi Girji OS. Karasjok.

Sammallahti, P., Chvorostuchina A. 1991. Unna sámi-cāмь sátnegirjjáš. Girjegiisa OY, Ohcejoka.

Scheller, E. 2010. Situaciya saamskix yazykov v rossii, no. 2(69), Murmanskoe knizhnoe izdatel'stvo, Murmansk. 18,20.

Smirnov, V. 1989. O saamskoj azbuke i azbuchnyx istinax, Polyarnaya pravda. No. 16.06, Murmansk. 2.

Tereshkin, S. 2002. Jokan'gskij dialekt saamskogo yazyka, Ph.D. thesis, Rossijskij gosudarstvennyj pedagogicheskij universitet imeni Gercena.

The Saami. 2005. A cultural Encyclopaedia. Ed. by Ulla-Maija Kulonen, Irja Seurujärvi-Kari, Risto Pulkkinen. Vammala.

Ushakov, I. 1998. Izbrannye proizvedeniya. Istoriko-kraevedcheskie issledovaniya, Vol. 2, Knizhnoe izdatel'stvo, Murmansk, 1998.

Vakhtin. N., Golovko, E. 2004. Sociolingvistika i sociologiya yazyka, IC Gumanitarnaya Akademiya and Evropejskij universitet v Sankt-Peterburge, Sankt-Peterburg.

Zajkov, P. 1980. Babinskij dialekt saamskogo yazyka, Ph.D. thesis, Tartusskij universitet.

A Mixed Method Analysis of Mental Toughness in Elite and Sub-elite Male and Female Tennis Players In Pakistan

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ABSTRACT

The study examines the potential relationship between mental toughness and performance among elite and sub-elite tennis players in Pakistan. Participants (N=118) were selected through purposive sampling. The qualitative data was collected by adapting the scale "Athletes "how tough are you", Enders, Pamela Lynn (2007) and was used in three sessions: i) individual semi- structured interviews of the 3 seasoned performers and ii) a focus group comprised of 8 elite and7 sub-elite players, and iii) an unstructured interview with the Senior Vice-President of Sindh Tennis Association. Psychological Performance Inventory- Alternative (Golby et al., 2007) was employed as a quantitative measure of mental toughness of 115 participants. Findings for qualitative data revealed that 3 seasoned performers considered "ability to deal with pressure", ability to deal with adversity", "focus", "visualization", "Confidence", "ability to deal with negative talk", "motivation" and "consistency" as crucial factors for tennis. Elite players regarded "focus", and "fear of losing" to be critical aspects in comparison to sub-elite players who attributed "motivation" and "routine practice" to be more crucial factors for tennis. Interview with the vice-president considered "titles" and "monetary rewards" to play decisive role pertaining to the success of tennis players. Quantitative analysis comprised of Cornbach Alpha reliability was measured =.852 for 14 items (PPI-A, 2007). Independent sample t tests were significant t =7.864, p=<.000, df =113 and t =6.622p=<.000, df =113 for the difference between elite and sub-elite players and males and females on the measures of MT respectively. Stepwise multiple regression analyses on the components of mental toughness also indicated a significant difference among elite and non-elite tennis players on Self-Belief, and Determination (B-=.086, t= 4.701, p<.000) and (B=.066, t=3.162, p<.000) respectively. On the basis of these results it can be deduced that properties of MT can be linked to predicting success in tennis.

Key Words: Mixed Method Approach; Mental toughness; seasoned players; Elite Players; Sub-elite players

INTRODUCTION

Mental toughness (MT) has gained considerable popularity in the recent decades and has spurred research in the field of sports Psychology. Mental toughness is considered to be an integral part of any sport (Weinberg, Butt, & Culp, 2011). Mental toughness is "an unshakeable perseverance and conviction towards some goal despite pressure or adversity" (Middleton, Marsh, Martin, Richards, Savis, & Perry, 2004, p. 6). Mental toughness is also regarded as "the ability to be more consistent and better than one's opponent by being determined, focused, confident, and in control under pressure" (Madrigal, L., Hamill, S. & Gill, D.L., 2013). Furthermore, there is also a general agreement that psychological skills are essential for developing and maintaining mental toughness, (Connaughton, Wadey, Hanton, &

Jones, 2008). Contrary to these studies, Crust (2008) demonstrated that treating MT as absolute terms undermines other contextual differences which can also explain the performance of players.

Review of the related Literature:

Despite being recognized as the most crucial part of any sport success, there has been no consolidated agreement to specific properties of MT. Despite absence of consensus related to the properties it is consistently most referred to attribute with regards to sports. Related literature review identifies some of the frequently documented properties of MT including capability to deal with adversity, and resilience (Crust, 2008; Shread, 2010). Loher (1986) identifies seven components of MT: self-confidence, negative energy control, attention control, visualization and imagery, motivation, positive energy and attitude control. According to Loher, athletes who acquire these attributes can achieve at least 50% success which can be credited to MT. Despite being the pioneer for acknowledging MT Loher's findings lack statistical evidence. Gucciardi and colleagues (2008) regard MT as the decisive factor in determining the success of players.). Middleton et al. (2004) proposed that adversity in life plays a crucial role in achieving victory: It is a player's ability to use the power of their mind to turn the tables around to their advantage. In spite of the ambiguity between consensus about the properties of MT and conceptual definitions of the construct, MT is well entrenched in mainstream research and is accepted by the wider community (Jones, Hanton, & Connaughton 2007).

Tennis as a sport:

The history of this sport can be traced as far back as French handball game commonly known as "Paume" (palm). The game has gradually gained popularity starting from the European monks, in the 12th century, who played it for recreational purpose during ceremonial occasions till Roger Federer who earned the maximum prize money worth $81,245,913 by June, 2014. A new era in the history of tennis is marked with players writing their success stories beginning from Don Budge in the year 1938 when he won four grand slam titles in the same year to Rafeal Nadal who won Roland Garros for the 9th time in 2014 while enjoying his position for being world number one for 360 days till the time Novak Djokovic secured the title of world number one once again by upgrading his points to 13,130 after winning Wimbledon, 2014.

In the current era due to immense popularity sports generate commercial activities which are worth billions of pounds (Robinson, 2003). This results in enormous amount of pressure for players and the coaches. They have constantly deal with the advances made in the sport and improvise their game accordingly. For example, John McEnroe and Steffi Graf used racquets weighing 12.5 in 1980. Gradually the weight of the racquets has decreased to 10ounces with some being as light as 7ounces with the advent of piezoelectric technology (introduced by Head). In the wake of commercial enterprises human machinery (body, mind and strategy) of the players is also required to rigorously evolve and make adjustments to meet the current standards.

According to coaches growing demands are proving to be stressful for players and until and unless they do not possess MT their success in any sport cannot be guaranteed especially when it is concerned with individual sports. An interesting contrast between team sports and individual sports can reveal that sports like tennis (singles) can be a test of immense endurance for single players in which matches can continue for several hours against harsh weather conditions as well. The longest match in the history of tennis has been played between John Isner and Nicholas Mahut that lasted 11 hours and 5 minutes in 2010. These demands of such matches not only encompass physical, emotional, psychological and

technical domains of the sport but also pose a challenge to the mental wellbeing of the players. Due to the likelihood of such matches to take place in future, genuine concern among coaches and tennis performers seems to be justified and it is not surprising that among all of these attributes MT is regarded as the most crucial one to offer an answer to this problem.

Tennis is recognized as a sport that encompasses physical, psychological and emotional domains of a player's personality. The implication of MT in tennis has been admitted even by world's number one players. For example, Rafeal Nadal remarks in his book, "Tennis is, more than most sports, a sport of the mind; it is the player who has those good sensations on the most days, who manages to isolate himself best from his fears and from the ups and downs in morale a match inevitably brings, who ends up being world number one". Other professional players relate to MT from a complete diverse angle when instead of endogenous characteristics exogenous factors like social influence may propel a player to achieve excellence. For example, in the year 2013 after securing the grand slam at Wimbledon, Andy Murray credited the high expectations of his entire nation that helped him win the match.

 Bull, Sham brook, James, & Brooks, (2005) propose that the construct of MT needs to be studied with a particular reference to the sport under consideration. On the basis of this proposition by Bull et al. (2005) it can be implied that properties of MT might be significantly different from other sports. If MT needs to be defined in the context of tennis then what exactly is it? Tennis Strategy Encyclopedia helps tennis players assess their mental skills by answering a few questions: "Are you mentally tough enough to hit a good shot under pressure? Can you withstand that pressure? Can you direct your mind to the "here and now" where you find relief from pressure? Where you forget about it? Are you able to either accept your mistakes or quickly calm down if they upset you?", (Mencinger 2014 p. 85). According to Mencinger, "tennis strategy is based on statistics and on the mental and emotional characteristics of certain players". Tennis players, who want to achieve success and sustain it for a longer span, are thus supposed to focus on mental and emotional domains of the sport as well.

Objectives of the Study

1. To examine the properties of mental toughness among tennis players in Pakistan
2. To assess the difference of mental toughness between elite and sub-elite players
3. To examine the impact of the four components of MT on male and female tennis players in Pakistan
4. To assess the extent of difference between males and females on MT in Pakistan.

Research Questions:

The research questions have been formulated based on the related literature on MT as follows:

1. To what extent seasoned performers recognize the essential properties of mental toughness?
2. How far elite and sub-elite players relate to the properties of mental toughness?
3. To what extent male and female players relate to similar themes of mental toughness?

Hypotheses:

1. There is no significant difference of mental toughness between elite and sub-elite players.
2. There is no significant difference of mental toughness in male and female tennis players.
3. There is no association between the properties of MT and tennis players.

Significance and scope of the Study:
Due to the increasing popularity of the tennis world-wide, there has been a substantial increase in the number of players choosing this sport as their preferred career option. The current study focuses on the extent to which MT influences tennis players. The study is unique in offering both qualitative and quantitative measures for analyzing the construct of MT in the context of Pakistani tennis players. The current study also provides a much needed link between qualitative and quantitative approaches to understand the construct of MT in tennis. The researcher aims to investigate the impact of MT on both male and female tennis players.

The study compares elite and sub-elite male and female players with regards to their performance in tennis. The related literature review provides some insight into the attributes of the elite players but little comparison has been drawn between elite and sub-elite players with regards to tennis. An attempt has been made to compare the findings of quantitative data with qualitative data to establish consensus about the subcomponents of MT. Tennis as a sport is played as singles and doubles so more focused research in future between these two forms of tennis -singles and doubles- can offer better possibility of finding more reliable underlying properties of MT with special reference to tennis as an individual sport.

METHODOLOGY

Design:
In the quantitative method, the study does not manipulate any independent variable so "expo facto design/predictive design", is used by the researcher. A survey is conducted to generate and explore data regarding the naturally occurring phenomenon (Mental toughness) without any intervention by the researcher. The study also intends to supplement the findings obtained by expo facto design by gathering data through semi-structured interviews and focus group.

Instruments of the study:
Research Instruments are divided on account of qualitative and quantitative data:

1) The scale "Athletes "how tough are you", designed by Enders, Pamela Lynn (2007) was adapted, after gaining permission, to serve as a structured interview. Originally it contains 30 items with two forced choices of "true" and "false". The scale was adapted in such a way that it gave more freedom to the participants to explore their affective domain and generate relevant questions that were crucial in the selection of an inventory that measured the properties of MT. For example, "Do you perform better in practice than you do when it really counts the most?" and "Do you think too much about what could go wrong right before and during performance?". This instrument will initially serve as an instrument for data collection by seasoned performers and after making necessary modification (based on the course and identification of properties of MT), will be employed on the focus group.

2) Psychological Performance Inventory- Alternative (2007) was designed by Golby et al. by conducting an exploration of the factor structure of the Psychological Performance Inventory (PPI-A). PPI was originally designed by Loher in 1986. The original version had 48 items and the confirmatory factor analysis reveals a factor structure with Cornbach Alpha reliability.9. Compared with this original inventory PPI=A has 14 items and a 5-point Likert scale. It has four subcomponents: Determination: For example, "the goals I've set for myself as a player keep me working hard"; "I'm willing to give whatever it takes to reach my full potential as a player". Self-belief: For example, I lose my confidence very quickly". Positive-Cognition: For example, "I can change negative moods into positive ones by controlling my thinking". Visualization: For example, "Thinking in pictures about my sport comes easy for me" and "I visualize working through tough situations prior to competition".

Items were reverse scored as well to reduce response bias. For example, "I can keep strong positive emotion flowing during competition" and "My self-talk during competition is negative". Previous finding have satisfactory internal consistency for all four sub-components of PPI-A.

Sample:
Participants were recruited through purposive sampling technique to match the requirement of the study. N=118. The sample of the study was comprised of three different groups of players. The first group was comprised of three seasoned performers who agreed to take part in this study. Consistent in Jones et al (2007) these players have earned international honors and have represented the country on several occasions. In order to distinguish between players with International and national honors these players are referred to as seasoned players.

The second group of the study included elite players, 62 players who have performed at national level. 40% of these players had also represented their country, but that variable was not measured separately for this group. These players were selected from different cities of Pakistan. In order to make the participation of elite players possible the study was conducted at a time when Sindh Tennis Association (STA) was hosting two national level championships in Karachi and tennis players from all over Pakistan took part in these events. Permission to conduct the study was obtained by the vice-president of STA.

The third group comprised of 50 sub-elite players who were selected from different clubs of Karachi. Most of these players were recreational players at the time of study. Lastly, the vice-president of STA was interviewed in relation to all three questions of the study.

All participants signed informed consent. Participants were informed about the nature of the study and were asked to read the instructions which assigned them the right to withdraw from the study if they wished to do so. Participants of the focus group were also informed that the researcher would tape record the session and would take notes during the interview.

Procedure:
A mixed method approach was used to collect data which is comprised of qualitative and quantitative methodologies. The inductive approach pertaining to qualitative data relies on textual (spoken or written) data to generate ideas. On the contrary, deductive method follows a theoretical framework and applies data to approve or disapprove the idea (Holloway, 1997). Due to the ambiguity of the construct of MT an effort has been made to employ a combination of both the approaches to have a holistic view. Qualitative and quantitative methods involve differing strengths and weaknesses; they constitute alternative, but not mutually exclusive, strategies for research (Patton, 1990, p. 14). In order to accomplish this aim it was also considered worthwhile to compare the findings of inductive and deductive approaches to reach a consensus on the sub-components of MT. The study examined descriptive, exploratory, contextual and explanatory and inferential data for the accomplishing this task.

The qualitative data analysis was comprised of several exploratory stages. Qualitative research helps players to share their experiences which results in better understanding of the constructs (Dale, 1996). Qualitative data was collected via: i) Interview of the seasoned performers; ii) Interview in the form of focus group comprised of elite and sub-elite players and iii) unstructured interview of the vice-president. Interview technique was considered to be more a more appropriate technique to gain in-depth understanding of MT (Patton, 1997).

Based on the relevant literature review and by following the practice of inductive approach of a coding framework created that was based on the scale ("Athletes "how tough are you" Enders, Pamela Lynn, 2007). The coding framework was constantly developing and being modified. In the light of the interview with the seasoned performers the MT scale ("Athletes "how tough are you" Enders, Pamela Lynn, 2007) was modified and categories like consistency, motivation, focus, positive cognition, ability to deal with negative self-talk, ability to handle pressure and visualization were established. A comparison of these categories was also made with the unstructured interview by the vice-president of STA.

A pilot study was also conducted to find out any pitfalls of the research design and it was found out that several items of the MT scale generated identical responses. Since the interview questions were adapted from a scale that was originally designed as a 30-item questionnaire and questions are intentionally repeated to countercheck response bias of the respondents. To suit the need of an interview the 30 items were reduced to 15. For example, item 1: "How frequently do you worry about mistakes in general?" and item 3: "How easy is it for you to let go of your mistakes?" were open ended questions and had generated somewhat identical responses during the pilot study so it was considered appropriate to use only item1. Based on this technique a similar method of item selection was adopted for all other repetitive items. Consequently, out of 30 items 15 were selected that provided a modified coding framework for semi-structured interviews of the seasoned performers.

At the first stage, consistent with inductive methodology (Lincoln & Guba 1985; Patton, 1990) semi-structured interviews of the seasoned performers were conducted individually. The interviews begun with general open ended questions: their experience of the sport and their idea of the most important trait needed for tennis. It followed by more specific questions which were adapted from the scale "Athletes "how tough are you". The expertise of the three seasoned performers was used for thematic analysis the MT scale. In the light of their interview 8 themes were extracted which were used as a coding framework for the focus group session.

At the second stage a focus group session was conducted that was comprised of 8 elite and 7sub-elite players. Consistent with Patton (1990) at the beginning of the session players were asked to share their experiences of tennis and how these experiences were translated into positive and negative outcomes. Furthermore eight items selected from MT scale were used to generate discussion. The focus group session lasted for 50 minutes.

The last interview was held with the Vice-President of STA. The duration of the unstructured interview was 45 minutes.

On the basis of the main themes of the qualitative data, Psychological Performance Inventory-Alternative (2007) was selected that allowed the researcher to make relevant comparisons with the numerical measure. PPI-A was used to have a consensus regarding the components of MT, and to measure the difference between elite and sub-elite players and lastly to assess gender differences. Statistical Package for the Social Sciences (SPSS) version 20.0 was used for quantitative data interpretation and statistical inferences.

Qualitative Data Analysis:
The qualitative analysis with the help of research questions was conducted in the following manner:

Research question 1: Based on their experience, to what extent seasoned performers relate to the essential properties of mental toughness?

The first question of the study served the major purpose by develop a consensus on the properties of MT and but also to explain the process. The interviews began by asking them to explain what according to them is the single most essential attribute that they as players need to possess. Interestingly, although each one of the seasoned performers considered experience, skill and strategy to be decisive factors for their success but mental toughness was above the rest. According to seasoned performer 1, "when it comes to a single trait that has to be there then without question, that is your mental toughness, because you do not expect a player to have reached to any level of success without mastering the technique and skillfulness. What sets two players of the same experience and skill apart is their mental toughness. Seasoned player two considered an unwavering desire to conquer all odds. Seasoned player three attributed, "the attitude of the player to remain positive minded especially when he is on the verge of losing a match since you can turn a match around even at the last ball".

A mental calculation was made to ensure that each seasoned player has mentioned any property of MT. All seasoned players related to MT in the first quarter of the interview (time duration 1st performer- 3minutes, 2nd performer-7minutes, and 3rd performer-2minutes). An effort was made that the seasoned players should acknowledge the significance of MT without any persuasion so that it could be used as a baseline measure. Once they acknowledged MT, they were further asked to give their version of mental toughness. According to the first Seasoned Player, "Mental toughness is a player's ability to remain focused on his game despite all adversities". The second seasoned performer considered, "mental toughness to be an ability to focus on "here and now" or lose the game". The definition proposed by seasoned performer three assumed MT "as an ability to rise above human limitations and transcending time and space by grabbing the opportunity as and when it comes". In the light of these interviews the scale on MT-"Athletes "how tough are you"- was modified which served as a semi-structured interview for the focus group.

 After a through session of 45 minutes with each seasoned performers components of MT scale were further modified to eight items: ability to deal with adversity (item 4), dealing with pressure (item 7), focus (item 17), visualization (item 18), confidence (item 19), ability to deal with negative self-talk (item 24), motivation (item 25) and consistency (item 26 respectively). Interviews are tape recorded and the transcribed and revised several times. These themes have also been identified by previous research in this regard (Jones, Hanton & Connoughton, 2002, Loher, 1985). These themes were provided a coding framework for the unstructured interview with the vice-president.

The unstructured interview with the Vice-President of STA highlighted the importance of physical fitness and MT to serve as crucial traits which decide the success of players in the long run. However, monetary rewards and titles provide essential incentives to tennis players to acquire MT and physical fitness.

Research question 2: How far elite and sub-elite players relate to the properties of mental toughness?

The analysis of qualitative data provided almost similar accounts of experiences of elite and sub-elite tennis players According to Patton 1990 such themes provide a framework to the participants to respond within the domain of the research. Quotations provided by the focus group were used to depict their perceptions about their experiences of tennis. Significance of

themes was measured by the level of frequency as per which each type of players mentioned it, (Table 1). This was accomplished by rigorously listening to the tape recorded interviews of the participants. After critically reviewing all the transcribed data nine themes emerged out of these interviews (with the addition of social domain). Sub-elite players considered routine practice and motivation to be essential for their survival in tennis. Six sub-elite players frequently referred to their family and friends who provided them with required vigor and necessary support that was meaningful to their outcomes. Elite players referred to focus more often than sub-elite players. Several interesting comparisons emerged during the discussion, for example the elite players emphasized that very often it is the negative outcome (fear of losing a match) that becomes more of a driving force than simply the joy of winning a match. Moreover, significance of other constructs like "complying with public image" were also highlighted.

Table1: Overview of the extracted themes of Mental Toughness for elite and sub-elite players

Mental Toughness	Frequency of Occurrence	
	Elite Players	Sub-elite Players
1. Ability to dealing with adversity	14%	7%
2. Ability to deal with pressure	15%	13%
3. Social Domain	6%	11%
4. Focus	19%	9%
5. Ability to visualize	10%	10%
6. Self-confidence	7%	7%
7. Ability to deal with negative Self-talk	17%	8%
8. Motivation	5%	18%
9. Consistency	9%	17%
Total	100%	100%

Research question 3: To what extent male and female players relate to similar themes of mental toughness?
Female elite players related to the properties of MT with the same rigor. However, female sub-elite players regarded social domain to be negatively influencing their performance. Female players also interpreted focus in terms of trajectory and how this affected the quality of their play. Moreover, female players, who had less than 5 years of experience, attributed family influence, peer pressure, and the instinct to deal with the issue of trajectory to be more pertinent issues than the conventional properties of MT. Two sub-elite players (one male and two female) also referred to the coordination of mind and body to be the major concerns that interfered with their performance. The cultural element seemed to be more crucial for non-elite female players who did not relate to their career in tennis in the long run. Tennis for them was "here and now", which highlights division of labor to some degree. These younger female athletes also related to the joy more often than the older group.

At the end of the session participants of the focus group were asked to attribute their performance to any one factor that they all considered was the central to their performance in tennis and they mutually agreed that it was regular and timely practice.

The analysis of qualitative data provided almost similar accounts of experiences of seasoned performers and elite and sub-elite tennis players and the free flow of experiences not only was helpful in gathering participants' individual experiences but also for acquiring the properties of MT.

Quantitative data analysis:
Descriptive Statistics for Mental Toughness
The following table 2 presents descriptive statistics for mental toughness and both category of players. The mean of elite players is considerably more than the elite players.

Table 2: Difference of Mental Toughness based on the categories of players

Players	N	Minimum	Maximum	Mean	Standard Deviation
Elite	58	46.00	65.00	56.86	4.582
Sub-elite	57	38.00	62.00	48.59	6.506

Table 3 presents a significant difference of mean between the scores of males and female tennis players.

Table 3: Differences of Mental Toughness between males and females

Gender	N	Minimum	Maximum	Mean	Standard Deviation
Males	74	43.00	65.00	55.500	4.644
Females	41	38.00	65.00	47.82	7.787

Reliability Statistics for PPI-A:
Quantitative data was gathering by administering PPI-A to 115 participants. Nunnally (1978) recommends that instruments used in basic research are reliable if the value is about 0.70 or more. In Social-Sciences value above .7 is considered to be satisfactory. Cronbach's Alpha and the Guttaman Split-Half were obtained for PPI-A to test the reliability the scale. The values show that there was internal consistency among the items and the questionnaire was reliable, (Table 4).

Table: 4 Reliability Statistics of Mental Toughness

Cornbach's Alpha	Guttaman Split-half	No of items
.852	.835	14

Hypotheses:
Result of quantitative data analysis is as follows:

Hypothesis 1: There is no significant difference of mental toughness between elite and sub-elite players.
The findings of the first question are obtained with the help of statistical indicators, like mean and standard deviation, and independent sample t-test. A Mean difference of 8.27 has been found out between the scores of elite and sub-elite with regards to mental toughness. The value of t-test also reinforces this difference that the level of MT is higher in the case of elite player and the result is significant t =7.864, p=<.000, df =113, (Table 5). On the basis of this result it can be concluded that there is a significant difference between the MT of elite and sub-elite tennis players. Thus null hypothesis is rejected.

Table 5: Difference between elite and sub-elite in relation to MT

	Players	N	Mean	Standard Deviation	t	p
Mental Toughness	Elite	58	56.8621	4.58238		
	Sub-elite	57	48.5965	6.53523	7.864	.000*

Correlation is Significant at 0 .01 level (2-tailed)

Hypothesis 2: There is no significant difference between male and female tennis players on MT.

For hypothesis 2, independent sample t test was employed. The test is significant because there is a statistically significant difference between male and female tennis players on MT, t =6.622p=<.000, df =113.

Males scored higher (Males=55.50, SD= 4.644) than females (M= 47.82, SD= 7.787) on MT. Table 6 shows that there is a significant difference between male and female tennis players on MT thus null hypothesis is rejected on the basis of these findings.

Table: 6 Difference between males and females in relation to Mental Toughness

	Gender	N	Mean	Standard Deviation	t	p
Mental Toughness	Male	74	55.500	4.644		
	Female	41	47.82	7.787	6.622	.000*

Correlation is Significant at 0 .01 level (2-tailed)

Hypothesis 3: There is no significant association between the properties of MT and tennis players.

Stepwise multiple regression analyses were performed to predict the value of Independent variable (Mental toughness). The result yielded a coefficient of multiple regression of .591, a multiple R Square of .349 and an Adjusted R square of .338. This accounts for 33% of the total variance in their MT. The findings indicate that there is an association between the properties of MT Self-Belief, and Determination (B-=.086, T= 4.701, p<.000) and (B=.066, T=3.162, p<.000) respectively in predicting performance in tennis, thus the null hypothesis is rejected.

On the basis of this test it can be assumed that these two components "Self-Belief" and "Determinism" are relevant in predicting Mental Toughness. It is also shown that analysis of the variance for the multiple regression produced a result of F (1, 114) = 30.080, p<.000, (Table 7). However, caution needs to be used with stepwise regression analyses because the findings are sample dependent. Two components of MT were excluded in stepwise regression: "Positive-Cognition" and "Visualization". More research is required in this required to measure the role these two sub-components. The main purpose of Statistical analysis is to assess how far the study helps to understand the behavior of the general population in relation to the construct of MT and to what extent generalizations can be made. All tests were found to be significant because differences were found in relation to players, gender and the properties of MT.

Table 7: Showing Stepwise Regression Analyses for the properties of Mental Toughness

players	B	SE	t	Sig
Constant	3.534	.266	13.305	.000*
Self-Belief	.086	.018	4.701	.000*
Determination	.066	.021	3.162	.002*

R Square	.349
Adjusted R Square	.338
F Statistic (sig.)	30.080 (.000*)
Standard Error of Estimate	.40864
Sample Size (N)	115

Dependent Variable: Players

Significant Predictors: *Self-Belief, Determination*

Comparison of the two methodologies:

The current study aims to measure the difference of MT between elite and sub-elite players. The study also examines the influence of gender on MT. On the basis of the results of qualitative and quantitative data, it can be proved that for the abstract constructs like MT, it is productive to conduct both types of data analyses. Each method offered exploratory analyses that can be explained by developing themes and numerically measuring their significance.

Summary of findings:
1. Mixed method approach helped to develop theoretical understanding of MT.
2. Comparison of the two methodologies can provide framework for developing instruments that help measure MT for sports in general and tennis in particular.
3. Seasoned performers had 100% consensus on MT for being the single most essential trait of successful tennis.
4. According to elite player "Focus" "ability to deal with negative talk" and "public image", are essential properties of MT. Thus elite players rely more on these two properties of MT for their performance in tennis.
5. Factors like "trajectory", "social domain", "motivation" influence the performance of sub-elite players. The sub-elite players relate to mastering the technique of tennis as well as a strong concern for maintaining their motivational level to perform up to an optimal standard.
6. "Determination" and "Self-Belief" were significant determinants of MT. Almost 33% variability can be described with the help of these two properties of MT
7. Insignificant test for two properties of MT: "Positive-Cognition" and "visualization" were not significant as well.
8. The study proposes that if the properties of MT can be identified then players can be trained in accordance with the findings.

DISCUSSION AND RECOMMENDATIONS
The current study has examined MT with regards to tennis players. With the help of inferential statistics it has been found out that there is a difference between the MT of elite

and sub-elite and male and female tennis players with regards to MT. The findings of the qualitative data demonstrate research that both elite and sub-elite players relate to MT but in the case of elite players the reference is explicit. On the contrary, sub-elite players despite, relying on this measure are elusive about it at individual level. More research is needed to enhance understanding on the influence of culture and social with regards to tennis. Gucciardi and Gordon (2012) highlighted that cross-cultural research can offer more insight into fully comprehending the construct of MT.

With the prospect of increasing popularity of tennis the following recommendations are made for future research to assess the implications of mental toughness:

1. Comparison of team sports with tennis can help isolate more relevant properties of MT for tennis.
2. It is also recommended that comparison may be made between single and double match performances of the same tennis players to assess the extent of MT in both settings.
3. A longitudinal study in more diverse settings can also synthesize the construct of MT with special reference to tennis.
4. If an instrument is developed by following these recommendations then players can be accorded with training in the specific domain. In this regard Pre and Post-Hoc one way ANOVA tests can be used to measure the influence on their performance in tennis.
5. Future research may also establish a link between MT and physical fitness of the players.

Research Implications:
The limitations of the research warrant discussion:

1. Apart from type of players and gender more demographical variables like age, experience and socio-economic status can offer better insight into the construct of MT.
2. Experience of the seasoned players seem play a significant role in cultivating MT and can be investigated further to develop instruments to measure MT in tennis players. Due to the restriction placed by constraint of time could not been followed further.
3. The duration of this research stretched over two major tournaments of tennis and the research finding may comply with these events. A further investigation into a daily course of players' life can establish more firm ground to understand MT.
4. Due to the cross-sectional nature of this research and findings obtained through stepwise regression analyses for the quantitative data, it is important to conduct the research in diverse settings. Since these results have a tendency to become more sample dependent and may not be reliable.
5. The influence of personality-type has not been gauged.

CONCLUSION

With the help of mixed method analysis, results of the current study advance the "consensus" as well as "conceptual" domains of MT with special reference to tennis. The findings reinforce the already established properties of MT, and make contribution to tennis with regards to the existing literature. Consistent with Crust (2008), the study highlights the importance of the contextual and cultural cues which can explain the difference between the performance of males and females. The study also emphasized that monetary rewards and titles can also serve as major incentives for acquiring mental toughness thereby offering more avenues for future research in the field of tennis.

ACKNOWLEDGEMENTS

References:

ATP Rankings Defining Excellence since 1973. Retrieved on July 24, 2014 from

http://www.atpworldtour.com/Rankings/Singles.aspx?d=23.06.2014&r=1&c=# 07072014

Bull S.J, Sham brook C.J, James W, Brooks J. (2005). Towards an understanding of mental toughness in elite cricketers. J Applied Sport Psychology.

Connaughton, D., Hanton, S., & Jones, G. (2010). The development and maintenance of mental toughness in the world's best performers. The Sport Psychologist, 24, 168-193.

Crust, L. (2008). A review and conceptual re-examination of mental toughness: Implications for future researchers. Personality and Individual Differences, 45, 576-583.

Dale, G. A. (1996). Existential phenomenology: Emphasizing the experience of the athlete in sport psychology research. The Sport Psychologist, 10, 307-321.

Enders, Pamela Lynn, (2007). "Athletes "how tough are you". Retrieved on July 7, 2014 from

http://www.winnerscirclecoaching.com/resources/signUp.aspx?i=%2fresources%2fquestionnaires.aspx

Friend at Court The USTA HANDBOOK of Tennis Rules and Regulations (2012).

Golby, J., Sheard, M., & Van Wersch, A. (2007). Evaluating the factor structure of the psychological performance inventory. Perceptual and Motor Skills, 105, 309-325.

Golby, J., & Sheard, M. (2004). Mental toughness and hardiness at different levels of rugby league. Personality and Individual Differences, 37, 933-942.

Gucciardi, D., & Gordon, S., (2011). Mental Toughness in Sports: Development in Theory and Research. Retrieved on July 26, 2014 from

http://books.google.com.pk/books?id=fRM4-0qkgMQC&pg=PA112&lpg=PA112&dq=ppi-a+golby+et+al+validation&source.

History of Tennis- Origin of tennis game. Retrived on July 24, 2014 from http://www.tennistheme.com/tennishistory.html

Holloway, I. (1997). Basic concepts for qualitative research. Oxford: Blackwell Science.

Jeff Cooper. (2014). An Evolutionary History of Tennis Racquets. Retrived on September 24, 2014 from

http://tennis.about.com/od/racquetsballsstringing/a/evolmodracquet_3.htm

Jones, G., Hanton, S., & Connaughton, D. (2007). A framework of mental toughness in the world's best performers. Journal of Applied Sport Psychology, Vol. 21, 243-264.

Loehr, J. E. (1986). Mental toughness training for sports: achieving athletic excellence. Lexington, MA: Stephen Greene Press.

Mencinger T. (2014). Tennis Strategy Encyclopedia. Retrieved on September 28, 2014 from http://www.tennismindgame.com/support-files/tse.pdf

Middleton. S. C., Marsh, H. W., Martin, A. J., Richards, G. E., Savis, J., & Perry. C. (2004). Discovering mental toughness: A qualitative study of mental toughness in elite athletes. Retrieved on July 23, 2014 from

www.sectiononewrestling.com/discovering_toughness.pdf

Patton, M. Q. (1990). Qualitative evaluation and research methods. Newbury Park: Sage Publications.

Sheard, M. (2010). Mental Toughness: The mindset behind sporting achievement. Hove, East Sussex. Routledge.

Environmental Sustainable Development: Focusing on Solid Waste Reduction in Nyanya and Environ of Abuja, Nigeria

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ABSTRACT

The study focused on solid waste reduction in Nyanya and environ in Abuja Nigeria. A survey design was employed in this study. The population of the study constituted Nyanya residents and the businessmen in the major market. Three hundred and twenty men and women were selected from the sample using Bartlett, Kotrik and Higgins, (2001). Questionnaire was used to gather information from the respondents. The methods of data analysis technique used herein are percentage, means, standard deviation and t-test. The finding of the study revealed that the knowledge of the people about solid waste management had caused havoc on the way both the residents of Nyanya and the businessmen of the major market in Nyanya disposed their refuse within the community. The respondents opined that solid waste has become a predicament that they come to face as a way of life and their ability to resolve it needs external intervention as noted by 64.3% respondents who agree and 16.7% of the respondents who strongly disagree with. Government should make adequate provision for publicity on different media on the importance of proper solid waste disposal. Registered bodies on solid waste disposal should pay regular visit to Nyanya environment in order to stop inappropriate disposal of solid waste around the community. Also, there should be distribution of solid waste tanks within the community where the residents and the market people can dispose their refuse.

Keywords: Environment, Sustainable Development and Solid Waste

BACKGROUND

The rates of solid waste in our environment these days have become a thing of alarming despite the awareness from different environmental agencies oversee to the issue. Many times people complain of no proper site to dispose their refuse while in other cases the agencies due accuses the people of improper disposal. This has been the case lingering all over and no one is to hold responsible for the eyes sore even in the developed areas in most state including the Federal Capital Territory (FCT). A United Nations Report (August 2004) noted with regret that while developing countries are improving access to clean drinking water they are falling behind on sanitation goals. At one of its summit in 2000 (Uwaegbelun 2004) revealed that The World Health Organization- (WHO 2004) and United Nations International Children Education Fund- (UNICEF 2004) joint report in August 2004 that: "about 2.4 billion people will likely face the risk of needless disease and death by the target of 2015 because of bad sanitation".

The report also noted that bad sanitation – decaying or non-existent sewage system and toilets- fuels the spread of diseases like cholera and basic illness like diarrhea, which kills a child every 21 seconds. The hardest hit by bad sanitation is rural poor and residents of slum areas in fast-growing cities, mostly in Africa and Asia. Nigeria's major urban centers are today fighting to clear mounting heaps of solid waste from their environments. These strategic centres of beauty, peace and security are being overtaken by the messy nature of over flowing dumps unattended heaps of solid wastes emanating from household or domestic or kitchen sources, markets, shopping and business centers. City officials appear unable to combat unlawful and haphazard dumping of hazardous commercial and industrial wastes which are a clear violation of the clean Air and Health Edicts in our environmental sanitation laws, rules and regulation.

Solid waste is a common problem in all Nigeria urban cities, the bigger cities face more severe problems of waste generation and management than the smaller ones (Nest 2007, FMHE 2006, Onibokun 1999, & Adedibu, 1985). Emerging sub-urban in developing economies like Nigeria exhibit features of unplanned growth, population explosion and informal settlement leading to an irregular build-up of solid waste begging for timely clearance or disposal and treatment in order to reduce their hazardous effect on residents and enhance rather demean the quality of our environment needs to be tackled frontally, systematically, in an all-embracing manner. The UNEPA (2006), state that wastes that are not properly managed, especially excreta and other liquids and solid wastes from households and the community, are a serious health hazard and could lead to the spreading of diseases.

The report further states that unattended wastes lying around attract flies, rats, and other creatures that, in turn, spread diseases. Normally, it is the solid waste that decomposes and releases bad odour. The bad odor affects the people settled next to the dumpsite, which clearly shows that the dumpsites have serious effects to people settled around or next to them. There is therefore considerable public health concern over the possible effects of dumpsites on the health of people living nearby, particularly those where hazardous waste is dumped. Most solid wastes are disposed on the land in open dumps. Disposal of solid waste on the land without careful planning and management can present a danger to the environment and the human health. The environment should be clean and less polluted by all means. This means that waste should be managed at all costs to limit its effects to the environment (US Environmental Protection Agency, 2006).

The location of dumpsites has proved to be a problem to nearby residents in most parts of the world, particularly in Africa. Nigeria is no exception in the problems associated with waste disposal. These include the development of unofficial dumpsites and littering. In cases where there is a dumpsite, it is either unmonitored or creates an unsightly surrounding. For example, a dumpsite in Nyanya is poorly managed, yet it is too close to the residential community of environment and other nearby communities. There are homes which are hardly 200 meters away from the dumpsite. According to Marc (2006), the location of the dumpsites should be properly planned and managed to avoid risks to human health and the environment, at large. Corrective and management measures are likely to be expensive, complex, and pose serious threats to the environment and its habitants. Therefore, this study was design to investigate into solid waste reduction in Nyanya and environ.

Statement of Problem
In the last two decades, the issue of mounting solid waste within Nyanya in Federal Capital Territory (FCT) Abuja Nigeria and the suburb has been become a thing of paramount concern.

This has ranges from various forms of solid wastes, which has brought out all manner of sickness within the community. Moreover, the level of solid waste within the community if not adequately take care of can result to breakout of endermic within and also affect neighboring community. If people are to enjoy good health the prerequisite is that they should live in a clean, safe and healthy environment that is conducive for the state (Pasquini 2006). Bernard (2005), thus human activities may adversely affect the environment which many factors in the environment may also have negative or positive impact on man health and welfare. Thus, the Federal Capital Territory (FCT-Abuja: 8° 49l 23ll N; 7° 04l 10ll E) of Nigeria is one of the fastest growing urban settlements in the world (Encyclopaedia of Nations, 2012) that needs adequate environmental sanitation to keep residents healthy and safe.

Purpose of the Study
The purpose of the study is to investigate the impact of environmental sustainable development, focusing on solid waste reduction in Nyanya and environ of Abuja.

METHODOLOGY

A survey design was employed in this study. Respondents completed the questionnaire assessing their view on solid waste reduction in Nyanya and environ. Part I consisted of items on participant's demographic information such as age, sex, occupation, etc. Participants were drawn from residents of Nyanya and businessmen in Nyanya major market. In determining the appropriate sample size, a table of sample size determination developed by Bartlett, Kotrik and Higgins (2001) was used. According to Barlett et al. (2001), the recommended sample size for a study involving participants drawn from a population size of between 2000 is 499. Thus, the sample size for this study was set at 499. The instrument used employed a five point Likert type scale containing options which vary from Strong Agree (SA), Agree (A), Disagree (D), Undecided (U), Strongly Disagree (SD) and scored as follows 5, 4, 3, 2 and 1 respectively. The method of analysis focused on two variables: the independent variable and independent variable while it was analyzed using descriptive statistics (frequency counts, simple percentage, mean and standard deviation) and inferential statistics of t-test.

Respondents Demographic Data

Table 1: Demographic Data

Demographic	Area A (N=120)	Area B (N=45)	Area C (N=68)	Area D (N=55)	Federal Housing (N=32)	Overall (N=320)
Age						
<30	12.2	4.7	4.7	3.1	1.6	26.3
30-40	12.8	4.7	5.7	7.8	3.8	34.7
41-50	20.8	3.1	4.7	4.7	2.5	22.8
>=50	4.7	1.6	6.3	1.6	2.2	16.2
Sex						
Male	14.1	6.6	5.6	7.8	3.8	37.8
Female	23.4	7.5	15.6	9.4	6.3	62.2

Occupation						
Businessmen	12.2	6.7	6.7	6.9	3.2	34.7
Civil Servants	11.6	5.3	4.1	3.8	1.6	26.3
Consultant	4.7	5.3	4.1	5.3	2.2	21.6
Artisan	3.8	2.5	5.6	0.6	3.1	16.4
Work Experience						
< 5 years	4.7	5.3	4.1	5.3	2.2	21.6
5-9 years	3.8	2.5	5.6	0.6	3.1	16.4
10-14 years	11.6	5.3	4.1	3.8	1.6	26.3
>15 years	12.2	6.7	6.7	6.9	3.2	34.7
Employment Mode						
Full Time	22.2	7.2	15.0	14.1	6.3	64.9
Part Time	15.3	6.9	6.3	3.1	3.8	35.1

A total 320 respondents completed the questionnaires (a response rate of 64%). The respondents' age ranged between 23 and 59 years, with a mean age of 41.0 years (STD=10.8). The majority of the respondents aged 30-40 (40.8%) years and 41-50 (34.5%) years. More than two thirds (68.7%) of the respondents were female, and the majority of the respondents (52.4%) were businessmen (who also reside in Nyanya). The respondents' profile is summarized in Table 1 above.

Table 2: Result of Findings

Opinion	Undecided (%)	Strong Disagree (%)	Disagree (%)	Agree (%)	Strongly Agree (%)	Mean	Standard deviation
Satisfaction Level of Solid Waste Effect on the Environment of Nyanya							
i. Solid waste management practice is properly observed in my community	3.8	16.6	2.7	51.5	25.4	3.40	.58
ii. Burning of refuse in un-authorized place has no penalty in my community	6.2	2.7	14.4	42.1	34.6	3.07	.97
iii. Burying of solid waste is not that popular in my community	2.0	5.8	17.3	48.6	26.4	3.36	.50
iv gutter is another route of solid waste management methods in my community	-	2.4	16.2	62.5	18.4	3.48	.64
v. Recycling and reuse of solid waste is being practiced in my community.	-	49.9	50.1	-	-	3.29	.74
Impacts of solid Waste on the Health of Nyanya Residents							
i. There are several diseases ravaging in Nyanya as a result of solid waste management	10.1	19.5	14.0	35.5	20.9	2.83	1.03
ii. Building structures have great effect on the way solid waste is being managed in my community	0.2	11.8	9.5	38.9	39.1	3.28	.79
iii. Radioactive substances are being mismanaged in my community	-	9.1	11.7	44.8	34.4	2.93	.10
iv. The town clinic and other hospitals have experience higher population due to ailment related to solid waste	-	7.7	14.0	45.7	32.6	3.31	.75
v. Health workers normally educate my community on solid waste management and health status.	-	6.0	13.3	45.2	34.1	3.06	.47

Factors Affecting the Apposite Disposal of Solid Waste in Nyanya

i. There is a permanent waste disposal site in my community	-	31.5	45.2	13.3	7.3	2.79	1.04
ii. Local Government Area Council has concrete preparation for clearing waste	4.9	41.5	35.0	13.7	4.9	3.24	.78
iii. My community is aware of solid waste management	-	31.5	40.1	19.5	8.9	3.42	.62
iv. There are registered bodies in charge of waste management in my community	1.3	6.0	13.3	45.2	34.1	2.93	.83
v. There are special dumping site for solid waste in my community	2.4	8.4	18.4	44.6	26.2	3.15	.64
vi. There are Shortage of man-power or personnel to supervise the clearing of solid waste into the appropriate site	-	9.9	11.5	46.6	31.9	3.40	.58

DISCUSSION OF FINDINGS

The finding of the study revealed that the knowledge of the people about solid waste management had caused havoc on the way both the residents of Nyanya and the businessmen of the major market in Nyanya disposed their refuse within the community. The respondents opined that solid waste has become a predicament that they come to face as a way of life and their ability to resolve it needs external intervention as noted by 64.3% respondents who agree and 16.7% of the respondents who strongly disagree with.

The impact of solid waste on the health of Nyanya residents is yet to be fully verified as opined by the residents and the businessmen in the community. 61.7% agree that they are exposing to endemic with the site of the solid waste they co-habit with, which indicated that they are aware of the effect of solid waste in their community. The result also indicated that there are factors affecting the precise disposal of solid waste in Nyanya as 60.4% and 17.2% of the respondents who agreed and strongly disagree to this notion.

Factors affecting the clear-cut disposal of solid waste includes: no permanent waste disposal site in the community, lack of Local Government Area Council concrete preparation for clearing waste, lack of provision of registered bodies in charge of waste management in the community. More importantly shortage of man-power or personnel to supervise the clearing of solid waste into the appropriate site in the community needs to be corrected.

Test of Hypothesis

H_0: There is no significant difference between the adequate knowledge of solid waste management and the proper disposal of solid waste in Nyanya environ.

Table 3: Two-tailed t-test Analysis on the Mean Scores Knowledge of Solid Waste and Adequate Disposal of Solid Waste

	Mean	Std. Deviation	Std. Error Mean	95% Confidence		t 9.97	df 319	Sig. (2-tailed)
				Lower	Upper			.00
Knowledge of solid waste management and adequate disposal of solid waste	.33	.59	.03	3.34	3.46			

The t-test value 9.97 was significant at 0.05 level of significance. The null hypothesis was therefore rejected and the alternative hypothesis accepted.

CONCLUSION

Since the alternative hypothesis is accepted and null hypothesis was rejected, conclusion is made that there is a significant difference between the knowledge of solid waste management and adequate disposal of solid waste.

RECOMMENDATIONS

The research has identified problems that are associated with solid waste reduction in Nyanya and environ of Abuja. These problems emanate from the knowledge of solid waste management, registered bodies in charge of solid waste management in the community, special dumping site and shortage of manpower/personnel to supervise proper clearing of solid waste to the designated place. In views of this, the government should make adequate provision for publicity on different media on the importance of proper solid waste disposal. Registered bodies on solid waste disposal should pay regular visit to Nyanya environment in order to stop inappropriate disposal of solid waste around the community. Also, there should be distribution of solid waste tanks within the community where the residents and the market people can dispose their refuse. Health workers should joint hands with the environmental protection agencies to sensitize the residents on the importance of their health and the reason to stay in a clean environment.

References

Adedibu, A.A. (1985). A Comparative Analysis of Solid Waste Composition Generation in Two Cities of a Developing Nation. The Environmentalist, 5(12): 89 – 103.

A United Nations Report, (2004). Waste Management: Including the UNON Sustainable Procurement Policy on the United Nations Compounds. Garigi, Kenya.

Bartlett, J., Joe, K and Chadwick, H. (2001). Orgainizational Research Determining Appropriate Sample Size in Survey Research. Information Technology Learning and Performance Journal, 19 (1): 43-50.

Encylopedia of Nation, (2012). http://en.wikipedia.org/wiki/Municipal_solid_waste. Retrieved 12/3/2014.

Federal Ministry of Housing and Environment. (2006) Nigeria, Monograph Series No 2. p.3.

Marc, J.R. (2006). Collection and Disposal Rate Studies are a Valuable Tools. Public Works Magazine. www. Scsengineer.com/papers/Rogoff%2. Retrieve 10/04/2014.

NEST: Nigerian Environment Study Action Team (NEST, Ibadan 2001) (2007). Sunday Vanguard, January 14, 2007, P 15.

Onibokun, A. (1999). *Managing the Monster: Urban Waste and Governance in Africa*: International Development Research Centre.

Pasquini, M,W & Harris, F, 2005. Efficient Use of Resources: Urban Waste Ash and Soil Fertility on the Jos Plateau, Nigeria. Area, Vol. 37, No. 1 pp. 17-29. JSTOR Archive.

United Nations Environment Programme, UNEPA (2006). State of Waste Management in South East Asia. Division of Technology, Industry & Economics: ASEAN.

Uwaegbulam, C. (2004). World is Meeting Goals of Safe Drinking Water but Falling behind on Sanitation, says UN. The Guardian, Monday, August 30, 2004. pg. 50.

WHO/UNICEF (2004a). Meeting the MDG Drinking Water and Sanitation: A Mid-Term Assessment of Progress. Geneva: WHO/UNICEF. ISBN 92 4 156278 1.

WHO, (2004b). Rolling Revision of the WHO Guidelines for Drinking-Water Quality, Draft for Review and Comments. Nitrates and Nitrites in Drinking-Water, World Health Organization (WHO/SDE/WSH/04/03/14)

Toward an Empirical Inquiry of Religious Language in The Interface of Libation Rituals in Africa: Experience From Ibibio, Nigeria

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ABSTRACT
Experience to date has highlighted the importance of language in the relationship between God and man as exemplified in the matrix of all human endeavour. This is because prior to its being a tool that is used by humans; language had been the foundation which supports human beings for the purpose of communicating his intentions. This paper examines religious language of libation in Ibibio indigenous knowledge system with special focus on its problems of traditional equivocation and analogy in an attempt to provide a meaningful vehicle by which God can be expressed. This paper discovers that in most recent findings on libation, it is more creative, spiritual, dogmatic, linguistic and imaginative medium for religious assertions through incantation and invocations which manifest beyond an empirical base. The paper concludes that libation rituals are meaningful medium of communing with the spirit.

Key words: Religious language, Libation, Worship, Ibibio Rituals, Communication

INTRODUCTION

Reminiscent of the beliefs and practices in African Traditional Religion is libation rituals which have significantly become involved in the process of Africa's self reflection and identity construction by means of its cultural representations. Scholars like Epey, 2012, Olupona: 2000, Nyame: 2009, Mbiti: 1990, Anti: 1987, to mention but a few, by their findings attest to the fact that libation as a cultural institution is vital regarding religious identity of the Africans and symbolizes something of a revelatory process towards understanding not only the religious culture of the people but indigenous knowledge and communalism in their ritual performance. The libation observance is a ritual that is performed throughout the African continent. However, inconsequential differences occur in language and format of the celebration depending on the customs and the traditions of each ethnic or tribal group. Even though it is possible to approach religion from various perspectives, it is pertinent to consider it from the perspective of the nature of language used in its liturgical process. Liturgy is a religious parlance used in describing the prescribed forms of rituals for public worship. It can further be defined as a means of communication and/or communicating with the deity within the context of worship (Abanuka 1991).

Throughout Africa, libation is taken to be an essential aspect of worship where the Supreme deity, divinities, ancestors and the transcendental spirits are addressed or called upon to participate in the worship and intervene in the affairs of the people. The question then is how is this extra-mundane form of communication achieved? That is where language as a medium of communication features prominently. That is to say, it is in the sphere of religion that the question "What is language?" becomes a fundamental issue. Ordinarily speaking, we often

suppose that language is treated carefully in areas such as literature or literary studies and poetry. But it would be interesting to note that the language arts give expression to all things through words, thus, giving them preference over colors or/and sounds. Yet, in the language arts, words do not reach the point of being able to lay bare the deepest foundations of language (Lystad, 1999). This is because literature presupposes the existence of language. Expectedly, in religion, by contrast, the source of language can be experienced for the first time when words become manifest in human life. In other words, religion is none other than that place where language is realized as the route of communication between human beings and that which transcends them, such as gods, divinities, ancestors and other spirit elements. However, it has become very difficult for people living in the contemporary world to experience directly the unfathomable and inconceivable mystery of language. This is why John Locke (1632–1707), an English 17th Century philosopher stated that humans are social animals and that language is a tool which humans use to make their respective intentions known (Appiah-Kubi, 1982).

With the advancement of science and technology, this view of language came to be seen as self-evident and widespread acceptance came to be given to the view that language is nothing more than a means for the transfer of information by human beings. This way of thinking lies at the base of the consciousness of people in the contemporary world. Similarly, Heidegger corroborates the fact that language is truly an inconceivable mystery because although we may think that human beings speak language, in fact it is the language that is speaking. He reasons that the German phrase ("Die Sprach Spricht.") "Language speaks" indicates that prior to its being a tool that is used by humans; language had been the foundation which supports human beings. Thus, if language does not speak, human beings will not be able to speak. This therefore lends credence to the fact that the supernumerary rite of libation in Ibibio in particular and Africa in general have the capacity to create a communication link, bond, and revitalization in the human relationships with deities, ancestors, and God in order to provide for human needs. This study is therefore an attempt to evaluate the hidden dimension of language in the libation rituals of Ibibio traditional religion and knowledge system.

CONCEPTUAL BACKGROUND

Libation is one of the oldest and perhaps least understood religious rituals. It is the sacrificial pouring out of liquid. Its primary importance seems to lie in the act of pouring, since the liquids that are poured out (wine, liquor, milk, honey, water, oil and in some cases, blood) and the places where this is done (on the ground, into chasms, upon the altar, over the sacrificial victim, into a sacrificial bowl) vary and change. As a religious ritual, libation can be traced as far back as the Bronze Age by means of libation pitchers and bowls discovered in excavations or depicted in stone reliefs and vase paintings or on gems, seals and rings (Adediji, 2000). Etymologically, the word libation is derived from a Latin word "libatio" meaning "sacrificial offering of drink" and in most ancient sources it was a separate gift offering. It is also connected with the Greek noun "loibe" which directly translates to what is known as "libation" and the verb "leibo", which connotes the act of pouring the libation (Betz 1987).

In Babylonian and Assyrian religions, it was primarily the duty of the king's office to offer libation to the gods. It was part of the meals presented to the gods on altar tables, around which the divinities gathered eagerly. It was also common in the Greco-Egyptian period and in Israelite religion, libation was central to the cult of most ancient powerful nations. Jewish religion was however compelled to abandon its sacrificial rituals and with it libations, because of the destruction of the Jerusalem Temple in 70 CE. (4)

The practice of libation pouring, however is not unknown in the New Testament (see John 7:37-39). But during the Festival of Shelters or Tabernacles, Jesus stood up in the Temple and with a loud voice he said: ". . . whoever believes in me, streams of life-giving water will pour out from his heart . . .". (5) (The Living Bible) This saying was uttered during the last and most important day of the Feast. On this day, a priest fetched water with a golden pitcher from the Pool of Siloam. This was brought into the Temple and while the Hillel psalms Psalms 113-118) were being sung and flutes being played by the Levitic choir, the water was poured out on the altar as an offering to God. It was within this cultic background that Jesus spoke these words. St. Paul similarly applies the concept of libation with its deep theological meaning in Philippians 2:17, "And even if I am offered like a drink offering, giving myself for the cause and work of your faith, I am glad and have joy with you all".

In the same vein, libation in the Old Testament received a much serious attention as reference to it is made in very many passages in the Pentateuch. Beginning from Genesis, the first reference to the pouring of libation is made. It is mentioned in connection with God's renewal of the covenant with Jacob. "And Jacob set up a Pillar in the place where he had spoken with him, a Pillar of Stone; and he poured out a drink offering on it, and poured oil on it" (Genesis 35:14). In response to a call to settle in Bethel, Jacob instructed his household to purify themselves by destroying the foreign gods they had brought with them, and washing and putting on fresh garments. They are to do away with all cultic practices which are incompatible with the Divine call. Upon their arrival in Bethel, God renewed his covenant with Abraham. Jacob and his children will be fruitful and possess the land of Canaan. After this theophany, Jacob set up a stone pillar in the place where God had spoken to him and poured wine over it as a drink offering to God and anointed the pillar with olive oil (living Bible), by pouring oil on it (Baran, 1998). This undoubtedly, was an act of worship with offering involving Libation rituals and not a mere consecration. It was an acknowledgement of God as the source of both material and spiritual blessings, for oil in Israel symbolised wealth, abundance, prosperity (Deuteronomy 34:24), divine honour and favour (Deuteronomy 32:13, Job 29:6, Psalms 23:5, cf. Joel 2:24), joy and gladness (Psalms 45:7, Isaiah 6:13).(2).

 Thus what Jacob did was a ritual pouring of wine and oil in acknowledgement of God as the source of his life and the life of his household who had purified themselves to walk with him.

It is important also to note that among the essential elements in the regular daily sacrifice is a drink offering. Libation was therefore a regular offering in the Old Testament days especially in Israel (Exodus 29:40-41). References to libation utensils confirm the great importance attached to this ritual act. They are to be made of pure gold (Exodus 25:29; 30:9; 37:16, Numbers 4:7, I Chronicles 29:21, II Chronicles 29:35). These bowls are chalices for pouring out the wine and are placed on the table of shewbread. Thus not only was libation a common act of worship, the utensils used were to befit the glory of God - bowls made of pure gold. This was to reflect his nobility and royal dignity. Furthermore, the vessels for the altar were made by one chosen by God and filled with his spirit: ". . . He has filled him with the spirit of God and endowed him with the skills and perception and knowledge for every kind of craft . . ." (Exodus 35:31 f.). The vessels are thus made under the inspiration of God. God chose Bezalel and filled him with his spirit and granted him ability, intelligence, knowledge and craftmanship to design and produce the cultic equipment for service in the sanctuary. And among these are jars and libation bowls (Exodus 37:16). One can safely conclude that libation was of great importance to the cultic life of Israel, for the vessels used were made by people specially chosen and filled with the spirit of God.

The significance of libation is again stressed in the code of Holiness (Leviticus Chapter 17 - 26) where it is to be one of the elements to be presented to Yahweh on the day of First Fruits

(Leviticus 23:10-13, cf. Numbers 15:5). As in Exodus 29:40-41, the quantity of wine to be poured is specified. This cultic act of 'Sheaf-waving' took place at a time near to the Feast of Unleaven Bread marking the beginning of harvest. And in addition to the meal offering, there was a supplementary drink offering of wine, which was probably to be poured out before the altar. (5) According to Leviticus 23:14, before this cultic duty had been carried out nothing might be eaten from the new harvest either in the form of a roast ear of corn or more probably raw grains of corn rubbed in the hand.(6) Similarly, libation is poured during the important feast of Weeks (Leviticus 23:18). In Leviticus 23:37 Israel is reminded that in all the great ritual feasts where the people are called together in a holy convocation, libation must be poured to Yahweh. It is a holy act to be performed by the holy people in reverent service to and acknowledgement of Yahweh. And in Numbers 4:7 the pouring of libation seems to be so well known that it needs no further comments except a mere reference to "Bowls and libation jars".

Not only was libation a regular cultic practice. It also formed part of the Nazarite purification rites, which will enable him to enjoy normal life on completion of his period of separation or consecration. Among the offerings he is to make is the pouring of libation regarded as ritually necessary for his release (Numbers 16:15 & 17). The Nazarite because of his dedication to Yahweh was a shining example of holiness and piety. It is specifically stressed (Numbers 15) that libation is a divine command which the people must observe in the land of Canaan. Together with other sacrifices they are means of upholding the covenant. Thus not only are the moral commandments necessary; the faithful performance of the cultic practices were equally important. According to Numbers 5:1-16, every sacrifice is to be accompanied by an offering of meal, oil and wine as prescribed. Hence on the calendar of public cultic rituals which are to be offered for the nation as a whole in a year by the priest, libation has its rightful place (Numbers 28). The public cultic rituals, as opposed to the private offerings of individuals include the daily offerings (Numbers 3-8), the sabbath (Numbers 9-10), the new moon sacrifices on the First day of each month (Numbers 11-15), the feast of Unleavened bread (Numbers 16-25), and the feast of Weeks (Numbers 26-31). The main interest here is the recognition that offerings are to be made at a set time and on each of these occasions libation is to be poured.

In the daily sacrifices libations are to be offered in the holy place with a strong drink. "The accompanying libation is to be at the rate of one quarter of a hin for each lamb; the libation of strong drink for Yahweh must be poured out in the sanctuary" (Numbers 28:7). It is apparent that intoxicating drink can and is offered to Yahweh in the holy place. We may also add that feast period like the Day of Atonement and the Feast of Booths (the Autumn Festival) are marked by the pouring of libation. The Feast of Booths is celebrated for seven days and on each day libation is poured as part of the day's sacrificial offering. Expectedly, the fundamental position of libation in the Old Testament needs no further substantiation as the act is found in all the major sections of the Old Testament except in the Wisdom Literature. Libation is at the core of ancient Israelite religion. It is practiced as a cultic act of communion and communication between the people of Israel and their ancient God, Yahweh. The main elements used in the pouring of libation were water, oil, wine and the blood of sacrificed animals. Libation was in earnest an act of worship. It was an acknowledgement of God as the source of both material and spiritual blessings (Soola, 1999).

Background Information on Ibibio
Ibibio is the ancestral name for the people regarded as most ancient of all the ethnic groups in Nigeria today. The name is a family name for the different nationalities of Ibibio extraction

dispersed throughout the present day Akwa Ibom State. Historically, the Ibibio people belong to the Kwa speaking people of the Benue-Congo group of Niger-Congo language (Udo, 1983). They are related to the Anaang and the Efik peoples. During colonial period in Nigeria, the Ibibio Union an umbrella body for the Ibibio people asked the British for recognition as a sovereign nation (Noah, 1988). In Akwa Ibom State, the Annang, Efik, Ekid, Oron and Ibeno share personal names, culture, and traditions with the Ibibio. They also speak closely related varieties of Ibibio-Efik. Prior to present-day Nigeria they were regarded as Ibibio tribes speaking dialects of Ibibio. According to Monday Noah, a foremost historian, in his work "Ibibio Pioneers in Modern Nigerian History" writes:

> *"The Ibibio occupy mostly the mainland parts of the Cross River State and constitute the fourth largest ethnic group in Nigeria. The major Ibibio sub-groups include the Oron, Eket, Ibuno, and Annang and there are also some Ibibio communities in most of the fishing settlements along the estuary of the Cross River. The Efik people of Calabar are descendants of Ibibio people" (Esen, 1982).*

However, Annang, Efik and other related people see themselves as different people. The name Ibibio is a derivative of the Ibibio word "Ibio-ibio" literally meaning short or brief but does not in any way have anything to do with the height of the Ibibios. The name nevertheless was given to the people due the brief way of doing things attributed to them (Nssien, 1991). The name Ibibio identifies the largest subdivision of people living in southeastern fringe of Nigeria, in Akwa Ibom State, and it is generally accepted and used for both ethnic and linguistic descriptions. It is the candid observation of Talbort Amaury that the Ibibio people are probably the indigenous natives from whom most small tribes of Qua Ibom and Calabar are descended. He further stated that the early settlement of the Ibibio in the southeastern coastal area of Nigeria led to the development of a number of sub-clans, notably the Anang, the Efik, and the Oron. Talbot further suggested that by 7000 BC permanent settlement of some of the ethnic groups in Ibibio land had already begun and notes that the Ibibio language is probably the most ancient of all the semi Bantu languages (Talbort, 1969).

Geographical and Historical setting of Ibibio
The Ibibio people occupy the palm belt region in the southeastern part of Nigeria. The area is located in Southeastern Nigeria also known as Coastal Southeastern Nigeria or what is today known as the South South region (Abasiattai, 1987). The Ibibio people share boundaries with their Igbo neighbours in the Northwest hinterland and with the Efik Southeast ward. They also share the south-west coastal boundary with the Okpobo/Ijaw in Rivers State. They are bounded in the northeast by the cluster of Ejagham nation such as the Qua, Efut and Ekoi up to Southern Cameroon (Udo 1983). Prior to the existence of Nigeria as a Nation, the Ibibio people were self-governed group. They became a part of the Eastern Nigeria of Nigeria under British colonial rule. During the Nigerian Civil War, the Eastern region was split into three states. Southeastern State of Nigeria was where the Ibibios were located, one of the original twelve states of Nigeria) after Nigerian independence (Obio-Offiong, 1958). The Efik, Anaang, Oron, Eket and their kith and kin of the Ogoja District, are also members of the Southeastern State. The state (Southeastern State) was later renamed Cross Rivers State and in 1987, the military through decree No.24, carved out Akwa Ibom State from the then Cross Rivers State as a separate State (Abasiattai, 1987).

Socio-Political Setting of Ibibio
The Ibibio traditional society operates a "stateless society" which, according to Ekong (1988), is organized on the segmentary unilineal principles. Traditionally Ibibio society consists of communities that are made up of Large Families with blood affinity each ruled by their Constitutional and Religious Head known as the Obong Ikpaisong. The Obong Ikpaisong ruled

with the Mbong Ekpuk (Head of the Families) which together with the Heads of the Cults and Societies constitute the 'Afe or Asan or Esop Ikpaisong' (Traditional Council or Traditional Shrine or Traditional Court') (Ekong, 1983). In the traditional setting the Traditional Ruler's Councils lay down laws and regulations for the governance of all units. For the enforcement of these laws each Ibibio village has its own Ekpo or Ekpe Society. The decisions or orders of the Traditional Council or the Obong Ikpaisong were enforced by members of the Ekpo, Ekpe and/or Obon society who act as messengers of the spirits and the military and police of the Community (Oku, 1989). Ekpo members are always masked when performing their policing duties, and although their identities are almost always known, fear of retribution from the ancestors prevents most people from accusing those members who overstep their social boundaries, effectively committing police brutality. Membership is open to all Ibibio males, but one must have access to wealth to move into the politically influential grades (Nssien, 1991). The Obon society with its strong enticing traditional musical prowess, with popular acceptability, openly executes its mandates with musical procession and popular participation by members which comprises children, youth, adults and very brave elderly women. However, the principal women's society is the Ebre society, while the principal men's society is the Ekpo society. Ibibio society consists of villages, (a village consist of a number of families comprising the husband, his wife/wives, children and grandparents) each of which belongs to a larger unit known as the "Clan." The clan was often named after the founder of the first village in the area. The duties of a head include the settlement of disputes among members of the families, the villages or the clan (Nssien, 1991). He is not only a true mediator but also performs sacrifices at the ancestors' shrine for the well being of the families in the village. The society is mostly polygamous and each Ibibio village is independent and equal in status.

Religious Setting of Ibibio
Ibibio believe that there is a Supreme Being called Abasi who created all things including the gods (ndem) to who He gives charge of the different aspect of human affairs. However, Ibibio religion has of two dimensions, which centered on the pouring of libation, worship, consultation, communication and invocation of the God of Heaven (Abasi Enyong) and God of the Earth (Abasi Isong) by the Constitutional and Religious King/Head of a particular Ibibio Community who was known from the ancient times as the Obong-Ikpaisong (the word 'Obong Ikpaisong' directly interpreted means King of the Principalities of the Earth' or 'King of the Earth and the Principalities' or Traditional Ruler) (Faithman, 1999). The second dimension of Ibibio Religion centered on the worship, consultation, invocation, sacrifice, appeasement, etc. of the God of the Heaven (Abasi Enyong) and the God of the Earth (Abasi Isong)through various invisible or spiritual entities (Ndem) of the various Ibibio Division such as Etefia Ikono, Awa Itam, etc. The Priests of these spiritual entities (Ndem) were the Temple Chief Priests of the various Ibibio Divisions (Ekong, 1983). A particular Ibibio Division could consist of many inter-related autonomous communities or Kingdoms ruled by an autonomous Priest-King called Obong-Ikpaisong, assisted by Heads of the various Large Families (Mbong Ekpuk) which make up the Community. These have been the ancient political and religious system of Ibibio people from time immemorial. Tradition, interpreted in Ibibio Language, is 'Ikpaisong'. Tradition (Ikpaisong) in Ibibio Custom embodies the Religious and Political System (Faithman, 1999). The word 'Obong' in Ibibio language means 'Ruler, King, Lord, Chief, Head' and is applied depending on the Office concern. In reference to the Obong-Ikpaisong, the word 'Obong' means 'King' In reference to the Village Head, the word means 'Chief'. In reference to the Head of the Families (Obong Ekpuk), the word means 'Head' In reference to God, the word means 'Lord'. In reference to the Head of the various societies - e.g. 'Obong Obon', the word means 'Head or Leader' (Ekong, 1983).

Demographic Setting of Ibibio
The Ibibio tribe is the 4th largest ethnic group in Nigeria, and barely outnumbered by the Igbo neighbors (Noah, 1980). The Ibibio numbered over two million in the 1963 census and 3.76 million based on census demographic data of 1991(Adamu, 1978). Ibibio can be divided into the following six major divisions: Riverain (Efik), Northern (Enyong), Southern, (Eket), Delta (Andoni-Ibeno), Western (Anang), and Eastern (Ibibio proper). These main groups are further divided into groups that are identifiable by geographical location. The Efik reside mostly in the Calabar Province, and are divided into Enyong (Aro), Calabar, Itu, and Eket groups. The Riverain area also includes the Cameroons, inhabited by the Kumba and Victoria groups (Udo, 1983). The Eyong are divided into the Enyong (Aro) and Ikot Ekpene of Calabar Province and the Bende division of Owerri Province. The Eket division resides in Calabar Province. The Adoni-Ibeno are divided into the Eket and Opopo of Calabar Province. The Anang are divided into the Abak and Ikot Ekpene of Calabar Province, and the Aba of Owerri Province (Northrop, 1973). The Ibibio proper are divided into the Uyo, Itu, Eket, Ikot Ekpene, Enyong (Aro), Abak, Opopo, and Calabar groupings (Uya, 1984).

Libation in Ibibio Liturgy and Worldview
The act of pouring of libation is central to Ibibio religio-cultural life and features prominently in all political, social, economic and religious activities. The performance of libation involves a ritual that many Ibibio perform on a variety of occasions—some daily, others seasonal; some low, others high; some serious, others playful; some highly formal others informal. One main feature of the African Religion is the pouring of Libation during worship. When libation is poured, the spirit of God, divinities and that of the ancestors are invoked and this is the African way of praying to God. In that regard, the people are employing and portraying their own culture and tradition to serve God. Libation in Ibibio worldview is a magico-religious ritual that entails pouring liquid on the ground, or sprinkling it on ritual participants or sacred objects, as a means of communication between human and spiritual beings (Atakpo, 1988). The liquids used and the conditions of the ritual vary by geographical, ethnic, and temporal contexts.

In traditional Ibibio cultures, libations accompany sacrifices, rites of passage, and prayers. In litany proceedings, the participants recall the meditative links between spiritual beings and people. Libations are generally intended to earn the favor of supernatural beings or spirits (Udoh, 1987). In traditional Ibibio religion, (as in ancient religions, such as those of the Babylonians and the Assyrians), libations could be poured as separate offerings to spirits, gods, and God, through the ancestors. In traditional belief, ancestors dwell in the ground as masters of the land. Participants in the libation believe that the ancestral spirits can effectively receive water, milk, honey, oil, beer, spirit (hot drink), liquor or palm wine or other beverages as the occasion demands through the ground. Therefore, libations are poured onto the earth through natural or artificial cracks, openings, or holes. The preferred sites for religious libations are gravesides, alters, homestead shrines, and sacred groves. The main objective of libations in indigenous Ibibio religious and social contexts is to appease ancestral and other spirits, thus encouraging their continued favor and good will. In Ibibio tradition, the foremost rationale for libation ritual is to give honor and thanks to God Almighty the Supreme Being for His benevolence, then to pay homage and respect to the ancestors who are held in deep reference and even worshipped, our grandparents and great grandparents. During the libation, we ask their permission, guidance and blessings for the event we are about to take part in. Libation rituals are also performed in recognition of the living leaders (those people whose activities make positive impacts on the community) for their contributions and good leadership in the community. In a general sense, libation rituals are carried out in order to honour the leaders of yesterday with hope for the leaders of tomorrow.
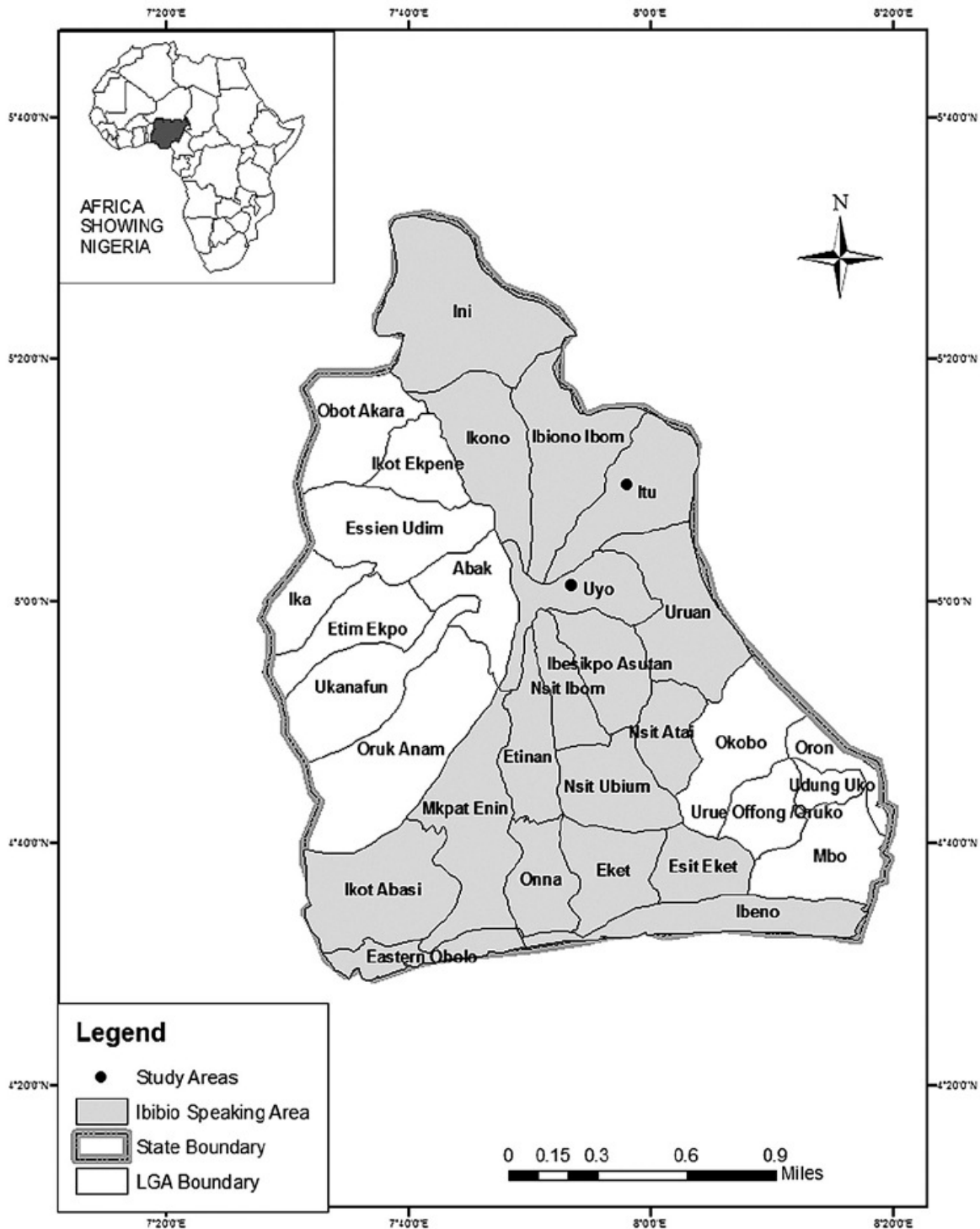
Figure 1: Map of the study area

Such rituals are also meant to propitiate spirits that cause disease and other calamities (Udoh, 1987). The libations in Ibibio viewpoint are therefore intended to prevent illness or misfortune, protect human beings, and facilitate curing. In Ibibio culture, the ritual of pouring libation is an essential ceremonial tradition and a way of giving service to the ancestors. Ancestors in this culture is not only respected, but also invited to participate in all public functions and events (as are also the gods). In this circumstance, prayers are offered in the form of libations, calling the

ancestors to attend and take action. The ritual is generally performed by an elder, the head of the family, a cultic functionary, a title chief, and/or a nominee with traditional know-how. Typically, some traditional wine like local gin popularly known as "ufofop", and palm wine are often used for the libation, and the libation ritual is usually accompanied by an invitation (and invocation) to the ancestors and gods (Udoh, 1987).

Execution of Libation in Ibibio

Religious leader in African traditional religion perform diverse roles in the course of carrying out their religious duties. One of such religious functions is that of talking to the spirits (deities, divinities, ancestors) through the process of pouring of libation. The dispensing of libation is a special role carried out by a priest known as "oku idem". An "oku idem" in Ibibio must not be a young person. He must be aged 45 years and above. In addition, he must have initiated into secret societies in the land including "Ekpe", "Ekpo", "Obon", "Ekong" and others. Hierarchically, there is also the chief priest (akwa oku idem or oku inam) who officiates in state functions. He must be an elderly priest who has attained the age of 65 years and above and who have also initiated into "inam" cult in the land. The function of administering libation in any public function is carried by these specialists. However, the performance of libation and the officiant of the ritual in Ibibio land depend on the occasion that warrants the rite.

Libation and Invocation

The traditional liturgy of libation requires some element of worship or ritual practice of inviting the spirits. This simply put, is the act of pouring some liquid to the spirits which is accompanied with prayers. Citation for deities is evident during libation rites in all the following occasions: Traditional marriage rites, burial rites, communal and family settlement of disputes, initiation rites, sharing of properties (either family or communal), foundation laying ceremonies, coronation ceremonies, and installation of new governments to mention just but a few. During these rituals, libation is poured on the ground before the shrine or on the emblems of the divinity. The offerer must be in a sound state of mind in order not to make any mistake in the presentation. The observance is usually referred to as "adue ukot akpa itong" meaning any mistake committed is always costly, sometime resulting in dead. This is because the Ibibio people believe that "ekpo akpa anyen ikpaha utong" which means that the spirit is alert to everything happening on earth. They do not see but hears everything. Also, the spirit will not take it nonchalantly if she is slighted during the presentation. Performing libation rite is equivalent to embarking on a journey. It is tricky, risky, and procedurally intricate. That is why the people are always happy and welcome the offerer back to his seat whenever he successfully accomplishes a particular task of this offering sacrifice to the spirit.

The significance of libation lies on the belief that since the liquid softens the ground, it symbolically opens the way to the presence of the divine power or powers so that they may favourably treat the offerer. As a dominant element, incantation and invocation is a common practice. Invocation is the act of addressing or calling upon the supreme deity or divinities as well as the spirits to respond and participate in the affairs of the people. It usually takes place during the pouring of libation (Adedeji, 1971). As the people pours the libation on the ground, the officiant pours the wine and addresses the divinities, ancestors and spirits by name, attributes and praise appellations and thereafter invites them to attend and accepts the worship. In some places, a gong is sounded to create an atmosphere of silence or solemnity. The confidence and hope of the people, their belief in and sense of dependence on the divine beings are all made manifest. The capability of the divine beings to supply the needs of man and the fact of the general relationship between God and men are made evident. Sometimes, the officiant uses a song which leads to ecstasy, where the devotee is believed to be possessed by the spirit of the divinity. In this state, the officiant may become the mouthpiece of the divinity, taking messages from him to the people.

Libation Presentation in a case of settlement of dispute in Ediene Clan Council:
Everybody is seated, before the commencement of business, the clan head invites the "oku idem" libation priest to perform the rite. He gets up pick a tumbler and turns in a good quantity of the local gin known as "ufofop", he then walks away from the table to where he can see the sky, then he starts with the <u>citation of the names of the deities</u>: "Abasi Onyong, Abasi Isong. Etime ototod Abasi ndien anye atuak isong. Ese idim ndom, udi Ediene, abam adep, Etefia Ikono, etok idim Ibiaku, udooh Oku, anantia Ibiono, edoho ekid, anyan Nsit, atakpa ndem Uruan (above are names of some major divinities in Ibibio). While mentioning each divinity, some quantity of wine is poured in acknowledgement. **Recital:** Aahg! Mme ette mi mbok eda ye ami, endat eka, endat enyong. Ette unen adia itin, eka unen adia itin, nyin ukim atipe ukim, ukpa atipe ukpa. Mmamana ndikut inuho ebot, idoho mmamana ebot aman. Mfin ibohoke mi, ikedi adidiodiong, ikedihe adibiabiat. Edue mkpo obuma ase onyong. Oduok ntong ken tong ekene. Owo idoho abasi. Afaha ikide Afaha ikpa ekong. Aniekan Abasi, Mbok, imidi utumo mbufo. Ekudaka ekpong owo. Ediwana ye nyin. Se anie ufok ibok ano ibok ke ibok adia. Edinwong mmin mi o!!!, edidia mkpo. Mbok edida ye nyin (Essien, Participant Observation, 2012).

English Translation of the recital:
Please our fathers please, take me go and take back. Father chicken eats from refuse dump, mother chicken eat from refuse dump, iroko begets iroko, cedar begets cedar. I was born to see the goat bends and walk, not when I was born before goat was born. Today, we gather to repair, not to destroy. He who offends the thunder watches the sky. Whatever is your action, the reaction comes back to you. Man is not God, brother and "imaan" defends a brother in danger, who surpasses God? We have come upon thy feet. Leave us not. No one can defeat God. Please, we have come to consult you, do not forsake us, come and share with us. Today we are present here. Come and share with us. Whenever I mention your name, I must give you wine to drink. Come and drink and eat. Whatever the herbalist gets is what he gives to his juju. Come and drink, come and eat. Please come and eat with us. At this point, the recital is concluded and the remaining part of the drink offering will be poured by the officiant with two hands to show respect. And then walks back to his seat while the audience or those that gathered would say, Amen! Well done for talking, welcome. The chairman of the occasion then takes over the case settlement and proceedings (Essien. Participant Observation, 2012).

Libation and Citation of Ibibio Deities
In addition to historical allusion in libation, a libation in Ibibio tradition recognizes the origin of the deities and their functions. Several deities in the traditional pantheon are usually mentioned together with some Ibibio clan names. However, the recital of libation text in Ibibio is done hierarchically beginning from the resident or landlord divinity to the community, societal and the national or general divinity. This is to enable homage or recognition to be duly accorded and protocol to be appropriately observed. A typical libation liturgy in Ediene, Ikono local government area of Akwa Ibom state involves the invocation of the following dieties during the libation sacrament: (a) Ese Idim Ndom, (b) Udi Ediene, (c) Abam adep, (d) Etok Idim Ibiaku, (e) Etefia Ikono, these are the major divinities from Ediene in Ikono. Upon the invocation of these divinities, the deities of the neighboring communities will also be invited. They include: "Anantia Ibiono", "Udo Oku", "Edoho Eket", "Anyan Nsit", "Esihi Etebi", "Atakpa Ndem Uruan" and others before "Ibom" which is the general deity for the Ibibio people (Ekpo-Ndueso, 2012). The communal element in the ritual is manifest in the basic fact that pouring libation is almost always a group event, not an individual affair (Oreh, 1978).

Relatedly, the performance of libation ritual is conceived as a poly-vocal utterance, not a solo presentation. The leaders engaged in the recital are always in a literal sense speaking for "us" and "we, instead of "I" or himself. His is the embodiment of a group voice, of collective aspirations of the people. The strongest support for this conception comes from the attitudes to commit error or omission that are displayed in the course of performance (Abrahamson, 1951). If, for example, the elder forgets to mention a certain ancestor while recalling a particular genealogy, any resulting retributions will fall on all of us, not just on him. The consequences of the failure or success for that matter is understood as socially dispersed. In Ibibio tradition, it is often said, "We pour libation together". Even though certain individuals are recognized for their eloquence and therefore may be or are always asked to perform more often than others, and even though some understand better the reasons for the specific gathering, the elder's role is conceived with the community as a whole in mind (Kilson, and Kpele, 1971).

Performance of a libation ritual in Ibibio culture often features interjections, some quiet, some not so quiet, some restricted to a monosyllabic exclamation of approval, agreement or dissent, others involving the shouting of whole phrases to amplify certain sentiments. Ululating is not uncommon on elevated occasions; on others, on-lookers —who are not merely on-lookers— will affirm the truth of what is being said, or reinforce the wish that evil forces not visit us on this occasion. Participants in effect re-perform the elder's spontaneously generated text, and they do so selectively. The effect, then, is of a dual, triple or multiple performances. The priest's text is notionally complete, while the others are necessarily incomplete as material expression. The mode is participatory, the conception thoroughly communal.

Extra-ordinary approach to libation communication
This is commonly known as the extra-mundane modes of communication. It is classified as belonging to the traditional communication system taking place between the living and the dead, or between the living and the extra-terrestrial world (Wilson 1990: 282). Professor Desmund Wilson, one of the most renowned Nigerian scholars today in the field of trado-modern communication holds that extramundane mode of communication on the surface usually seems uni-directional but participants at religious crusades, prayer sessions, rituals and other religious and pseudo-spiritual activities know there is often a form of feedback which may come through intrapersonal processes, physical revelations or magical and other-worldly verbalizations. This however explains why in traditional libation rituals in Ibibio, acceptance of the meal or offered item by the spirit is required after invocation and presentation. The signal usually in Ibibio culture is the appearance of the vulture bird and perching in a close proximity.

Wilson further maintains that the extra-mundane mode of communication make use of specialists such as spiritualists, witchdoctors, priests, and oracles who investigate on happenings both in the society in which they operate and beyond. They are believed to have some extraordinary powers and their revelations are believed to be reliable. In this respect, every instruction or information they pass on to the members of that society or community are treated as valid. Cases that may call for investigations through the extra-mundane include the following: Disappearance of a child in mysterious circumstances, abnormal deaths within a family, causes of constant accidents believed to be uncommon within a given family or community tradition, poor harvest (sacrifices are made after consultations with the chief priest of the community shrine), finding out a visitor's intention (whether with a good intention or not). In this case, colanut is used, broken and the ancestral spirit called upon to assist in finding solution to the existing problem, Incessant illnesses and abnormal behaviours of some children (constantly attributed to "Abiku or "Ogbanje" in Yoruba and Ibolands respectively) (Achebe, 1958). Communication in the extra-mundane prominently features the

incantatory and invocatory modes of communication. Incantatory communication deals specifically with rituals especially involving libation, sacrifice, vision and many of the forms of meta-physical communication which have a lot to do with the spirit beings.

CONCLUSION

This paper has demonstrated that libation rituals in Ibibio culture provide a framework which the people use religious language to express their dependence on their creator by means of rituals. As an important component of spirituality and worship, libation, along with sacrifice, acts as a medium of trade between human beings and ancestors. This ritual is used to demonstrate the people's seriousness in seeking spiritual assistance (Mbiti, 1990). Ritual communication involving libation among the Ibibio expresses their understanding of what it means to live and to die. The analysis also showed that Ibibio people believe that libation rituals influences the deities, divinities, ancestors and other spiritual beings, to secure desirable results, namely salvation or wellbeing for their communities. These offerings of drink and food are perceived by the people as ways in which the ancestors can be convinced to listen to their prayers and traffic them to the supernatural. Libation rituals for instance cause the divinities to be benevolent towards human beings. The content of traditional libations rituals therefore, clearly demonstrates that libation is a traditional religious ritual which communicates in its liturgical elements massages of support to the living from the extra mundane. The modern use of traditional libation rituals indicates that human beings are enabled to live through the truth of language embedded in their culture. The trend portends a prospect of a new cultural transformation in contemporary Ibibio indigenous knowledge.

References

Abanuka, B. 1991. Myths and African Universe. Enugu: Snaap Press Limited.

Abrahamson, Hans. 1951. The Origin of Death, Uppsala: Uppsala University, Sweden.

Achebe, C. 1958. Things Fall Apart. London: Heinemann Educational Books.

Adedeji, J. 1971. 'Oral Tradition and The Contemporary Theatre in Nigeria' in Research in African Literatures. Vol. 2, No. 2. Autumn. Indiana: Indiana University Press. Pp 134 – 149.

Adediji, G. 2000. 'God, Evil, and Salvation in African Traditional Religion', in The Ni-gerian Journal Of Theology. Vol. 14. Owerri: Assumpta Press. Pp 41-55.2006. Paradox of a milieu: Communication in African indigenous languages in the age of globalization. In Salawu Abiodun (Ed.), Indigenous Language Media in Africa. Lagos: CBAAC.

Anderson, G. H. 1981. Trends in Pouring of Libation, New York: Paulist Press.

Appiah-Kubi, K. 1977. African Theology en route, New York: Orbis Books, Mary Knoll.

Appiah-Kubi, K. 1982. Man Cures, God Heals, New York: Friendship Press.

Atakpo, U. 1988. Rural Communication in Nigeria. Ibadan: Kraft books Limited

Anti, O, 1987. Revealing Libation Rituals, London: UCL Press.

Anti, K. K. A. 1978. The Relationship Between the Supreme Being and the Lesser gods, Legon: Union Press.

Betz, O. N. 1987. Libation and History of Deities, Berkeley: University of California Press.

Baran, S. 1998. Introduction to Mass Communication: Media Literacy and Culture. New York: McGraw Hill.

Dominick, J. 1972. The Dynamics of Communication. New York: McGraw Hill Publishers.

Ekpo, C. Ndueso, 2012. Oral interview on Oku Idem. Chief Ekpo-Ndueso. Aka Ekpeme Idim Ndom, Ediene.

Epey Bisong D. and Funge Diffang. 2012. What constitute a traditional communication system, Department of Journalism and Mass Communication, University of Buea, Cameroon.

Essien, D. E. 2012. Participant Observation. Ediene-Ikono: Ediene Clan Council.

Idowu, E. B. 1962. Olodumare: God in Yoruba Belief, London: Longmans.

Idowu, E. B. 1973. African Traditional Religion - A Definition, London: S. C. M.

Kilson, M. and Kpele Lala, 1971. Ga Religious Rituals and Symbols, Cambridge: Harvard University Press.

Lystad, K. A. 1999. Africa: A Proud People, New Brunswick: Rutgers University Press.

MacBride, S. 1980. Many Voices, One World. New York: UNESCO Publishing House.

Mbiti, J. 1990. Exploring Ritual Practices in Religion, London: Longman.

McCombs, M. & Shaw, D. L. 1972. The Agenda-setting Function of the Mass Media. New York: McGraw Hill Publishers.

Modum, E. P. 1978. Gods as guests: Music and festivals in African traditional societies. In Kalu Ogbu (Ed.), Readings in African Humanities: African Cultural Development. Enugu: Fourth Dimension Publishing Co. Ltd.

Nyame, I. N. 2009. Ancestorship and Pouring of Libation, Indiana: University Press.

Ola, B. 1986. Cultural perspective in the African Ritual Practice. In Nwueli Onuara (Ed.), Mass Communication in Nigeria: A Book of Readings. Enugu: Fourth Dimension Publishing Co Ltd.

Olupona, A. 2000. Libation and Worship in African Traditional Religion, New York: Zed books.

Oreh, O. 1978. Modes of communication. In Ogbu Kalu (Ed.), Readings in African Humanities: African Cultural Development. Enugu: Fourth Dimension Publishers.

Soola, E. O. 1999. Traditional and modern communication media use and strategies for effective communication. Journal of Communication and Language Arts, I/I.

Udoh, C. 1987. The search for cultural identity in African traditional religion. University of Cross River State Cultural Week Magazine. Uyo: University of Uyo.

Wilson, D. 1991. A survey of traditional and modern mass media and Solomon Unoh in Old Calabar. In Solomon Unoh (Ed.), Topical Issues in Communication Arts. Vol. 2. Uyo: Modern Business Press. -. 1990. Traditional communication media systems. In Emmanuel Akpan (Ed.), Communication Arts Principles, Applications and Practices. Uyo: Modern Business Press Ltd.

Wilson & Wilson. 1996. Traditional systems of communication in modern Africa: An analytical view point. In Charles Okigbo (Ed.), Development of Communication Principles. Enugu: ACCE Publishers

Psycho-Social Determinants of Ethnocentrism: A Study among Four Ethnic Groups in Ghana

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ABSTRACT
The study employed a descriptive correlational design in exploring psychological and social factors in a multi-ethnic community where ethnic prejudice is a probable root cause of conflict. Openness to experience and social dominance orientation were the psychological factors. The social factors were ethnic group membership and ethnic identification. A total of 240 respondents comprising Dagomba, Ga, Ewe and Akan ethnic groups were selected using quota and convenience sampling techniques. Questionnaire was used to collect data from the respondents. Findings from the standard multiple regression analysis of the data revealed that both psychological and social factors are significant determinants of ethnocentrism in a collectivist culture like Ghana. The result suggests that self-concept plays an essential role when discussing in-group favouritism.

Keywords: Ethnic groups, Ghana, Ethnocentrism, Self-concept.

INTRODUCTION

Africa has many ethnic groupings living together as a unitary state or a country. Naturally, such groupings generate bias attitude called prejudice [14]. Prejudice arises because of in-group favouritism or ethnocentrism. Ironically most studies on this social psychological phenomenon have concentrated on racial groups in Western Europe and the United States with little done here in Africa. For instance, ethnocentrism has been investigated in relation to constructs such as openness to experience [8, 9], social dominance orientation [23], group membership and group identification [3, 5, 9, 11, 14, 19, 22]. From these studies, it is evident that psychological and social variables explain ethnocentrism.

In Africa, most ethnic diverse countries like Kenya have many problems due to the 'tribe' mentality [20]. Also, the Rwanda Genocide which led to entire cleansing of ethnic group members and the Guinea fowl conflict in the northern part of Ghana attest the need to investigate into this ethnic incident. Very little is known about the dynamics of ethnocentrism in Ghana. There are scanty literature to explain the psycho-social factors of the ethnocentrism For instance, [21] mentioned that individuals should do their best in burying biases and prejudices. Afrifa [1] also discussed some conflicts which were due to ethnic classifications. It

becomes necessary to explore ethnocentrism in a multi-ethnic nation like Ghana where bias attitude and in-group favouritism can cause conflict among various ethnic groups.

LITERATURE REVIEW

Self-Concept theory

The self-concept could be explained as a collection of beliefs about one's basic nature, unique qualities and typical behaviour with reference to the independent or interdependent self [18]. From the independent level, the self is personal and unique to others whilst the interdependency defines the self in connections with others. Generally, self-concept explains the behavior of individuals from two perspectives, the personal identity and social identity. All explanations for individual/personality differences fall under the personal identity whilst group-based investigations stem from the social identity.

Conceptuality, previous studies on ethnic based-bias usually examined the research variables using personality theories which explain individual differences or social psychological theories which capture the social identity of respondents. For instance, Pratto et al [23] used social dominance theory to examine people's orientation towards unequal status. Ekehammar et al. [8] study was on personality dispositions so the Big-five personality Inventory was used as the theoretical framework. Ekehammar et al [9] in their study explained ethnic prejudice from both social psychological and individual perspectives. In Ekehammar et al's [9] study, the two perspectives could have been explained in the framework of the self-concept. This is because the self-concept encompasses all the theories/perspectives that explained their findings of ethnic prejudice.

This study therefore employs the self-concept as a theoretical framework that explains the role of individual differences and group influence simultaneously. This means a discussion of ethnocentrism which springs from these two analyses will give a broader spectrum of the phenomenon.

Related Studies

The focus of previous studies on prejudice can be categorized under two main analysis, individual/personality differences and social psychological factors [17]. For instance, social identity theorists explaining prejudice from group based influence have made it clear that when one's identity become salient, individual differences which stem from personal identity should cease to predict prejudice. However, researchers [8, 13, 24] who have explained prejudice from the individual differences approach have found a great deal of insight concerning the need to focus on these differences within groups. This implies that investigation of the two perspectives will help to understand the dynamics of ethnic prejudice. The argument therefore, should not be centred on which one should be used to explain ethnic prejudice, rather how the two can best be utilized to explain the phenomenon. However, there is a similar study by Ekehammar et al. [9] which combined the two perspectives but in the Western culture using racial device as a measure of ethnicity.

The study seeks to explore the role of personality factors such as openness to experience and social dominance orientation and the role of social-psychological factors such as ethnic membership and identification in explaining ethnocentrism.

Personality differences and Ethnocentrism

Empirical studies have established that personality which is unique pattern of enduring psychological and behavioural characteristics by which a person can be compared and contrasted with other people has a role to play in examining prejudice [9]. The focus of

researchers pertaining to personality approach of explaining ethnocentrism is on examining individual differences among a group and how these differences could lead to in-group bias. The Big-Five Personality Trait Inventory has helped in some reasonably way to understand and appreciate the role of personality in explaining prejudice [24]. In a Meta-Analysis, Sibley and Duckitt [24] revealed that personality in general terms guides behavior and the consequence of it on prejudice toward a group which in contrast may be attenuated by specific beliefs being held about that particular social category.

Pratto et al proposed another individual-difference dimension, social dominance orientation (SDO) aside personality traits which is "general attitudinal orientation toward intergroup relations, reflecting whether one generally prefers such relations to be equal, versus hierarchical" and the "extent to which one desires that one's in-group dominate and be superior to out-groups" [23 p. 742]. Pratto et al [23] study revealed that SDO predicts in-group favouritism. Esses [10] in his study, disclosed that individuals who prefer social inequality hold belief that perpetuate ethnocentrism. Also it was revealed in Pratto et al [23] study that individuals who score high on SDO are more likely to be prejudicial. This means SDO is not a trait but helps to understand differences among individuals when the focus is on values and not group-based factors.

Social Psychological factors and Ethnocentrism

The 1960s brought a change concerning the focus of researchers in the field of prejudice and intergroup attitude. There was a change from the personality analysis to social and intergroup influence as a result of theoretical and methodological flaws by the then researchers like Adorno and Pettigrew [24]. This new way of evaluating prejudice led to the various theories stemming from group based explanations because it became necessary to incorporate this perspective in the quest of understanding in-group favouritism and out-group hostility. This is so because prejudice is more of a group phenomenon [17]. From this perspective then, it is important when discussion ethnocentrism to include group identity where an individual categorizes the self as a member of a particular group and not another and how both the group membership and group identification could influence members to behave in discriminatory way towards out-groups. The group-based approach explains ethnocentrism from the group that an individual belongs, and according to researchers who support this theory, much attention should be placed on the nature of group dynamics when dealing with ethnocentrism. Findings from these studies help to understand a person's behaviour from his/her group affiliation. For instance in a study by Castano and Yzerbyt [2], research participants were provided with some traits and these respondents were to select from the given attributes the ones that qualify their groups.

As the researchers expected, all the participants used positive traits to describe the group they belong, showing in group bias. It was also revealed that just being a member of a class of student was enough to discuss your group but how well a student identifies with the class counts a lot in that high identifiers used saw the in-group to be homogenous on positive attributes than the out-group. This means when people are to judge whether there are differences among the group they belong and that of the out-group; the probability to see favourable traits among the in-group is high. This behaviour is explained by social identity theorists as a form of enhancing the self where emphasis is placed on how the self depend on other selves in the group. when people are categorize into groups, the group gives the individual a sense of identity, so anytime they are to compare the group to other groups which they don't affiliate that basic tendency to rate the in-group favourably over the group they don't belong is high.

Based on the review of related studies, the following hypotheses were formulated and tested:

H₁: There would be a significant positive relationship between ethnic identification and ethnocentrism

H₂: There would be a significant positive relationship between Social Dominance Orientation and ethnocentrism

H₃: There would be a significant negative relation between Openness to Experience and ethnocentrism

METHODS

Participants

The four major ethnic groupings in Ghana according to the 2010 population and housing census report entailed the population for the study. The major ethnic groups are Akan Ga, Dagomba and Ewe. The researchers used quota and convenience sampling techniques to select 240 participants and the sample size is based on Cohen's [4]statistical power. From Cohen's Statistical Tables, the sample sizes necessary for .80 powers at the .05 level of significance for Pearson r is 85 and regression a total of 118 respondents needed.

Design

The correlational/multi-linear regression and cross-sectional survey design were the appropriate designs for the study because the study sought to explore the variables that could predict ethnocentrism. The correlational/multi-linear regression design strategy permits researchers to study and describe the nature of the relationships between variables using simple correlation or regression [12]. The cross-sectional survey was employed in addition to the correlational survey design because as at the time of the data collection, not all members of the chosen ethnic groups were included but a cross-section of the data in terms of age, gender and education. Likewise the data was collected from the population at only one point in time.

Measures/ Materials

Big-Five Inventory- The Big-Five factors are Openness to Experience, Conscientiousness, Extraversion, Agreeableness and Neuroticism. The inventory by John and Srivasta [15] is made up of 44 five-point Likert-scale items ranging from disagree strongly to agree strongly. Some of the items are, I see myself as "talkative; tend to find fault with others; does a thorough job; is depressed, blue; is original, comes up with new ideas". A meta-analytical study by Sibley and Duckitt [24]reviewed that Openness to Experience correlates more with SDO and prejudice, so this factor was adopted for the study. The alpha reliability coefficient of Openness to Experience is 0.86.

Social Dominance Orientation- Pratto et al's [23] social dominance orientation scale which is used to assess individual's preference for inequality among social-groups was used for the present study. This measurement consists of 15 seven-point Likert-scale items ranging from very negative to very positive. The SDO scale has the first 8 items favoring approval of social equality whist the remaining 7 items favor inequality. These 15 statements include "Some groups of people are simply inferior to other groups," "All groups should be given an equal chance in life," and "Inferior groups should stay in their place." The alpha reliability coefficient of the scale is 0.90. It is difficult translating the various responses of the Likert scale in the Ghanaian dialects chosen, so the scale was reduced to four-point. The Pilot study showed a higher reliability of 0.87 which means the modified scale served the purpose as the original.

Ethnic Identification- This measure was used to find out how individuals within an ethnic group felt close or attach to their group. Meeus et al's [19] constructed this scale with four items. The alpha reliability coefficient of the scale is 0.83. This scale is scored on 4-point Likert scale which ranges from 1 (strongly disagree) to 4 (strongly agree) where high scores denote one's closeness with in-group. An item is "I feel a bond with my in-group members".

Ethnocentrism- Meeus et al's [19] 6 four-point Likert scale item which has alpha reliability coefficient of 0.92 was employed for this study. Among the items include; 'The presence of Moroccans are a threat to Belgium'. The researchers adopted and revised the scale to suit the current study, where Moroccans were replaced with out-groups since the present study examined multiple out-groups (Dagomba, Ga, Ewe and Akan) and Belgium was substituted with in-group ethnicity.

Procedure
Research assistants were employed to distribute the questionnaire for the study. During the data collection, respondents kept asking for the meaning of some of the items since those items were not clear to them, the respondents. This led the researchers to further explain the items 6, 7, 8 and 10 of the openness to experience measure. For instance item 10 contains "sophisticated" which was simplified to "finer, better". So the researchers altered these items to tailor the present study. These changes became necessary for the questionnaire to be piloted. Thus data was collected from a section of the population which was analysed for two main reasons; to check for the reliability of the modified measures, and whether respondents understood the items on the questionnaire. A sample size of 40 was selected for the pilot study but thirty-two out of the forty distributed questionnaire were fully filled so the remaining eight half-filled were excluded from the analysis. The reliability coefficient for the various sub-scales are as follow; SDO = 0.87; Ethnic Identity = 0.83; Ethnocentrism = 0.72; and Openness to experience = 0.70. It took about three months for the researchers to collect data for the main study from the respondents of the chosen ethnic groups. The verbal consent of the respondents was sought before they were allowed to partake in the study. After completion of the questionnaire, respondents were thanked. The cronbach alpha of the research variables for the main study were as follows; SDO = .857, Openness to Experience = .702, Ethnic Identification =.834, Ethnocentrism =.798.

RESULT
In all, the analyses of data were under two phases; descriptive and hypothesis testing; and standard multiple regression analysis.

Descriptive statistics and Hypotheses
Table 1: Descriptive Statistics and Inter-correlation Matrix of the Study Variables (N = 240)

	M	SD	1	2	3	4
1 SDO	29.02	8.23				
2 Ethnic identification	14.03	2.26	-.127*			
3 Ethnocentrism	14.11	5.06	.180**	.359**		
4 Openness to Experience	30.34	4.35	-.266**	.124*	-.110*	

*p≤ .05   SDO = Social Dominance Orientation
**p≤ .01

Hypothesis One
H₁: There would be a significant positive relationship between ethnic identification and ethnocentrism.
The results from table 2 indicated that there was a significant positive relationship between ethnic identification and ethnocentrism ($r = .359$, $p < .01$). The coefficient of .359 shows there is a medium effect according to Cohen's descriptors. Thus, the more one identifies with his/her ethnic group the more he/she favours the in-group members. From this, the hypothesis that *'there would be a significant positive relationship between ethnic identification and ethnocentrism'* is supported.

Hypothesis Two
H₂: There would be a significant positive relationship between Social Dominance Orientation and ethnocentrism.

Result indicated that there was a positive significant effect of SDO on ethnocentrism ($r = .180$, $p < .01$). This means that there is a small effect size of SDO on ethnocentrism, where one prefers unequal status in society the more ethnocentric the person becomes. The research hypothesis that "*there would be a significant positive relationship between Social Dominance Orientation and ethnocentrism*" is therefore confirmed.

Hypothesis Three
H₃: There would be a significant negative relationship between Openness to Experience and ethnocentrism.

The summary results of hypothesis three from table 1 showed that there was a negative significant relationship between Openness to Experience and ethnocentrism ($r = -.110$, $p < .05$) and the effect size is small. The result means that there is an inverse relationship between Openness to Experience and ethnocentrism, where a higher score on Openness to Experience personality inventory leads to a lower score on ethnocentrism. Thus, an individual is prone to be ethnocentric when he/she is low on Openness to Experience. From this, the hypothesis that "*there would be a significant negative relationship between Openness to Experience and ethnocentrism*" is supported.

Standard multiple regression
Hypotheses 1, 2 and 3 were supported. This suggests that ethnic identification, social dominance orientation and openness to experience had significant relationship with ethnocentrism. The standard multiple regression was further used to determine the variance each role contributes to the criterion. Thus, in determining predictive factors of ethnocentrism among Akans, Gas, Ewes and Dagombas in Ghana, the standard multiple regression was run. The results are presented on Table 2.

Table 2: Results of Standard Multiple Regression Analysis for Personality variables and Social psychological variables as Predictors of Ethnocentrism

	B	SEB	β
Social Dominance Orientation	.118	.037	.192*
Ethnic identification	.823	.134	.367*
Openness to experience	-.104	-.104	-.090*

*$p ≤ .05$ Note $R^2 = .213$, $\Delta R^2 = .213$

The summary table indicated a significant model, R^2 = .213, $F_{(4, 235)}$ = 15.876, $p < .01$, Adjusted R^2 =.213. That is 21.3% of the variance in ethnocentrism can be explained by ethnic identification, SDO and openness to experience. The variables in order of the most influential are ethnic identification (β = .367), SDO (β =.192) and openness to experience (β =-.090).
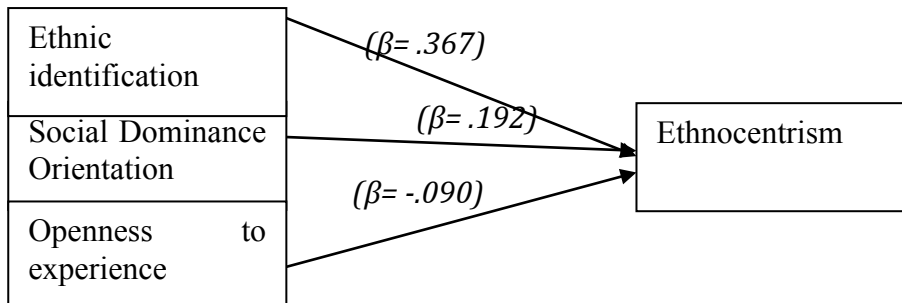
Summary of Predictors of ethnocentrism

Figure1: The diagrammatic model depicts the predictive relationship among variables as observed in the present study

DISCUSSION
Relationship between Ethnic identification and Ethnocentrism
It was hypothesized in the present study that there would be a significant positive relationship between ethnic identification and ethnocentrism, where ethnic identification is having a bond with one's ethnic group and not just being a member. This hypothesis was supported, meaning the more one identifies with his/her ethnic group the more likely he/she is to favour his/her group over other ethnic groups. Thus an Akan member who feels a close bond with his/her Akan identity sees other ethnic groups such as Dagomba or Ewe as a threat to his/her in-group and therefore will do everything possible to maintain the in-group vrs. out-group classification. This finding is consistent with some past empirical evidence [5, 9, 10, 16, 19, 22]. The present study has revealed that in-group bias could be explained from the attachment individuals feel for their group. This is evident from the self-concept that the desire and the search for positive self-esteem could be derived from the group an individual belongs to. So the need for the positive self-esteem caused the members of each ethnic group to show ethnocentric tendency which can lead to discriminating against out-groups.

Relationship between SDO and Ethnocentrism
Hypothesis two stated that there would be a significant positive relationship between Social Dominance Orientation and ethnocentrism. The findings of the study reported a significant positive relationship between SDO and ethnocentrism. In this study, SDO was used as a surface personality variable because it measures the values of individual in society with attention on social inequality. All personality studies [9, 10, 13, 17, 23, 24-26] that included this measure found a significant relation with ethnic prejudice. This means individual preferences for inequality, holding onto group status predispose the person to be bias towards individuals who do not belong to that particular status. Here, the focus is not on the group identity but the values of individuals. This means that an individual will be bias toward an in-group ethnic member if such in-group member does not share or hold same values and beliefs as the individual. From the personal identity of the self-concept, a person who belongs to an ethnic group and identifies with it still possess some values that differentiate him/her from other members of the same social identity.

Relationship between Openness to Experience and Ethnocentrism
The finding of the study reported that there was a significant negative relationship between Openness to Experience and ethnocentrism. The significant negative relation explains that a higher score on Openness to experience leads to a lower score on ethnocentrism. In other words, the more open one is to ideas the lesser in-group favouritism the person exhibits. Openness to experience is one factor of the Big-five Personality Inventory which has been found to have a relationship with ethnic prejudice [7, 8, 24-26]. The result of the present study is in line with these previous studies.

Ekehammar et al, [9] have reported that personality and social psychological factors explained ethnic prejudice better than only one factor. The researchers included the Big-five personality Factors in their study. Specifically Openness to experience was used in relation with Right-wing Authoritarianism and SDO. It was revealed that low Openness to experience individuals where more prejudiced. Openness to experience as a trait explains that individuals who possess it are creative, and play with ideas. Such individuals are more likely to associate with others irrespective of their group identity. Innate quality tends to form the reason why people show prejudicial attitude towards others and not the group they affiliate having influence on their bias attitude. So individuals who do not associate with out-groups tend to feel a stronger bond with their in-group identity. The intensity of the bond with the group causes them to defend and rate others using the in-group as a reference point. It therefore means that individual differences in terms of trait explanation should be included in ethnocentrism studies.

Theoretical and Social implication
Theoretically, this study has established some of the determinants of ethnocentrism in a multi-ethnic society. It confirms empirical support of the studies done by Leeson [17] and Ekehammar et al [9]which assert that ethnocentrism or prejudice should be analysed from both individual and group-based explanations because each has a significant relationship with ethnocentrism. This is evident in the standard multiple regression analysis where significant relationships existed between personality variables, ethnic identification and ethnocentrism. This study further incorporates the two explanations into one theoretical concept, the self-concept which helps to understand and appreciate the dynamic nature of the self in explaining ethnocentrism.

Following the dual model approach proposed by Ekehammar et al., this study further incorporates the two explanations into one theoretical concept, the self-concept. The self-concept involves personal and social identity. All explanations for individual differences fall under the personal identity whilst group-based investigations stem from the social identity and a discussion of ethnocentrism which springs from these two angles give a broader spectrum of the phenomenon.

Socially, the study provides government institutions, nongovernmental organizations, research practitioners and policy makers with insight into the nature and dynamics of inter-group attitudes in Ghana. This offers an in depth knowledge into how consciousness raising could serve as a platform in social change. Emphasis should be laid on how consequences of in-group favouritism could affect the development of a nation. The present study also helps to modify the educational curriculum where topics such as diversity could be treated in depth. Matters in relation to individual values, beliefs and traits should not be over looked when resolving inter-group conflicts because they correlate significantly with ethnocentrism.

Limitations and Suggestion for future research

The study explored relationships among variables which mean establishing causal relationship is not possible. There are many factors that may account for ethnocentrism, as in the present study, only 21.3% of the variance was accounted for. Hence, future researchers should explore these possible predictive factors.

CONCLUSIONS

The study aimed at exploring the possible determinants of ethnocentrism among four ethnic groups in Ghana in an inter-group situation. The study has revealed that SDO, Openness to experience and ethnic identification are the predictors of ethnocentrism. From the standard regression analysis, a framework that focuses on both personality and social psychological models would help understand ethnocentrism better. Despite its limitations, the results of the present study are interesting and compelling.

In summary, ethnocentrism therefore could be seen as a strategy for achieving and maintaining self-esteem. The tendency to be bias towards in-group members and against out-group members is by paying more attention to criteria that make one's in-group look better than salient out-groups. So the desire to maintain a positive self-concept creates pressure to evaluate one's own group positively. Aside the groups that individuals identify with their innate traits, values and beliefs in life also cause them to be prejudicial towards others. The emphasis is on personality differences where group affiliation has no role in influencing the bias attitude of in-group members. So in-group members could be prejudicial towards their own group members because they do not share the same traits and values that guide their behaviour.

References

[1]. Afrifa, A., *The Menace of Ethnic conflicts.* Uhuru, 1994. **6**: p. 16-17

[2]. Castano, E. and V. Y. Yzerbyt, *The highs and lows of group homogeneity.* Behavioural Process, 1998. **42**: p. 219-238

[3]. Castillo, L. G., et al., *Predictors of Racial Prejudice in White American Counseling Students.* Journal of Multicultural Counseling & Development, 2006. **34**(1): p. 15-26. Retrieved from EBSCOhost.

[4]. Cohen, J., *Quantitative Methods in Psychology: A Power Primer.* Psychological Bulletin, 1992. **112** (1): p. 155-159

[5]. Condor, S., *Public Prejudice as Collaborative Accomplishment: Towards a Dialogic Social Psychology of Racism.* Journal of Community & Applied Social Psychology, 2006. **16**: p. 1-18

[6]. Dudley, M. G., and D. Mulvey, *Differentiating among out-groups: predictors of congruent and discordant prejudice.* North American Journal of Psychology, 2009. **11**(1): p. 143-156

[7]. Duriez, B., and B. Soenens, *Personality, Identity Styles and Authoritarianism: an Integrative study among Late Adolescents.* European Journal of Personality, 2006. **20** (5): p. 397-412

[8]. Ekehammar, B., N. Akrami, *The Relation between Personality and Prejudice: A variable-and a person-centred approach.* The European Journal of Personality, 2003. **17**: p. 449-464

[9]. Ekehammar, B., N, Akrami, and F. Yang-Wallentin, *Ethnic prejudice: A combined Personality and Social Psychology Model.* Individual Differences in Research, 2009. **7** (4): p. 255-264

[10]. Esses, V. M., *The Role of Lay Perceptions of Ethnic Prejudice in the Maintenance and Perpetuation of Ethnic Bias.* Journal of Social Issues, 2006. **62** (3): p. 453-468

[11]. Frey, L. L., and G. Roysircar, *South Asian and East Asian International Students' Perceived Prejudice, Acculturation and Frequency of Help Resource Utilization.* Journal of Multicultural counseling and development, 2006. **34**: p. 208-222

[12]. Gravatter, F. J., and L. A. Forzano, *Research Methods for the Behavioural Sciences.* 2nd edition ed2006, Thomson Wadsworth:(U. S.A)

[13]. Guimond, S., et al., *Does Social Dominance Generate Prejudice? Integrating Individual and contextual Determinants of Intergroup Cognitions.* Journal of Personality and Social Psychology, 2003. **84** (4): p. 697-721

[14]. Hornsey, M. J., *Social identity theory and self-categorization theory: A historical review.* Social and Personality Psychology Compass, 2008. **2**: p. 204–222

[15]. John, O. P., and S. Srivasta, *The Big Five trait taxonomy: History, measurement and theoretical perspectives.* Chapter 4, 1999. University of California, Berkeley.

[16]. King, K. R. *Do you see what I see? Effects of Group Consciousness on African Women's Attributions to prejudice.* Psychology of Women Quarterly, 2003. **27**: p. 17-30

[17]. Leeson, P. R. C., T*he role of social identities and individual differences on predicting prejudice: a plea for tolerance.* 2006. http://ro.uow.edu.au/theses/134

[18]. Markus, H. R., and S. Kitayama, *Culture and the Self: Implications for Cognition, Emotion and Motivation.* Psychological review, 1991. **98** (2): p. 224-253

[19]. Meeus, J., et al., *The role of national identity representation in the relation between in-group identity and out-group derogation: Ethnic versus civic representation.* British Journal of Social Psychology, 2010. **49**:p. 305-320

[20]. Nakamura, K. *Students' Perceptions of Ethnicity and Learning: A case study of the United States International University.* Journal of Language, Technology & Entrepreneurship in Africa, 2009. **1** (2): p. 76-89

[21]. Nyarko, K. *Bestiality of tribal bigotry.* 2010, February 03. The Ghana web. Retrieved from http://www.ghanaweb.com/ghanahomepage/features/artikel.php? ID=176103

[22]. Pettigrew, T. F., et al., *Relative Deprivation and Intergroup Prejudice*. Journal of Social Issues, 2008. **64** (2): p. 385-401

[23]. Pratto, F., Sidanuis, J., Stallworth, L. M., and Malle, B. F. *Social Dominance Orientation: A personality variable predicting social and political attitudes*. Journal of personality and Social psychology, 1994. **67** (4): p. 741-763

[24]. Sibley, C. G., and J. Duckitt, *Personality and Prejudice: A Meta-Analysis and Theoretical Review.* Personality and Social Psychology Review, 2008. **12** (3): p. 248-279

[25]. Sibley, C. G., and J. Duckitt, *Big-Five Personality, Social Worldviews, and Ideological Attitudes: Further Tests of a Dual Process Cognitive-Motivational Model.* Journal of Social Psychology, 2009. **149** (5) : p. 545-561

[26]. Sibley, C. G., and J. Duckitt, *The Personality Bases of Ideology: A One-Year Longitudinal Study.* The Journal of Social Psychology, 2010. **150** (5): p. 540-559

Quality Care Within The Hospital Management

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ABSTRACT
Within the health sector, the concept of quality is becoming increasingly important and being paid more attention by officials. Therefore, the quality standard was introduced in hospital practices thus requiring the establishment a Quality Management System (QMS) which provides quality as the responsibility of all the hospital staff (administrative, medical and paramedical) so as to be up to offer a service that responds to the concerns and needs of patients. The Quality in hospitals corresponds to the balance between hospital services and the needs and expectations of the patients according to medical knowledge and texts rigors. It incorporates an intrinsic component of safety and reliability of health care. All these specificities raised on quality imply that in the health sector, a development and implementation tooling must be naturally established. As a matter of fact, both standardization and certification are among the main tools of quality.

INTRODUCTION:
In recent decades, state hospitals in Tunisia, as in many Western countries, have been facing challenges not only those related to the rationalization of public spending, but also those related to the improvement of the quality owing to the growing obsession regarding the patient safety and the quality of care especially with the demystification of the judicial recourse of the "medical malpractice" cases (Ducale & al, 2000; Starsem, 2003; Husser, 2006; Bougmiza & al., 2011).

The quality issue not that new in the health care sector, but it is becoming increasingly important and attracts more attention of the responsible. Indeed and in the recent decades, hospitals had already developed their "quality services" and assigned teams in charge of the continuous improvement of quality (Stephan & al, 2003; Husser, 2006). Innovation, in this context, is essentially related to the pressure under which hospitals are expected to invest in this dimension including the importation of managerial methods adopted in the industrial sector such as the certification system and the quality management system (QMS).

The emergence of the «quality care» concept: Quality is generally defined by the International Organization for Standardization[2] as "the totality of characteristics of an entity

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[2] International organization for standardization: http://www.iso.org/iso/home.htm

that gives it the ability to satisfy dictated or implied needs." In other words, Quality depends on the product or service suitability to real, present and future needs of its users based on both the regulatory and market requirements (Baruch, 2010).

According to Nicolas Baumann Minder (1988), quality involves two branches: "The communication skills to better understand the needs and conscious or unconscious desires of the "other" and on the other hand the dedication of those who unfailingly apply the rigorous procedures and who resort to personal experience and take the initiative to find the right solutions for the indefinite and the unplanned."

The specificity of quality in the health care sector:
In the health sector, quality is defined as the balance between hospital services and the needs and expectations of the patient according to medical knowledge and texts rigors. Nevertheless, several characteristics of the health-care activities condition the concept of quality and the latter's continuous improvement in the hospital (El Gaied, 2010).

Within this very respect, it is worthy to note and specify the original feature of "the subject of work" that is at the heart of hospital care activities: the human being 'a complicated biological object and a weak vulnerable person due to the deterioration of his health' (Martin and Gadbois, 2004).

The care giving relationship is a particular form of service relationship that is based on the advice and support as defined by Cerf and Falzon (2005): "The advice is the activity of an agent who temporarily provides his skills to help the client to make decisions or take actions to implement these decisions".

Thus, in such a relationship, and beyond the inevitable inter-individual variability, patients needs and expectations are not necessarily well defined at the beginning but are certainly changing in such a care- giving relationship (the inherent evolution in the dynamic process of the disease) (and Lapeyrière Falzon 1998).

Moreover, quality within the hospital boundaries includes an intrinsic component of safety and reliability of care. This security issue has particularly emerged given the relatively recent attention being paid to the extent of "insecurity" in health care particularly following the publication of the report "error is human: building a safer health system" in the late 90s. Since then, a large media propaganda accompanied the findings of this report in addition to the broader issue of adverse events related to health care (Thomas & al., 2000). As a matter of fact, the care issue becomes doubly interesting owing to the legitimate and growing demands of patients for security, on the one hand and the considerable additional costs of the management of the malpractices related to health care, on the other (Nestrigue & al., 2011).
It is to be noted, however, that in certain situations, safety and quality (measured by the degree of customer's satisfaction) may lead to paradoxes and contradictions. For example, the case of nuclear medicine care ensuring safety may lead the patient to almost jailers measures.

The implementation of standardization and certification care systems:
All these characteristics raised on quality in the hospital imply that the health sector must naturally implement a development tooling. Indeed, standardization and certification are among the main tools of quality experienced by several countries and imported from the industrial sector to the healthcare sector. Moreover, beyond these two tools, quality hospital presupposes the establishment of a management program which aims at the realization of predetermined objectives, the implementation and consolidation of the organizational structure and more importantly the satisfaction of patients needs. According to the

proponents of the policies concerning the overall quality in the hospital, it is actually the beginning of a necessary redefinition of a new hospital management.

It should be noted that the attention being paid to evaluating the quality of the professional practices in the medical and subsequently the nursing fields relates to the "finding of significant variations in the production of medical-surgeries "following a series of studies conducted in the U.S. in the 70s (Kimberly, 1997; Husser 2006). Since then, the quality standards have been gradually applied in hospital practices requiring the establishment Quality Management Systems (QMS) that usually result in certification (Mambi-El-Sendegele, 2001).

The management of the 21st century inspired a new management equation. In this vein, the main principles of the Excellence model developed by the European Foundation for Quality Management represent a self-assessment repository. The directors should focus their strategies on the basis of this approach to compare themselves to others. It becomes evident that the intangible assets have become a source of competitive advantage. Besides human capital, these intangible assets may be provided through the branding of the hospital and its quality service, the good grip of administrative and the IT procedures, the adoption of a flexible organizational structure...etc.

Accordingly and within the context of producing a health quality service and orienting hospitals towards excellence, we introduce the ISO standard, which will be a common repository. To implement a QMS, the hospital must "demonstrate its ability to consistently provide a product that meets the customer needs and favourably responds to applicable regulatory requirements". The hospital should also aim to "increase customer satisfaction through the effective application of the system [...] "(cf. Standards NF EN ISO 9001 Fournier et al (2011)). The implementation of such a management system has gained ground since the 1990s leading to a renewal of production, direction and management practices (Ohno 1989, cited by Iazykoff, 2004). This new indicator allows comparing one hospital to another in terms of quality.

Certification, in turn, can be defined as a cognitive device being set i.e. it is for the partners to agree on certain conventions namely; the regularity of how to behave as a kind of common repository. The quality certification which was first concerned with the product, then with the industrial and organizational processes, has now been integrated into the management and the strategies of the company that operates in various sectors, including health care (Fournier et & 2011).

Returning to the issue of standardization, it is worthy to note that criticisms of reconciliations made between this type of quality management and Taylorist work organization; due to the use of formal procedures and controls such as regular audits (Iazykoff, 2004). Standardization implies the establishment of formalized procedures and processes which focus on the technical care, and also on the organization of care as well as the hospitality and communication procedures (HAS, 2012). This normalization of techniques, processes and organizations can play the guarantor of the removal of certain "routine errors" thus promoting the safety and the quality of care. Nevertheless, the notion of quality as a response to the needs of users is highly variable and difficult to "normalize", depending on the individuals or the entity that define it as well as the trades to which it belongs (Fournier & al. , 2011).

In addition, the implementation of these procedures is not highly respected given that they are generally perceived as anothor prescription (Campinos-Dubernet & Jougleux, 2003). This additional vertical prescription may in certain circumstances push to the transgressions and the operation of the illegal normal system.

Towards a global management quality of the hospital:
Within the boundaries of the public hospital, in particular, where power conflicts between administrators, managers, versus caregivers are often palpable, the accreditation procedures are often accused of depriving certain operators of their jobs (Mas, 2011). Indeed, Caregivers face a major challenge that focuses not only on their ability to provide patients with " normative " care that meets quality standards but also to ensure adequate care resources for other key activities in the hospital (Mas , 2011). Thus, the quality standard established by the directors - reflecting their managerial and economist logic - does not correspond to the business logic and the subjective representation of the caregiver and the patient's needs and may also compel the caregivers to follow procedures that do not take into account the feature of their activities, the know-how acquired through the practice of the activity. In fact, "good work" cannot be summarized in the indicator of quality and productivity. It also implies a feeling of being bias, authentic, helpful to the society and recognized by peers (Davezies 2006; Dejours & al. 1994).

In order to overcome these limitations and criticisms, quality should be seen as the concern of all the health care staff (medical, paramedical and administrative) in an effort to offer a service that corresponds to the promise and the commitment to patients. Additionally, in order to take advantage of the quality, it is necessary that the hospital bases its operation on an internal reference for self-evaluation. Thus, the quality issue has been extended and applied to everything the hospital has to do to reach a better investigation and internal organization (HAS, 2012; Husser, 2006 El Gaid, 2010).

Thus, beyond the quality standard, the "quality approach" is what allows to finalize the hospital investigations and to apply them correctly in applying the quality in terms of the organizational approach. Quality implies the idea of trajectory. The transgression path taken in a constructive and progressive direction is similar to a passage through the Common Economic Space. Indeed, the approach is a systematic form of the transition towards the achievement of objectives. A passage through a process that is creative, constructive and especially scalable. Thus, any form of approach is measured and qualified. This approach, however, is now perceived as a luxury but also a necessity and a requirement for the hospital. In this context, Petty (2004) argued that "if the quality can be one of the pillars of the strategy, it does not exist in our knowledge of companies focused on quality at the point of making a proper finality. In this sense, quality is considered as a means and not as an end in itself".

Consistency in an approach is the proof of its quality. Indeed, the quality approach should take into account the appropriate strategies and the patient liabilities and more importantly especially should strengthen the interference between its authors and actors. A quality approach that is well supported and determined deliberately defends and promotes the general interest to self-interest. These pressures are both carried out by public authorities, users, help patients associations and the media.

CONCLUSION
The quality management in the health sector has its own advantages:
- **Better organization:** quality is a modernization lever that largely influences the productive vision (quality of service) through an effective management of the strategies and the human resources.

- **Better radiation:** for a hospital to take advantage of a suitable quality approach, it must take into account both the explicit and implicit expectations of patients.

- Better financial management: quality generates significant cost savings given that the cost of quality is evidently lower than that of non-quality.

The hospital must make considerable efforts to establish a quality control process and must constantly invest so as to offer better quality care services.

References:

AFNOR (2001). Qualité et systèmes de management ISO 9000. Paris: AFNOR

BAUMANN MINDER Nicolas, (1988). La confiance dans les hommes, préalable à la qualité. *Revue des Ingénieurs*

BAROUCH, G. (2010). La mise en œuvre de la démarche qualité dans les services publics : une difficile transition Politique et management public, 27(2), 109-127

BOUGMIZA, I. et al. (2011). Evaluation de la satisfaction des patientes hospitalisées au service de gynécologie obstétrique de Sousse, Tunisie, Pan African Medical Journal, 8:44

CAMPINOS-DUBERN, M. et JOUGLEUX, M. (2003). « L'assurance qualité: quelles contributions à la qualité des services? », Revue française de gestion, 5 (146) : 81-98. http://www.cairn.info/revue-francaise-de-gestion-2003-5-page-81.htm

CERF, M., FALZON, P., (2005). Le client dans la relation. Situation de service: travailleurs dans l'interaction, Paris: Edition PUF.

DAVEZIES, P. (2006). Les coûts de l'insatisfaction au travail. Revue Santé et travail, 57,1-7

DEJOURS Christophe & MOLINIER Pascale, (1994). «Le travail comme énigme», Sociologie du travail Vol. 36, Hors série n°I : 35-44

DUCALE, P. et LAFORCADE, M., (2000). Penser la qualité dans les institutions sanitaires et sociales, Seli Arslan

EL GAIED, M. (2010). Dispositifs d'encadrement et d'évaluation du travail hospitalier: le rôle de la communication managériale. *Communication et Organisation, 37*, 93-100

FALZON, P. & LAPEYRIERE, S. (1998). *L'usager et l'opérateur : ergonomie et relations de service*. - *Le Travail Humain*, Vol.61, pp.69-90

FOURNIER, C., GHRAM, R., BENCHEKROUN, T.-H., & SIX, F. (2011).Tension entre indicateurs de production et indicateurs de sécurité : Le cas de la certification d'une entreprise tunisienne. - Activités 8(1), pp.44-62

HAS, (2012). Guide méthodologique de diffusion publique des indicateurs de qualité des soins,Paris,1-71.[http://www.has-sante.fr/portail/upload/docs/application/pdf/2012 11/guide_methodologique_diffusion_indicateurs.pdf]

HUSSER, J. (2006). Le management strategique de la qualite hospitaliere par l'encadrement intermediaire. XVème Conférence Internationale de Management Stratégique, Annecy / Genève 13-16 Juin 2006

IAZYKOFF, V. (2004). L'intégration organisationnelle de la certification. Le cas de deux divisions régionales d'une grande entreprise. Revue française de gestion, 5 (152), 97-114

KIMBERLY, J.R. (1997). « Assessing Quality in Health Care : Issues in Measurement and Management », International Journal for Quality in Health Care, n°9 (3), p. 181-200

MAMBI-EL-SENDEGELE François, (2001). « Certification de qualité et management industriel : Le cas des organismes de formation ». Innovations, n° 13, p. 133–158

MARINIER Stéphane, « Le management par la qualité : un nouveau terrain d'échange ? », *La lettre d'Innovence*, n°27 du 22/02/2004. [http://www.innovence.fr]

MARTIN. C. et GADBOIS C. (2004). « L'ergonomie à l'hôpital » *in* Falzon, P. Ergonomie, Paris, PUF, Hors collection, 606.

MAS, M., PIERRU, F., SMOLSKI, N. & TORRREIELLI, R. (2011). L'hôpital en réanimation : Le sacrifice organisé d'un service public emblématique, éditions du croquant, collection Savoir/Agir, Bellecombe-en-Bauge, 368 pages

NESTRIGUE, C. et al. (2011). Surcoût des événements indésirables associés aux soins à l'hôpital: Premières estimations à partir de neuf indicateurs de sécurité des patients. Questions d'économie de la santé. 171 :1-8. http://www.irdes.fr/Publications/2011/Qes171.pdf

STARKEY, D. (2003). The 'empowerment debate': consumerist, professional and liberational perspectives Health and social care. - Social Policy & Society, 2(4), 273-84

STÉPHANE, F. et al. (2003). La qualité à l'hôpital: entre incantations managériales et traductions professionnelles. Revue française de gestion, 5(146), 155 - 165

THOMAS, E.J. & BRENNAN, T.A. (2000). Incidence and types of preventable adverse events in elderly patients: population based review of medical records. BMJ. 320(7237):741-4

The Decision-making Path of the Intellectual Capital's Employment under the Impact of Family Network Will：An Empirical Study

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ABSTRACT

Based on the correlation between the intellectual capital theory and the planned behavior theory in the field of behavioral science, this study established a path model that reflects the impact of the Family Network Will (FNW) on the intellectual capital's employment. The reliability and reasonability of the model were calculated and tested using structural equations. The results of the study indicated that the comprehensive indicator of the FNW on the perceived subjective behavior and experience, behavioral control and norm, and attitude, had a significant impact on the model. Attitude is the primary dependent factor in behavioral decision-making. As the attitude varies, the decision-making path varies accordingly. With the weakening of the FNW, the family's direct or indirect control will gradually change to the natural development mode. The FNW-based employment has negative impact on fair competition, and on employers and the individual's accumulation of high-quality human capital.

Keywords: Family Networks; Intellectual Capital; FamilyNetwork Will; Planning Behavior; Decision-making Path

INTRODUCTION

The issue of obtaining jobs available for the children of a family is not new in the academic community, it has already been researched several decades before (Rees & Shultze,1970; Granovetter,1974). From a large number of findings, they similarly reveal that Family Network has been presumed to be the most effective way; For example, about half of all jobs are obtained through all kinds of social relationships(Corcoran, et al.,1980), or they retrieve the information on specific jobs from friends and relatives(Holzer,1987). Moreover, family members are consistently reported to be important members of youths' social networks (Blyth, Hill & Theil ,1982) and parents play a particularly crucial role in the social networks of their own children. And, social networks of young generations have been found to be similar to those of their parents in composition and structure (Tietjen,1982;Olivera & Reiss,1987;Holzer,I991); Granovetter's (1973, 1974) weak tie argument and Lin's (1982, 1990) social resource theory have stimulated fruitful research of how individuals are matched to jobs through networks of social contacts in market economies in North America and western Europe (Bridges & Villemez,1986); similarly in China, Family Network ,which develops between persons who are strongly rather than weakly tied, is considered a lot to be the most effective way (BianYanjie,1997). However, although most of the studies discussed it mainly from various external perspectives, there are still no relationships yet to be explored from the viewpoint of the planning behavior of Family Network besides the ethics, social structural theory, and so on. Here, this study, by approaching the empirical case, will explore how the Family Network works based on the behavior of the planning in terms of their children's intellectual capital and the family will.

THEORETICAL UNDERPINNING

Theoretical relevance

This study has two theoretical underpinnings: the theory of intellectual capital and the theory of planned behavior. The former is the theoretical source, while the latter is the approach and tool for analysis. These two theories are associated with each other by behavioral science.

The concept of intellectual capital was first defined by American economist John Kenneth Calbraith in 1969(Schultz,1974) . In essence, intellectual capital is more than a static intangible asset. Rather, it represents a process of thinking and a means of achieving what one desires. The theory of intellectual capital was derived from the theory of human resources, as a major branch developed from the latter. The value of intellectual capital, as a concept, lies in that it explains the mystery of the rapid growth of Western economies. Intellectual capital is the core content of the human capital investment theory, and it is hailed by scholars as the Declaration of Independence of their field (Schultz, 1960; Schultz, 1974). Thus, it allows the concept of intellectual capital to manifest its enormous explanatory power in the field of behavioral science (Jorgenson, 2002). However, the concept of intellectual capital and the theory of human resources require further exploration. For example, the value of the intellectual capital theory is hard to be precisely described, because its weakness and defects in the constitutive elements, including the experience, perception, cognition and attitude. Therefore, this theory is more likely to be used arbitrarily and intuitively in practice. Numerous relevant studies have already been carried out internationally. Therefore, no quotations from relevant research will be listed here. The theory of planned behavior allows a measurement of the elements in behavioral science and can be used for path analysis. That is, it provides a metric approach for the intellectual capital, and plays a positive role in the simulation of academic research.

Intellectual capital

The individual variation of intellectual capital is significant because of the interactions of genetic and environmental factors during the course of the growth of individuals. As a result, the individuals are different from each other in the mental and physical characteristics, such as age, sex, appearance, capacity, interest, attitude, character and motive. All these directly result in the difference of competence. The difference of competence refers to the difference of the actual ability in a specific field. Given the difference in the path of competence acquirement (either through natural gift or learning), it is also interpreted as accomplishment or potential (aptitude), and is further divided into general competence and special competence. General competence means the intelligence in common sense. It differs in the level of intelligence (high or low) and structure of intelligence (language, numbers, reasoning, and space) from individual to individual. Special competence refers to the ability in undertaking one specific task or profession. A family's choice of the intellectual capital development mode is determined by the mainstream of the country. Then the expectation represents the full use of the relevant signals or information of one competence dimension, such as competence, personality, attitude, perception, behavior and will. Or all these dimensions will be comprehensively considered and nurtured at the same time. The former mode emphasizes the use of intellectual capital in a single field, while the latter emphasizes the application of multi-capital and multi-ability in multiple fields.

Theory of planned behavior

The theory of planned behavior (TPB) was developed from the theory of reasoned action (Fishbein & Ajzen, 1975), proposed by Ajzen in 1986 (Ajzen, 1988; 1991), and constantly supplemented by Coleman(2002) and numerous other scholars. The core part of the theory states that attitude toward behavior, subjective norms, and perceived behavioral control, together shape an individual's behavioral intentions and behaviors. The specific behaviors are

attempt, action, and giving up. A rational person gains confidence and plans an action towards an undertaking by controlling his behavior. On the other hand, the familiarity and perceived control of a work can, in turn, increase a person's confidence, which transforms into interest in the work, and thus promote the things to develop toward the desired direction. In other words, the outcomes of the behaviors, such as continuing the existing behavior, attempting immediately, repeating the effective behavior, or changing and innovating, will contribute to a person's self-recognition. Because this theory gives a detailed account of how the individual will facilitate the formation of the desired outcome, it is received extensively.

Impact of the family network will on the intellectual capital's planned behavior
The family's intervention in their children's employment is a process, which is guided by the family will, with the family behavioral intention as the goal, and the family network as the control platform. The family's intention and behavior are formed and affected by their children's intention, attitude and perception. It conforms to the characteristics and the defined process of the theory of planned behavior. Family network initially referred to the family information platform integrating the family control network and multi-media information network. It represents an interconnection and management of information devices, entertainment devices, electrical appliances, automated equipments, lighting equipments, security (monitoring) devices, all types of meters, and home alert devices. This system enables the sharing of data and multi-media information. It is the standard configuration for an intelligent and digitalized family that improves the quality of family life, learning, working and entertainment. The family network in this article refers to the network composed of various people related to the family, including relatives, friends, colleagues, business associates and countrymen. The family network is divided into internal and external networks. The former is composed of the core family members, while the latter is composed of friends, relatives, colleagues and townees. The boundary of the family network ends when it is void of personal contact. The individuals in the network also form networks themselves, which overlap with each other to form the network group. The extent of the utilization of information and resources and awareness of such utilization by the internal network determine the scale of the external network. This also determines the social identity and position of a family in its community. The new network, related to but inaccessible by the family network, is regarded as the mediation network that can connect the family networks. The family network will (FNW) reflects the family's intension to maximize the family benefits by fully using the control power of the internal, external, and the mediation networks of the family to help their children to obtain decent jobs. It is depends on the family networks for information exchange and uses the intention of the children as the objective. It is a typical planned behavior that aims to achieve the goal by relying on the relationships. Combined with the original Ajzen model (1980; 1988; 1991), the process of FNW in helping a family member to obtain a job has three stages: value recognition, intention formation and decision-making, as shown in Figure 1.
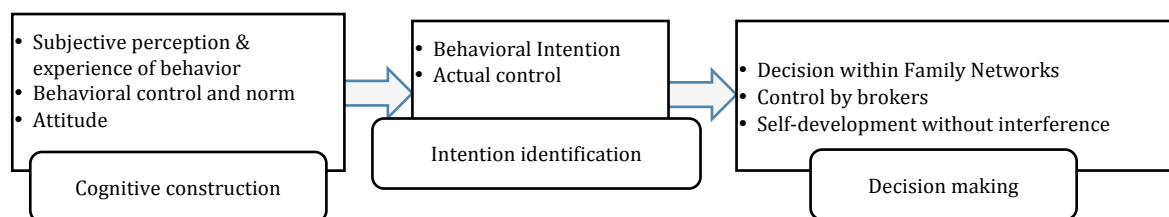

Figure1. Employment path diagram with Family Network mode

(1) <u>Cognitive construction</u>. This stage is mainly influenced by the subjective perception of the family behavior or the family network behavior; and the family's control, norm, and attitude

toward the children's decision-making. Therefore, the influence of each factor and its characteristics are investigated.

First, the subjective perception of behavior. The perceived information control of the family network is dependent on the subjective perception of the main controller and the control group as well as the external force. Since the subjective perception plans the behavioral intention and guides the awareness, the independence of the assisted cognitive construction constitutes the major driving force for the motive to form the behavioral intention (Ajzen, 1980). However, it is not strongly correlated with attitude. This driving force consists of two dimensions: one is the consistency of the perception, awareness, and experience of the family network; the other is the perception and judgment about the matching degree of the external opportunity and the fitness condition. Their existence mainly relies on the perception of family network, thus are considered as the internalized factors.

Second, control power and norm. Ajzen(1988;1991) defined "subjective norm" as the pressure exerted by the society on the individuals in performing a specific action. It is the social pressure generated from the inconsistency between the subjective feeling of the individual and the reference groups in terms of behavior. The reference group refers to the group establishing norms and values to influence the behavior of others. It differs in the extent of influence on the individuals. Thus, the reference group is divided into the primary group and the secondary group. The former has a larger influence because it is the group directly interacting with the individuals. The latter refers to other subjects that may potentially influence the individual behavior by providing norm. In this article, the primary group means the internal family network and where the internal and external family networks overlap, including the main controller within the family and the related mediator. The secondary group is made up of the job seekers who have similar age, background, expertise, and skills. The influence of the family network's control power over the resource distribution is manifested in two aspects, first, the intensity of influence, second, whether it can directly and effectively influence their children. These two aspects' correlation and strength of influence determine the outcome. The meaning of norm is two-fold: one is the institutional norm of the users of the intellectual capital (related institutions and agencies); the other is the behavioral norm of the family network entering into the related institutions and agencies.

Third, attitude. It refers to the stable mental state that one holds towards a specific phenomenon. It makes the people in the prepared state and shapes people's behavioral intentions. Because the influence factors are very extensive, the attitude can be broken down to the attitude of the family network and the attitude of the children, which are the most important and direct factor responsible for generating the family network effect.

(2) Intention identification. In light of the unfavorable expectation that the family network may generate, the following two aspects should be paid attention to: one is that the behavioral intention of the family directly determines whether the family network is exploited, the mode and extent of exploitation; the other is the actual control power that the family network is able to exert.

(3) Decision-making. The decision-making path varies with the FNW. If the children and their family have matching expectations, then the family-network-arranged employment mode will be realized successfully. On the other hand, if the children succumb to or refuse their family's arrangements, the family intension will be diverted, and then the mediation control or the natural development will take over.

EMPLOYMENT DECISION-MAKING PATH UNDER THE INTERVENTION OF FAMILY NETWORK

Model expansion

The above model only describes the basic process. In fact, the evolution into the family-network-based employment is mostly result from the checks and balances, and conversion of control among the FNW, family control power, and the children's willingness because of the change of objective and subjective factors. All these factors are considered in the model.

(1) <u>FNW</u>. It means that a family use its resource allocation power associated with its social status and position to exert an influence on the process and structure of the objective, thus to realize a family member's personal wishes. For example, exerting influence on cognition and norm, career decision-making intention, occupational control, attitude and implementation reflects that the behavioral intention has achieved the first stage of the decision-making path. It is completed on the layer of cognitive construction, serves the formation of different wills, and therefore promotes the formation of diverse decision-making behaviors.

(2) <u>Objective and subjective environmental factors</u>. Family, family network, mediator and the children of the family are all important factors constituting the objective and subjective environment. These factors are all constrained by the actual subjective and objective conditions, and exert checks and balances. For example, the measurement indicators include the width and scale of family network, the actual control force of the family network, and the control force of the mediation.

(3) <u>Children's personal wishes</u>. As a behavioral subject, children's personal wishes should be considered. However, it is often determined by the will of the family and the power of the family network.
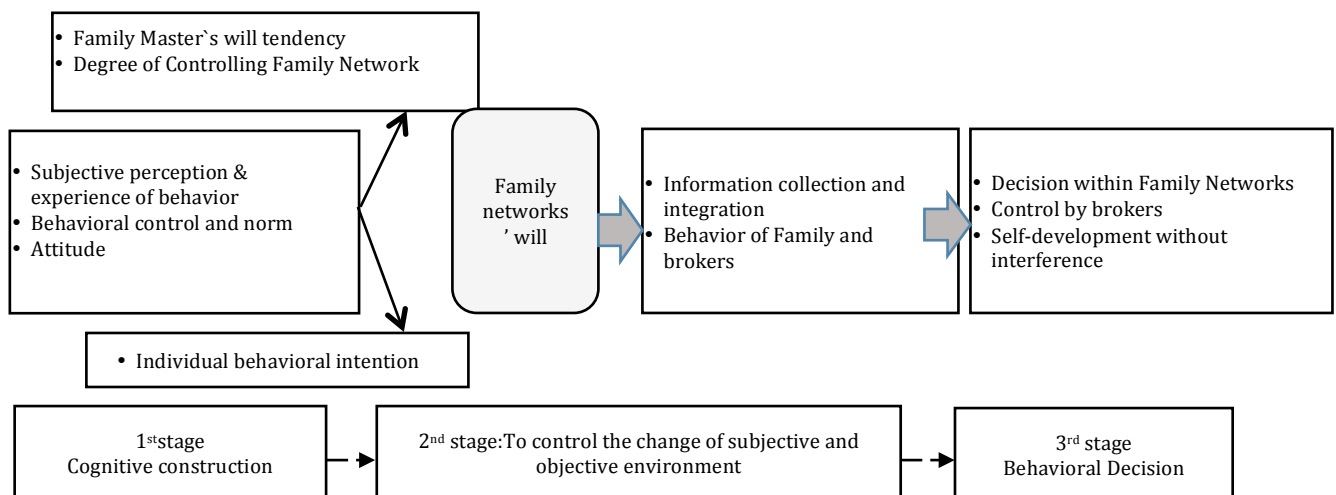
Figure 2 Family networks involved in the expansion model of employment decision-making

As shown in Figure. 2, the above factors are incorporated into the model.

Model indicators and test

Indicators.

The expanded model, as shown in Figure 2, illustrates the three processes of the decision-making path: cognitive construction of the family network with respective to job arrangement; objective and subjective conditions under the control of the FNW, the process

by which the mediation and will is expressed; the process by which diverse wills are converted into different behavioral decision-making. The behavioral intention in the first stage of the initial model is decomposed into the will of the family and the will of the children in the expanded model. In the second stage, information integration is added, together with the family network control and the mediation control. The information is the core of network control and is the major force that drives and shapes the behavior of the main controller and the mediation. It also prompts the variation of the objective and subjective conditions and provides basis for decision orientation. All these processes can be measured by establishing proper indicators.

To ensure the neutrality and reliability of this empirical study, the indicators were designed after the preliminary survey. The survey was carried out in 14 cities of China in 2012, including the cities in eastern, western and middle China: NanTong, Shenyang, ZhuHai, Dongguan, Zhengzhou, Nanjing, Changsha, Guiyang, Chengdu, Xi'an and so on. The survey was conducted on a random basis. The age of the interviewees ranged from 21 to 45 years old, with the males accounting for 58% and the females accounting for 42%. A total of 2100 questionnaires were distributed. The respondents with the age in the range of 21-29 answered 735 questionnaires, accounting for 35%; those with the age in the range of 30-39 answered 630, accounting for 30%. The respondents of other age groups (25%) answered the remaining 525 questionnaires. The questionnaire was designed according to Likert scales (7-point). All questions were structural questions. Each indicator was graded or options were selected. The 5-point scale was used. The higher the score, the higher the extent was indicated. All the indicators were positive, namely, the score increased with the extent. To control the result of survey at the ideal level and reduce the error related to the misunderstanding of the concept by the respondents, the directionality and consistency of the questions should be ensured and the questions were described in detail, easy to understand, with no ambiguity and good matching ability. Second, the implementation quality of the survey was controlled from two aspects: first the survey was undertaken by trained and fixed personnel, so the interpretation of the questions and options and the way of asking would be consistent. Second, the repeated asking of the questions and the confirmation degree were measured by the same scale. In case of large deviation in meaning and understanding, the investigator would do the survey again, and submitted the questionnaire to the research group for review. After comprehensive evaluation, weight was assigned to the resubmitted questionnaire and the mean value was taken. The respondents were awarded with a small gift after answering the questionnaire validly. Invalid questionnaires containing inappropriate answers or unmatched answers totaled 212. The valid questionnaires totaled 2788. The recovery rate of valid questionnaires was 92.93%. The indicators set by the questionnaire and the scoring standard are listed in Table 1.

Table 1. Test variables for the empirical study of the decision-making path concerning intellectual capital's employment under the will of family network

Variables	Indicators	Degree 1～5points				
		1	2	3	4	5
Subjective perception and experience of behavior	Extent of family's cognition on the social development status					
	family's social cognition of employment					
	family's respect to children's personal wishes					
	family support					
	family cohesion					
	attention to the family from the society					
	family network's awareness of social identity					
	importance of employment to the family.					

Behavioral control and norm	The stable and high-earning occupation of the core family members					
	family's influence on children's employment preference					
	family network's mastery of key information					
	family network's control over the employment					
	coordination between inconsistent employment goals of the family					
	the number of core family members having influence on the employment					
	children's consideration of the family advise					
	and degree of collaboration towards the intentional goal					
Attitude	Attitude influencing children's occupational expectation					
	children's actual demand for family network					
	the actually family support to children's target employment					
	children's acceptance of the FNW					
	importance of the family network mediation					
	children's dependence from the support of the family network					

Test and verification

According to the advice proposed by Coleman (2002), the simultaneous equations were established for the testing purpose. First, combining with the model and the indicator system, the decision-making path was extracted, as shown in Figure 3.
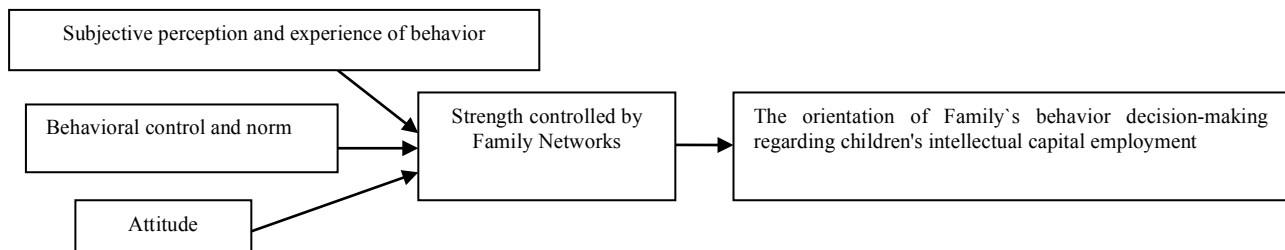

Figure 3: The decision-making path diagram simplified of Children's Intellectual Capital the verification Controlled by Family Network Will

The test process of the decision-making path is as follows:

(1). <u>Principles and methods</u>. Subjective perception and experience of behavioral control, subjective norm and attitude are the key variables in the model, reflecting the intentional tendency of the decision makers. The test was performed by establishing the structural equations, that is, establishing simultaneous equations for the mathematical processing of the variables. This approach has been widely applied in the fields of management science, behavioral science and psychology (SmyrniosK X,1998; Romano CA,2000); therefore the relevant details will not be discussed in this paper. For the analysis indicators, see Table 1; Lisrel 9.1 software was used; the test was carried out according to the default options in Lisrel software.

(2). <u>Test results</u>. Since the factor loads of some indicators were too small (smaller than 0.4), these indicators had low explanatory power for the model. Thus, they were excluded from the model, including family's cognition on the social development status, family network's awareness of social identity, attention to the family from the society, family network's mastery of key information, family network's control over the employment, the number of core family members having influence on the employment, attitude influencing children's occupational expectation, and importance of the family mediation network. Validation test centered on the relatively important variables, and the schematic of the calculation path is shown in Fig. 4.
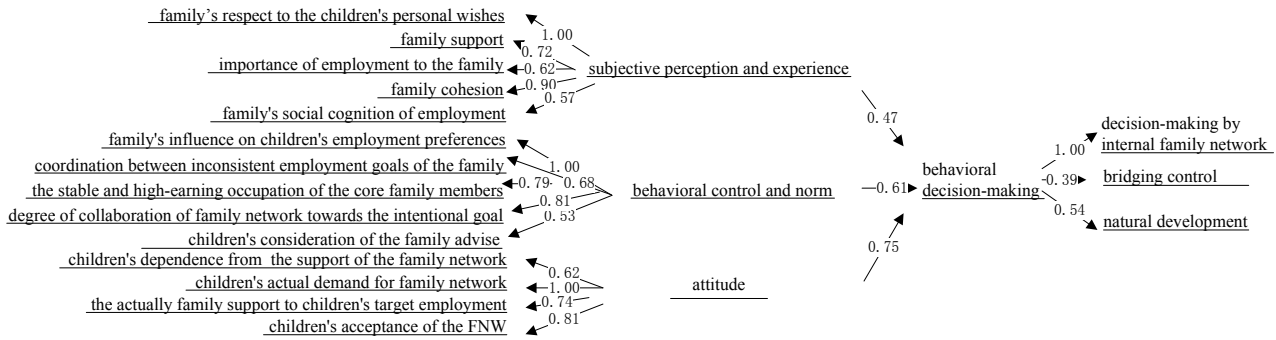
Figure 4. Decision-making path of an intellectual capital's employment under the impact of family network

(3) <u>Goodness of fit</u>: The goodness of fit of the model calculated using the software is shown in the table below.

Table 2. The model indicators value regarding fit statistics

Statistic optimization	X2	df	RMSEA	GFI	AGFI	CFI	NFI	IFI
Model Estimated	92	48	0.042	0.92	0.91	0.93	0.92	0.93

Table 2 clearly indicates that the optimization of fit falls within the reasonable interval, indicating the high reliability of the model.

RESULTS

The factors when its variable load was lower than 0.4 were excluded from the model. As shown in Figure 4, except the variables, such as family's social cognition of employment, children's consideration of the family advise, and children's dependence from the support of the family network, the factor loads of the rest indicators were larger than 0.65. It indicated that the model had a good validity. The path coefficients of perception and experience of subjective behavior, behavioral control and norm, and attitude to the decision-making of intellectual capital were 0.47, 0.61 and 0.75, respectively. The impact of these variables varied to different extents.

First, the path coefficient of attitude was the highest (0.75). Being employed was not only important to the children, but also a great concern of their family. Therefore, attitude is the most important variable that affected the decision-making path, as it shapes the behavioral intention. The attitude indicators of this model included the children's expectation of the family network, the family network's attitude towards employment, and the children's acceptance of the family network control. When the children's expectation for employment was consistent with the family's expectation, and when the employment had no great significance for the family, then the behavioral intention would be taken over by the internal decision-making or the natural development. But when the expectations were not consistent, the behavioral intention would turn to indirect control or natural development. Therefore, when the children did not seek for job opportunities by themselves, had an actual demand for the support from the family network (explanatory power for attitude was 1.00), and generally accepted the FNW, then the FNW would play its role. The children's employment would be controlled by the decision-making of the family network or by the mediation. This is especially the case when the job opportunities are characterized by high-income, fierce competition, nonstandardized and non-transparent employment institution. The control power that the family network had on the accessible job opportunities would successfully

shape the behavioral path and help form the mechanism that impairs fair competition. If the children tend to be dependent from the FNW, and the family network cannot actually contribute to employment, then the FNW disappears. The behavioral intention is represented as natural development.

The behavioral control and norm had the secondary influence, with the path coefficient being 0.61. This means that the family's coordination on the inconsistency between the children's employment preference, expertise and family's goal and the resulting assistance is the major driving force behind the behavioral intention. The children's consideration of the FNW had no great explanatory power for the behavioral control and norm. The core family members with stable and high-earning occupation exert the major control power over the behavior of the children. This result corresponds to the popular saying that good jobs come from the strong social network of the parents. Finding good job opportunities based on relationship was a nonstandardized behavior that controls the distribution of resources. It greatly challenges and harms the fair competition from the perspectives of existence rationality, economic rationality, social rationality and affective rationality.

The path coefficient of perception and experience of subjective behavior was 0.47. The model validation shows that the family generally respect the children's employment intention, and the stronger the family cohesion, the more beneficial the family network would be to the children. As seen from the factor loads of the indicators for the importance of employment to the family and family's social cognition of the employment, it can be concluded that the family's responses vary significantly with times, family circumstances, and social cognition.
To sum up, although some low-factor indicators were excluded for the model, we cannot say that the information that is conveyed by these indicators is unimportant. The removal of these indicators was due to the difficulty in data collection or the concealment of the respondents. As reflected by the rest indicators of the model, the decision-making path of employment under the FNW, strong or weak, can be described by the model above.

DISCUSSIONS AND CONCLUSION

The observation explored how stably and strongly the Chinese Family Network has played an important role in involving in the process of allocating children`s intellectual capital. Family Network indicates that the helpers tend to be connected through intermediaries to help-receivers who are strongly or moderately rather than weakly tied with the former two; and through itself or helper's job positively impacting on youth's job status is common; and so on. Obviously, the results from the analysis have positively showed some important reasons now in China that the flow of social classes is getting static gradually. Because, through over the last three decades, the rich stratum in China has really made some remarkable achievements in the world, but regrettably it has created a huge gap between the social rich and poor classes . Although the identity restrictions and the stagnation of occupational mobility are the most important factors among lots of reasons, Family Will that traditionally focuses on the next generation has now developed as the center of the family development, which cause families to continuously consolidate their own networks and private advantages and "the vertical mobility" of society classes has been continually declining and even become static completely. First of all, the traditional culture approved naturally in China that a successful father or mother becomes more crucial than the children`s Intellectual Capital in access to chances, assistance, wealth, reputation, occupation, life quality, and so on. The word "Pin Die" fully demonstrated popularity in contemporary China, which means Big Daddy always can satisfy children`s wish. Secondly, the one-child policy and new changes have created and strengthened the risk for families, so parents have always involved in the issues about how to

remove the worries of the children`s unemployment since these years` unemployment rate stays high under the context of the huge population. These thinking and behavior have pushed and helped the formation of the polarization between the rich and the poor (Zhou Yin, 2012): The more difficulties for the family-poor youth to have intellectual capital building with, the more difficulties for them to secure jobs with; in contrast, the more breezily for those with the Family Network that works. Additionally, it has become a common reality that the mode of parents` FN behavior has delivered fruitful results to children and strengthened their Family Network or themselves as the center from the thinking to the behavior fixed, and spread widely.

Above all, the change of FN` force definitely has brought the far-reaching significance to the social development, especially, it is worth further studying that the relation between FN and the social- flow effect, which is not only the double-edged sword. According to the results of a large number of findings: very few people in sheltered employment progress into competitive employment (Blanck et al. 2003); and the following is an absolute truth: Give a man a fish and you feed him for a day; teach a man the way to fish and you feed him for a lifetime. Therefore, this study is not simply to talk about the case of parents` settling job chances for their children or providing opportunities, but beyond this, just in the environment of the extremely scarce resources, FN, the "invisible" and the real "touch" of the hand will definitely influence the allocation of the social resources and some public opportunities, to some extent, it means that FN benefits themselves based on hurting the public foundation of a social development, such as equity, social trust, and so on. Although it is hard to measure how and the extent the widespread and popular FNW`s influence has interacted with them, or whether the society employment efficiency has been lost or not, obviously, it's worthy to discuss from the analysis that what different effects the change has been made on society, enterprises or organizations, or individual.

References

Kain, John F. (1968) "Housing Segregation, Negro Employment, and Metropolitan Decentralization" *Quarterly Journal of Economics*8 2:175-197.

Ellwood, David T. (1986) "The Spatial Mismatch Hypothesis: Are There Teenage Jobs Missing the Ghetto?" in Richard B. Freeman and Harry J. Holzer, (eds) The *Black Youth Unemployment Crisis* (Chicago: University of Chicago Press)

Ajzen, I.,(1988). Attitudes, personality, and behavior. Chicago: Dorsey Press.

Ajzen, I.,(1991). The theory of planned behavior, Organizational behavior and human decision processes, 50(2), 179-211.

Fishbein, M., & Ajzen, I.,(1975). Belief, attitude, intention, and behavior: An introduction to theory and research. Reading, Mass: Addison-Wesley.

Schultz, T. W.,(1960). Capital formation by education. The journal of political economy, 68(6), 571-583.

Schultz, T. W. ,(1974). Economics of the family: Marriage, children, and human capital. NBER Books.

Coleman S.,2002. Access to capital and terms of credit: a comparison of men-and women owned small businesses. Journal of Small Business Management, 38: 37-52.

Ajzen I, Fish beinM.,(1980). Understanding attitudes and predicting social behavior. N. J: Prentice-Hal,l Inc.

Levin R I,(1987). Travis V R. Small business finance: what the books don't say[J]. Harvard Business Review, 65(6): 30-32.

HaynesGW, Rowe B R, Walker R, et a.l,2000. The differences in financial structure between women-and men-owned family businesses. Journal of Family and Economic Issues, 21: 209-226.

Jorgensen,(2002).Tine Herreborg,Corporate Social Responsibility and Environmental Management.June .Vo. 9, Issue 2, p91–98.

Ajzen,I.& Madden,T.J.,1986. Understanding attitudes and predicting social behavior. N. J: Prentice-Hal,l Inc.

HaynesGW, Rowe B R, Walker R, et a.l,(2000). The differences in financial structure between women-and men-owned family businesses. Journal of Family and Economic Issues, 21: 209-226.

SmyrniosK X, TanewskiG A, Romano C.(1998). Development of ameasure of the characteristics of family business.Family Business Review,11: 49-60.

RomanoCA, TanewskiG A, Smyrnios,K X.,(2000). Capital structure decision making: a model for family business. Journal of Business Venturing, 16: 285-310.

Zhou Yin,2012. Study on On the trend of Chinese social strata curing on "efficiency and equity" double impact Special Zone Economy,1:118-120

Price, Richard and Edwin S. Mills (1985) "Race and Residence in Earnings Determination"

Journal of Urban Economics 17:1-18.

Tietjen, A. (1982) "The Social Networks of Preadolescent Children in Sweden" *International*

*Journal of Behavioral Development*5*s*: 111-130.

Oliveri, M.E. and D. Reiss (1987) "Social Networks of Family Members: Distinctive Roles of

Mothers and Fathers" *Sex Roles* 17:11/12 719-736.

Granovetter, Mark (1974) *Getting a Job: A Study of Contacts and Careers* (Cambridge: Harvard University Press).

Holzer, Harry J. (1991) "The Spatial Mismatch Hypothesis: What Has the Evidence Shown?"*Urban Studies* 28:105-122.

Cohabitation - An Increasing Phenomenon: Is it an Emerging New Norm? People's Perspective

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ABSTRACT

Traditionally, Batswana youth lived with their parents or close relatives and were to adhere to the rules and regulations of their societies. Apparently, under such conditions cohabitation was unheard of as it was shunned openly. In recent times cohabitation has been increasing yet it is neither socially respected nor legally recognized. Consequently, we aimed to investigate whether this phenomenon is being accepted as a new norm or not. In this paper we present the findings of a study conducted on perceptions of Batswana towards cohabitation. Purposive sampling was used to select 20 people from Gaborone and Tswapong region to participate in the study and interviews were employed to gather information for the study. The study revealed that though cohabitation is publicly practiced by many people, it is not yet accepted as a new norm. The study also revealed several challenges emanating from arrangements of such relationships. This paper therefore concludes that in order to encourage the spirit of accountability and respect, cohabitation could or should be discouraged among Batswana. It further recommends that cohabitation as a topic could be included in the Moral Education syllabus to enable learners to explore the moral implications of this emergent phenomenon.

Keywords: Cohabitation, Marriage, Bride price

INTRODUCTION

Cohabitation refers to an unmarried couple living together in a stable, exclusive relationship for a sustained period of time (Waite, 2000). It is worth noting that cohabitation does not differ much with marriage; the main difference is that while marriage is socially and legally recognized and publicly celebrated, cohabitation is more often not. Among Batswana, marriage traditionally was respected, recognized and highly valued. Individuals who remained single were ostracized and stigmatized. Such people were referred to as *mafetwa* (those who have been passed by). In addition to this negative labelling, unmarried people were seen as immature irrespective of their age (Nkomazana, 2005). Similarly, if one is cohabiting, regardless of the length of that relationship and age, that person will not be allowed to enter marital negotiations as it is believed that he or she is immature to discuss marital issues.

While cohabitation has been minimally practiced in the past, it seems to be on the increase nowadays. Since the 1970s, many countries, particularly those in North America and Europe have experienced rapid growth in their cohabitation rates (Ponzetti, 2003). This is a possibility that this growth has somehow contributed to the proliferation of divorce and remarriage-Botswana is not an exception. For instance, over the past years, Botswana has experienced increasing divorce and declining marriage rate; hence many people now opt for cohabitation arrangements or remain unmarried (Thobega 2012; Otlhogile 1994; Mookodi 2004).

People engage in cohabitation for various reasons such as desire for independence and companionship, financial security, confirmation of marriage compatibility (Seltzer, 2000; Smock, 2000). However, though the practice of cohabitation is on the increase in Botswana and elsewhere, it does not mean that it is without challenges (Axinn and Thornton, 1993; Bulanda and Mmanning, 2008; Hertz, 2012; Hohmann-Marriott, 2006, Mokomane, 2004; Otlhogile 1994). For example, if the couple decides to go separate ways, one may lose everything regardless of whether they had devoted many years of their lives in the relationship (Mokomane, 2004). Furthermore, children of cohabiters can be adversely affected by this practice with anecdotal evidence of children being ill-treated and scorned by the community.

Cohabitation is practiced by people of all ages and of different backgrounds. The question now is; is cohabitation being accepted as a new norm? And what really compels people to engage in it? This is the concern this study sought to investigate and establish.

Purpose Of The Study
The purpose of this study was to explore perceptions of Batswana towards cohabitation. It specifically investigated and established the main reasons for cohabitation and the main challenges associated with this practice.

Research Questions
This study addressed the following questions:
1. What are the most contributing factors to cohabitation in Botswana?
2. Is cohabitation being accepted as a new norm nowadays?
3. What are the main challenges associated with cohabitation?
4. What are the possible strategies to curb the increase of cohabitation among Batswana?

METHODOLOGY
In order to explore people's individual and collective social actions, beliefs and perceptions the study adopted a qualitative approach, where interview data were first coded, interpreted and analyzed to understand perspectives of the participants. This approach was deemed most suitable as it is capable of allowing the researcher to enter the participants' life whilst still enabling participants to freely express their feelings and attitudes.

The purposive sampling method was used to select respondents as it was found to be most appropriate for the nature of this study. 11 female (6 rural and 5 urban) and 13 males (6 rural and 7 urban) who have an understanding or experience of cohabitation were recruited from Gaborone (urban) and Tswapong region (rural). Participants were within the age range of 21-50 years.

RESULTS AND DISCUSSION
The study looked at the contributing factors to cohabitation in Botswana and whether cohabitation is being accepted as a new norm nowadays. It further examined effects of cohabitation and possible strategies to curb cohabitation.

The Most Contributing factors to cohabitation in Botswana
Firstly, the study sought to establish major contributing factors to cohabitation and the following themes emerged:
- o Test of Compatibility in Marriage
- o Financial constraints

- o   Convenience reasons
- o   Emancipation reasons

Test of Compatibility in Marriage

Majority of the participants pointed out that most people cohabit in order to test their compatibility in marriage; couples study each other before they make decisions to get married. When expressing this concern, one respondent said:

> "It's wise to stay with your partner before getting married so that you know him better. This gives one the chance to study him more closely. If o bona le tsamaisana sentle you can now go on and prepare for marriage but if le sa tshubisane, o a mo togela before o ipofa ka lenyalo!" (If you realize that you are compatible, you can go on and prepare for marriage but if you do not go along well you can leave him before you commit yourself to marriage!)"

Another respondent echoed this:

> "Marriage is not a cup of tea; it has its own difficulties so it will be best to stay together before actually getting marriage. Moo go go fa tshono ya gore o mo tsebe hantle before o ikgolega ka nyalo." (This would then give one chance to know your partner fully before you commit yourself to marriage)

These responses highlight that cohabitation is at times practised as a trial for compatibility in marriage. In other words, in such instances, cohabitation would be perceived as an important precondition for marriage. This concurs with the observation made by Haralambos et al (1995) that some people see the period of cohabitation simply as a trial marriage and intend to get married if it proves satisfactorily. Viewed from this context, perhaps it is acceptable to establish if one would be compatible in marriage as this inevitably offers partners an opportunity to decide whether to live together for the rest of their life or not. Arguably, discovering the couple's incompatibility in marriage is unbearable; this has become the root cause of divorce cases experienced in this country.

Financial constraints

It emerged from these findings that majority of participants believe that some people cohabit because life is expensive; one has to pay rent, buy food, use transport daily buy clothes, etc., hence the need to share such expenses, as illustrated by such verbatim quotes:

> "Life is very expensive in Gaborone so some stay with their boyfriends to cut unnecessary expenses like buying food, transport costs and rental fees."

> "Though we are cohabiting now, we will eventually get married. It is only that things are expensive nowadays. We are still preparing for our big day.'

Still related to financial constraints, it was also argued that some resort to cohabitation due to the high charges of bride price. One respondent who justified cohabitation by blaming some parents argued that:

> "Batho kana ba bata go huma ka go rekisa bana ba bone". (People want to get rich by selling their children)

Evidently, besides the high cost of living being the most contributing factor to the increase of cohabitation, apparently high charges of bride price also compels people to resort to

cohabitation. Still related to this argument, monetary bride price charge is not standardised among Batswana; it varies from P800-00 up to P3, 500-00 per head of cattle. On the basis that some tribes in Botswana do not highly charge bride price while others do, we have noted that this is an important finding of this study. Perhaps such argument on this issue could be a wakeup call for Batswana to consider standardising monetary bride price charges. We will return to this issue in subsequent discussion of the findings.

It also emerged from these findings that some respondents are of the view that some people practice cohabitation hoping that it could somehow assist in elevating some of their social and financial constraints. In the first place it was pointed out that cohabitation gives both partners financial security; in most cases the bread winner in the relationship maintains the unemployed partner. It was emphasised that once separated, the working partner's financial contribution is seldom constant and consistent.

Secondly, issues related to child maintenance were also identified as being addressed by cohabitation. This concern was mostly voiced by men in comparison to their female counterparts. For example, one man lamented that:

> *"Dithwathwa tsa kgodiso ya ngwana di a tura kwa ga mmakaseterata so it is better you stay with your kids otherwise o ta a chajiwa madi a a gakgamatsang."(The expenses of raising a child are high, especially if you have been summoned at the magistrate court, so it's better if you stay with your kids).*

Convenience reasons
Convenience also emerged as another reason for cohabitation, with emphasis on the issue of sex and companionship. In this context, cohabitation is comparable to marriage since it accords partners almost similar rights as their married counterparts. It was pointed out that while one partner would feel convenient to have somebody who cooks, cleans and irons his clothes, another partner would on the other hand gain financial security especially if he or she is not working or earns a small salary. Such conveniences, it was emphasised, greatly contribute to the increase of cohabitation. This observation is confirmed by Goodman (1993:85):

> *----this form tends to follow traditional gender role lines, with the man gaining sexual access and domestic support while the woman acquires companionship.*

Emancipation reasons
While in the minority, some participants stated that some people cohabit for emancipation reasons. This, as pointed out, is mainly done by certain individuals who feel they cannot be controlled by their parents for the rest of their lives, as illustrated by this verbatim extracts:

> *"Hee ija! Kana batsadi ba bangwe ba rata go laola mo eleng gore lefa o le motona o laolelwa metsamao hela ka gore o santse o nna mo lapeng la bone. Mosadi o ta go bolelela gore 'thako golela sa gagwe fela mojarateng!" (Hey! some parents like controlling their kids dispite the fact that they are grown-ups. They are told when to be in the house and when to go. A woman would literally tell you that she is the one who makes rules in that family) this would then drive some people to cohabitate so as to get out of that family.)*

"One needs to show maturity and move out of his parents' house. You can't be dependent on them for the rest of your life. If o na le mokapelo yoo berekang the better as he will now take care of you fa o sa ntse o bata-bata tiro." (If you have a partner who is working the better as he will fend for you while still searching for employment.)

These statements illustrate that individuals can make use of cohabitiation to suit their needs and interest for independence from external family influence. In this case, if some people resort to cohabitation having realised that they are mature enough to be controlled by their parents, perhaps society should respect their decisions and accept cohabitation as a new norm.

Is Cohabitation being accepted as a New Norm Nowadays?
We were also interested in establishing whether cohabitation has been accepted as a new norm or not. Interestingly, if it is not accepted, one wonders as to why such an increase, on the one hand and how the society perceive those who practice it, on the other hand. We believe this is pertinent issue, regarding the increase of cohabitation among Batswana.

It emerged from these findings that two thirds of the participants seem to believe that cohabitation is not accepted as a new norm despite the fact that many people are practicing it openly and publicly. In support of their point of view, participants strongly argued that cohabiters are not normally accorded the respect given to married couples. Individuals who cohabitate have reduced social influence especially in context of discussions pertinent to marriage and are viewed as immature members of society.

Cohabiters are fully aware of their low social status, hence their aspiration to get married, as explained below:

"Kana society e sa ntse e tseela nyalo ko godimo thata, even those who are cohabiting, know that they would have to marry one day. That is why re bona bomagogo ba nyalana ba thuswa ke bana ba bone." (Our society still highly regards marriage so much that those who are cohabiting know that they have to marry. That is why we even see old people getting married being helped by their children.)

This low status was further confirmed by those who are married as illustrated by this quote:

"Owai hare le bone ba a itse go re fa gotwe go laiwa ngwetsi bone gaba tsene gope. Tota ba ta raya ngwetsi bareng? Ka jalo ba boela morago ka situ." (Hey the cohabiters know very well that counseling a newlywed bride is for married people only. If that takes place they silently excuse themselves. After all what would they tell the newly-wed bride?)

The above quotes reveal that while cohabitation is on the increase, it continues to be undermined by the society. Another issue raised was that when people cohabit, they usually do not tell their parents as they know that parents will disapprove of their relationship. As pointed out, parents' involvement is very vital for the stability of any relationship as they may guide, counsel and help in solving relational conflicts. In this way, if cohabiting couples encounter any relational problems, they are deprived of this privilege since may be hesitant to involve their parents. We should note however as aforementioned, that some parental influence may be detrimental to relationships.

Some participants indicated that when couples stay together they end up having children. It could be argued that cohabitation is not approved as it increases the number of children born outside wedlock which carries social stigma and reduced legal right due to the relationship not being recognized.

The most important finding of this study is that financial constraints and the high bride prices force most people to cohabit. This being the case, our view is that perhaps these issues could be addressed as an attempt to curb the increase of cohabitation in Botswana. We will return to this issue in subsequent sections of this paper, after exploring challenges of this practice.

It should be stressed however that most people indicated that cohabitation is not yet accepted as a new norm despite the fact that it is publicly and openly practiced. However, on the contrary, though in the minority, some participants indicated that cohabitation is accepted as a new norm. It is the view of respondents along this line of argument that child rearing needs the involvement of both parents, hence some parents end up cohabiting so that they look after their children. Based on these findings, it can be argued that apparently, having children out of wedlock could compel some people to cohabit in order to assist each other in taking care of the children. As it was indicated, in the process such people tend to believe that cohabitation is accepted as a new norm.

It is also the view of the advocates of cohabitation that that there is no offence in practicing cohabitation, as argues one participant that 'there is no law prohibiting it, it is not a crime. . .' As can be realised, lack of any criminal law related to cohabitation can somehow encourage the practice of this relationship; hence it appears to be accepted as a new norm.

At this point of our discussion, we would like to point out that perhaps a consideration of both financial and social constraints indicated by those involved in cohabitation would assist us in understanding why cohabitation is in the increase nowadays, despite the negative attitude of the society towards it. In the following discussion we develop our argument by exploring the challenges of this practice.

The Main Challenges of Cohabitation

Besides the society's negative attitude towards cohabitation, this practice appears to be having various challenges. It emerged from these findings that while cohabitation appears to be a norm nowadays, it is without challenges, as illustrated by these extracts:

> *"Kana ga ba itsewe ke botsadi. Fa ba na le bothata ba ya kae? Ba ta a letanngwa ke mang? Bangwe ba felela ba bolaana." (They are not known by parents so when they experience problems in their relationships, where do they go for help? Who will help in settling their disputes? Some end up resorting to passion killing.)*

> *"When the relationship is sour, they do not know where to report as they are not known by parents. Some even fear to seek for help as they think they will be asked why they married themselves. So they suffer in silence."*

> *"When one partner dies, the remaining one may be left with nothing as parents/relatives may come and get everything, especially if the one who is dead was the one who was working."*

The above extracts reveal some of the challenges experienced by cohabiting couples. It also emerged from the findings on this topic that while in the majority of cases most of such

challenges are experienced within cohabitation, conflicts are inevitable during the couple's separation. For instance, it was stated that:

> "One may be denied the right to see their children by parents citing that they did not pay for them especially if the parents have separated."

We are of the view that in most cases the law and parents play a very vital role in promoting and upholding stability within relationships by solving disputes. It is evident from these findings that while most relationships experience challenges, those associated with cohabitation appear to be particularly graver due to discernment of the society towards this type of relationship. With this understanding, we wonder why such a practice seems to be more prevalent nowadays especially when it is surrounded by such challenges. The argument of the advocates of this practice may help in discerning the answer to this.

It emerged from these findings that advocates of cohabitation strongly believe that cohabiting and married couples experience same problems. In support of their argument, they pointed out that even though people seem to disregard cohabitation, it has some benefits. For example, they strongly argued that due to lack of obligatory social and legal commitment, couples may easily opt to spilt-up without any involvement of parents or the law. They further emphasised that since couples do not sign for in-community of property, they can easily take their personal property when they end the relationship, unlike in marriage where couples have to undergo tedious divorce proceedings.

On a different issue, it also emerged from these findings that whilst cohabiting families believe that their children are happy, in the contrary in most cases cohabitation affects the moral development of children due to the nature of such relationships. It was pointed out that since such children are brought up in unfaithfulness and unstable families, they may end up despising marriage. Besides despising marriage, it was further pointed out that since such children observe inappropriate behaviour, they may end up copying it, as argued one participant:

> "Mma, ha batho ba nna hela ba sa nyalana, gantsi ga ba totane thata, mme seo se dire gore ba tsietsane, jalo go tise dintwa mo lapeng leo. Jalo bana ba ka gola ba ithaya ba re seo ke sone botshelo." (Madam, if people stay together without being married to each other, they do not give each other the respect, hence they can end up being unfaithful to each other, if such happens it can lead to fights in that family. Kids would then follow suit thinking that that is the way to live.)

As gathered from this quote, it is likely for a child to lack respect for others or value fighting because he or she saw the parents fighting. We hasten to point out that the family is the first agent of socialisation responsible for enhancing moral development of children before they interact with the wider community. Now if cohabitation is likely to have negative implications for the moral development of children, we would argue that this practice can only be morally acceptable if it is capable of contributing towards a moral nation.

Besides being an impediment to moral development of children, it is also evident from these findings that the social ills experienced and observed by such children is likely to destroy their emotional wellbeing. In such cases where the other partner dies, relatives may claim property, leaving the remaining partner and the children with limited financial and emotional support, especially if the deceased was the main earner of income. Arguably, such children may have low self-esteem and be predisposed to mental health difficulties including depression and may have their school attendance severely affected. The use of surnames may also affect the

mental state of the children since children in cohabiting relationships usually use their mother's surname. This may traumatize such children through bullying and lack of self-identity as they may wonder why they are not using their father's surname like the rest of the children in their class, school or church.

Possible Strategies to curb the increase of Cohabitation

Having established the major reasons why people cohabit and some of the major challenges of this practice, the researchers were then interested in establishing possible strategies in curbing this practice. In the first place respondents pointed out that there is need to standardise bride price. Secondly, it is the few of some respondents that Batswana should give priority to marriage rather than opting for cohabitation. Let us further explore these two views.

Majority of respondents indicated that the increase of cohabitation can be curbed only if the bride price can be standardized. High charges of bride price are exclusively associated to the rapid increase of cohabitation amongst Batswana. Now, it is imperative to establish who should address this issue of standardization. Interestingly, some participants pointed out that parents should play a significant role, as illustrated by these extracts, amongst others:

> *"Heela, a ba hokotse go gweba ka bana. Kana dilo di a tura." (Hey, they should minimize using their children as business commodities. Things are expensive nowadays).*

> *"A batsadi ba hokotse dilo tse ba di batang fa bana ba re ba a nyalana. Kana ba bangwe ba bata go rekelwa masika dilwana, ba bo ba ntse ba bata dikgomo fa godimo." (Let parents reduce items that they wish for when their children get married. Some want certain items for relatives and would also want cattle on top).*

It follows that parents can play a crucial part in reducing the increase of cohabitation by reducing the bride price. Hopefully, their decision and action on this issue may encourage people to get married especially that the cost of living is perceived as very high, as gathered from the findings on this topic.

Still on this issue, these findings reveal the increase of cohabitation can be curbed by the government through policies geared towards the standardization of bride price across the country, as agues one participant:

> *"Kana (mind you) govi… (Government) has the power to change anything. Heela (Hey) do you remember how he increased the price for alcohol! Govi can make a law to standardize the bride price payment across the country. That will be fair to everyone concerned."*

What can be gathered from these findings is that some respondents associate the increase of cohabitation with high charges of bride price, with great emphasis on lack of standardization. We therefore argue that perhaps Batswana need policies geared towards the standardization of this practice in order to curb the increase of cohabitation.

Finally, though in the minority, some respondents pointed out that Batswana should fully commit themselves to marriage, rather than giving priority to cohabitation. It was emphasized that this could curb instances where the in-laws get all the property if one partner dies as this

traumatizes children. As argued, if partners are married, social ills such as cheating, unfaithfulness, fights and even passion killings will possibly be reduced.

However, while some participants do not deny that bride price could be a contributing factor to cohabitation, they at the same time blame Batswana for aspiring expensive weddings and their lack of preference for customary law weddings. These attitudes, as argued, become a great impediment to many partners' decision and plans to get married, as illustrated by these verbatim quotes:

> *"Kana ke gore Batswana re rata dilo tse di turang,(its only that Batswana like expensive things) a person can just opt to go to the magistrate court and get married without having to spend money on expensive tents and wedding gowns. Having done that one would then have full protection of the law if that affair does not work out. Ga gona yoo ka tang a ikgagapelela dithoto tsa bana ba gago" (No one would then come and claim your children's property.)*

> *"Kana lenyalo ga se go rentisa tante ya mabaibai which is common nowadays."* (marriage is not about hiring an expensive tents which is common nowadays). The magistrate officer does not even ask you if you have paid the bride price or not. So it would be wise to just get married using the customary law."

It becomes evident from the above quotes that high wedding costs seem to be another contributing factor to the increase of cohabitation. This being the case, while we are not undermining the high charges of bride price as an impediment to marriage, we argue that perhaps cohabitation could also be reduced if people value marriage rather than using lack of affordability of expensive weddings as an escape goat.

CONCLUDING REMARKS

Following the Kantian school of thought, one may ask why someone should engage in an act that is more likely to harm or hurt him/her and his/her children. As these findings have revealed, children in cohabiting families may be traumatized by a lot of factors. Here we argue that such a child is more likely to have low self-esteem, withdrawn and at times being violent to other children and even to the teachers. If this happens, arguably, the academic performance of the child is likely to deteriorate.

Furthermore, according to MacNiven (1993) the Greatest Happiness Principle holds that actions are right only if they tend to promote happiness for the greatest number of people, wrong if they tend to produce unhappiness and pain for the greatest number of people. The findings have revealed that cohabitation has negative consequences for those involved. It may be argued that cohabitation is morally unjustified as it brings more harm than good to the parties involved.

However, the advocates of cohabitation have given multifaceted reasons to justify the increase of this practice among Batswana. Based on these justifications, the major conclusion of this study is that whilst cohabitation may not be socially and legally acceptable, it has become a norm nowadays. This being the case, this study recommends that:

o   The government should seriously consider the issue of standardizing the bride price so as to encourage people to get married.
o   Since one of the aims of Moral Education is to equip learners with tools of judgment in various situations, perhaps cohabitation could be included in the Moral Education syllabus to enlighten learners of both the advantages and challenges of this practice.

References

Axinn, W. and Thornton, A. (1993). Mothers, Children, and Cohabitation: The Intergenerational Effects of Attitudes and Behavior. *American Sociological Review, 5*8 (2), 233-246.

Bulanda R. E. and Manning, W. D. (2008). *Parental Cohabitation, Experiences and Adolescent Behavioral Outcomes. Population Research and Policy Review, 27*, 593-618.

Goodman, N. (1993). *Marriage and the family.* U.S.A.: Harper Perennial.

Haralambos M. and Holborn M. (1995). *Sociology- Themes and Perspectives. (4th ed.).* London: Harper Collins Publishers.

Hertz, F. (2012). *Living Together and the law*. Retrieved October 05, 2012, from http://www.Nolo.com

Hohmann-Marriott, B. E. (2006). *Shared Beliefs and the Union Stability of Married and CohabitingCouples.* Journal of Marriage and Family, 68, 1015-1028

MacNiven, D. (1993). *Creative Morality,* London: Routledge & Kegan.

Mookodi, G. (2004). The Dynamics of Domestic Violence Against Women In Botswana. *PULA: BotswanaJournal of African Studies, 18,* (1), 55-64.

Mokomane Z. (2004). *No Rings Attached: An Exploration of the Levels, Patterns and Socio demographic Implications of Cohabitation in Botswana*. Ph.D. Thesis. Canberra: The Australian National University.

Nkomazana, F. (2005). Gender analysis of bojale and bgwera intinition among Batswana. *BOLESWA Journal*

of Theology, Religioin and Philosophy, 1 (1), 26-49.

Otlhogile B. (1994). *"Mistress at law: The Case of an Unprotected Dependant*." *PULA: Botswana Journal of African Studies.* 8 (2).

Ponzetti, Jr. J. J. (editor-in-chief). (2003). (The International Encyclopedia of Marriage and Family, (2nd ed.). Volumes 1-4 (set) New York: Macmillan

Thobega, C. (2012). *Commercialization of Bogadi.* Retrieved June 05, 2012, from http://www.mmegi.bw.

Seltzer, J. A. (2000). *Families Formed Outside of Marriage. Journal of Marriage and Family, 62,* (4), 1247-1268.

Smock, P. J. (2000). *Cohabitation in the United States: An Appraisal of Research Themes, Findings and Implications.* Annual Review of Sociology 26, 1–20.

Waite, L. J. (2000). *The Negative Effects of Cohabitation. The Responsive Community,* 10, (1), 31-38.

An Analytical Approach On Improvement Of Kitchen Design Performance In Terms Of Psycho-Social User Requirements In Turkey

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ABSTRACT

A kitchen design with high performance can be achieved only by creating appropriate solutions in line with the requirements of the person(s) who will use the kitchen. User requirements are mainly divided into two groups as physical requirements and psycho-social requirements. One of the psycho-social requirements of users can be considered as aesthetic needs. When we consider aesthetic requirements in the design of the kitchen we see that the most important components are the countertop material and the cabinet door type and the visual harmony between them. The target and objective of this study in this context is to obtain the statistical data revealing which cabinet door type is used in combination with which countertop material in kitchen design and convert the results incident to such statistical data into a meaningful data analysis table that will help the designer to make the right decision in the choice of cabinet door type and the countertop material. The cabinet door types and the countertop materials which will be studied have been defined at the first stage as the methodology of this study within the purview of this defined scope and purpose with the grounds thereof. Subsequently, 1.309 actual kitchen projects have been examined in order to obtain statistical data showing the relationship between the countertop materials and the cabinet door types. In the final stage of the study the mathematical relationship between these statistical data obtained as a result of these examinations have been converted into a meaningful data analysis table.

Keywords: Interior architecture, kitchen design, performance based design, countertop material, cabinet door type.

INTRODUCTION

It is a reality expressed in literature that evolving and changing conditions in the field of interior design and the application thereof has to be taken into account and restructuring efforts in this direction must be inevitably performed. In this approach, it is inevitable to determine "performance" as one of the key concepts and rethink the whole process of in the context of "performance-based design" [1; 2; 3].

Performance is a measurable phenomenon. Level of performance and criteria in the achievement of a target is the important issue. Performance in interior design has been one of the main issues dealt with in recent years. Kitchen is the field which is one of the most studied areas with a view to improve the performance of interior design. The reason for this is that it is the most important area of working compared to other areas and as such the area from which high performance is expected in terms of numerous criteria such as functionality, durability and hygiene. It has been observed in the research conducted that much as an average of two hours is spent in the kitchen during the day, the cupboards are opened and closed more than 80 times during this time of and activities as to different functions are repeated more than 50 times [4]. Furthermore, kitchen is the area which is renewed mostly by34% and again it is the most costly area in terms of design in a house [5; 6]. In addition to

all these, kitchen is the area for a designer which has to be resolved almost in all projects. [2; 3].

When we examine the studies conducted in kitchen design performance it can be seen that Cline [7] examines the performance of kitchen design criteria for impaired users. Rivette's [8] work is concerned with the performance of the kitchen ventilation system. Lamkins [9] examines the performance of the kitchen sink systems. Panwar [10] evaluates the design and performance incident to effective use of gas in the ovens. O'Heir [11] indicates that use of industrial products equipped with digital technology in kitchens will improve the design performance of this space. In the study of Lyon et al. [12] types of cooking depending on the age of the users have been evaluated and the design 'performances of the kitchens were examined in this context. Fishwick's [13] work makes recommendations for improving the performance of the kitchen in terms of the safety. When we examine Asensio and Ubach [14], Baden-Powell [15], Beazley [16], Cerver [17], Conran [18], David [19], Edic and Edic [6], Jankowsk [20], King [21], Lovett [22], Rand and Perchuk 's [23] studies it is observed that they explain basic design principles regarding the project planning process in order to increase the kitchen design performance. Grandjean [24], Panero and Zelnik [25], Pheasant [26], Rymal [27] and Salvendy's [28] studies explain the standards as to human dimensions and the design criteria depending on these sizes with an eye to increase the kitchen design performance [2].

It has been determined that scientific studies with a view to increase the kitchen design performance as a result of all these researches are mainly divided into two groups. The first group of these is the ones about industrial performance of kitchen products. Studies in the other group explain the basic design rules with a view to increase the kitchen design performance [2].

A kitchen design with high performance can be achieved by producing appropriate solutions in line with the needs of the person(s) who will use the kitchen. User requirements denote all the environmental and social conditions that help people to sustain their lives without discomfort as to physiological, social and psychological aspects. In other words, they determine the minimum qualifications that have to be in a space. Any deficiency in these qualities creates discomfort for the user [29]. User requirements are basically divided into two groups as physical and psycho-social needs of the users [30]. Physical user requirements are classified as spatial, thermal, auditory, visual, health and safety requirements. The psycho-social user requirements are privacy, behavioral and social and aesthetical needs [31; 32].

One of the most important psycho-social user requirements are aesthetics requirements. Aesthetic requirements are values based on visual effect regarding the space that will enable users to be satisfied psychological [33]. Considering the aesthetic requirements in the design of the kitchen, the most important components are the countertop material and the cabinet door type and the visual harmony between them. The reason for this is that almost all kitchen furniture consists of these two components. In other words, selection of countertop material and cabinet door type has to be made in the most correct way in order to increase the success of the kitchen design from the psycho-social aspect.

In this context, it was investigated in the first phase of the study if there are scientific methods by which the designer can make the selection of countertop material and cabinet door type during the process of kitchen design model in a manner to be harmonious with each other. Numerous design tips have been found as a result of the literature researches carried out

within this context for determining countertop material and cabinet door type however scientific data showing the relationship between these two design decisions has not been found [14; 15; 16; 17; 18; 20; 21; 22; 23; 34; 35; 36; 37; 38; 39; 40; 41; 42; 43; 44; 45; 46; 47; 48; 49].

PURPOSE AND METHODOLOGY

The target and objective of this study in this context is to obtain the statistical data revealing which cabinet door type is used in combination with which countertop material in kitchen design and convert the results incident to such statistical data into a meaningful data analysis table that will help the designer to make the right decision in the choice of cabinet door type and the countertop materials. The cabinet door types and the countertop materials which will be studied have been defined at the first stage as the methodology of this study within the purview of this defined scope and purpose with the grounds thereof. Subsequently, 1.309 actual kitchen projects have been examined in order to obtain statistical data showing the relationship between the countertop materials and the cabinet door types. In the final stage of the study the mathematical relationship between these statistical data obtained as a result of these examinations have been converted into a meaningful data analysis table.

DETERMINATION OF THE CABINET DOOR TYPES AND THE COUNTERTOP MATERIALS THAT WILL BE ANALYZED WITHIN THE PURVIEW OF THE STUDY

The countertop materials and the cabinet door types used in interior design were found to be in a large number after the research made. However, when countertop materials and the cabinet door types of the company's product line which was taken as example were examined it was observed that they are as in Table 1. Therefore the study will be based on only countertop materials and the cabinet door types seen in Table 1.
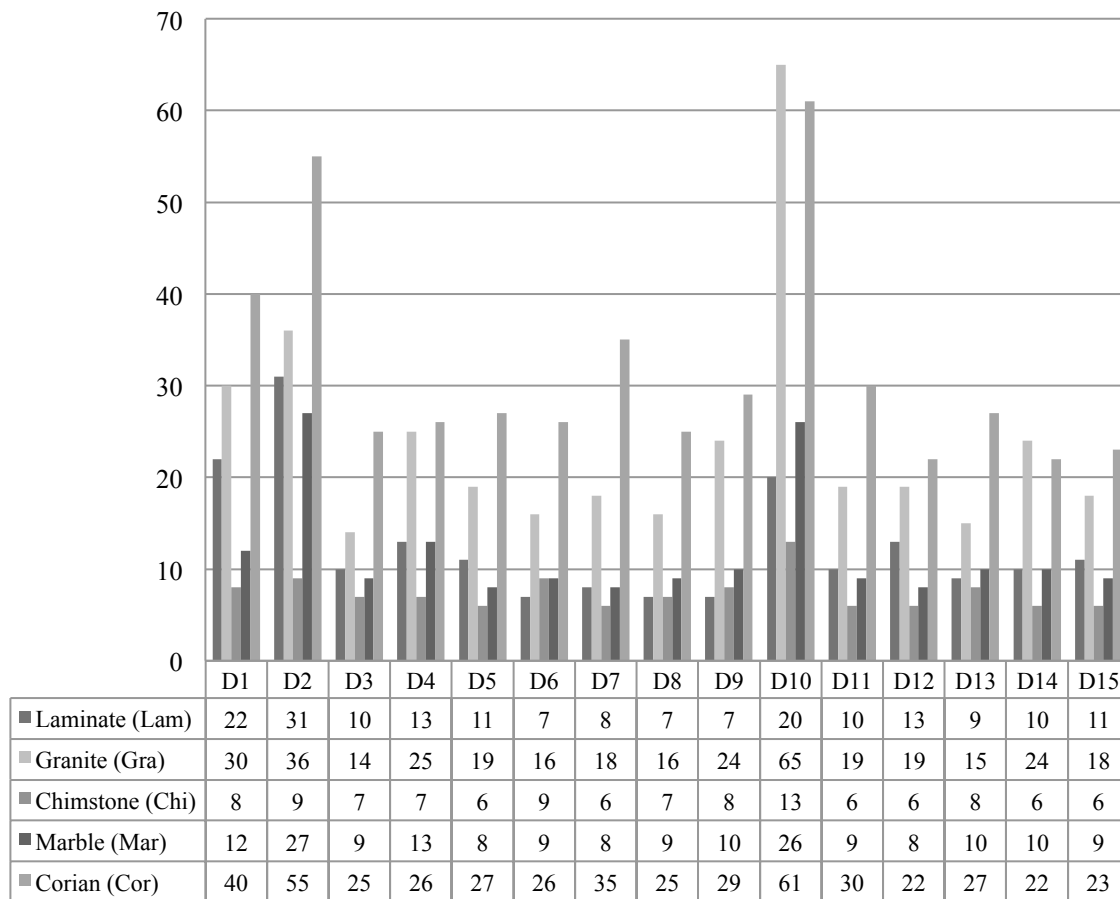
Table 1. The countertop materials and the cabinet door types of the company which was taken as example

Cabinet Door Type		Countertop Material	
Name	Description	Name	Description
D1	Laminated chipboard (Juglans, Lime oak, Natural, Leandro walnut, Teak)	Lam	Laminate
D2	Laminated MDF (Framed Italian walnut, Framed natural)	Gra	Granite
D3	Matte PVC-polyester coated MDF (Vanilla, Tobacco)	Chi	Chimstone
D4	MDF veneered with matte PVC-polyester combination (Ecru)	Mar	Marble
D5	Chipboard veneered with textured PVC-polyester combination (Smartlam cacao, Smartlam natural oak, Smartlam white)	Cor	Corian
D6	MDF veneered with matte PVC-polyester combination (White)		
D7	Solid wood door (Chestnut)		
D8	Solid wood door (Walnut)		
D9	MDF veneered with glossy PVC-polyester combination (High glossy zebrano, High glossy ebony)		
D10	MDF veneered with glossy PVC-polyester combination (High glossy coffee, High glossy cappuccino, High glossy white, High glossy vanilla, High glossy burgundy, High glossy black)		
D11	MDF membrane veneered (Refined oak)		
D12	MDF membrane veneered (Refined walnut)		
D13	Solid wood door (Oak, Venge)		
D14	MDF glossy varnish (Apple green)		
D15	Solid wood door (Cherry)		

OBTAINING THE STATISTICAL DATA SHOWING THE RELATIONSHIP BETWEEN THE COUNTERTOP MATERIALS AND THE CABINET DOOR TYPES

1.309 actual kitchen projects obtained from a company that has dealers in different cities of Turkey has been analyzed by using an architectural CAD software named ArchKitchen with an eye to obtain the statistical data showing the relationship between all countertop materials and the cabinet door types determined at the previous stage of the study. The reason for preference of ArchKitchen software in this study is because the company employs the same software in delivery and order of the kitchen projects and the presence of all three-dimensional kitchen projects of the company in the cited software. As such, in lieu of performing data collection by hand they were performed via computer by virtue of ArchKitchen software and in this way significant time saving was realized. As a result of the examinations made, numerical distribution of statistical data revealing which cabinet door type is used in combination with which countertop materials has been seen to be as shown in Figure 1.

Figure 1.Distribution of statistical data revealing which cabinet door type is used in combination with which countertop materials

	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11	D12	D13	D14	D15
Laminate (Lam)	22	31	10	13	11	7	8	7	7	20	10	13	9	10	11
Granite (Gra)	30	36	14	25	19	16	18	16	24	65	19	19	15	24	18
Chimstone (Chi)	8	9	7	7	6	9	6	7	8	13	6	6	8	6	6
Marble (Mar)	12	27	9	13	8	9	8	9	10	26	9	8	10	10	9
Corian (Cor)	40	55	25	26	27	26	35	25	29	61	30	22	27	22	23

It was analyzed separately which cabinet door type is used in combination with which countertop materials in order to make it meaningful for the designer in utilizing in the selection of cabinet door types and countertop materials in Figure 1 at this stage of the study. As a result of this analysis results in Table 2 were achieved.

Table 2. Usage Rate of Countertop Materials Compared with Cabinet Door Types

D1	D2	D3
Cor 36%, Lam 19%, Gra 27%, Chi 7%, Mar 11%	Cor 35%, Lam 19%, Gra 23%, Chi 6%, Mar 17%	Lam 15%, Cor 38%, Gra 22%, Chi 11%, Mar 14%

D4	D5	D6
Lam 16%, Cor 31%, Gra 30%, Chi 8%, Mar 15%	Lam 16%, Cor 38%, Gra 27%, Chi 8%, Mar 11%	Lam 11%, Cor 39%, Gra 24%, Chi 13%, Mar 13%

D7	D8	D9
Lam 11%, Cor 46%, Gra 24%, Chi 8%, Mar 11%	Lam 11%, Cor 39%, Gra 25%, Chi 11%, Mar 14%	Lam 9%, Cor 37%, Gra 31%, Chi 10%, Mar 13%

D10	D11	D12
Lam 11%, Cor 33%, Gra 35%, Chi 7%, Mar 14%	Lam 13%, Cor 41%, Gra 26%, Chi 8%, Mar 12%	Lam 19%, Cor 32%, Gra 28%, Chi 9%, Mar 12%

D13	D14	D15
Lam 13%, Cor 39%, Gra 22%, Mar 14%, Chi 12%	Lam 14%, Cor 31%, Gra 33%, Chi 8%, Mar 14%	Lam 16%, Cor 34%, Gra 27%, Chi 9%, Mar 14%

STATISTICAL DATA ANALYSIS FOR PROVIDING VISUAL HARMONY OF CABINET DOOR TYPES AND COUNTERTOP MATERIALS

The statistical results showing the relationship between countertop materials and cabinet door types obtained from 1.309 real kitchen projects were interpreted in Table 2 in a systematic way and converted into a data analysis table which the designer can use in selection of countertop materials and cabinet door types (Table 3). The selection of countertop material in harmony with cabinet door type will be made in a more convenient way regarding aesthetic aspect and this will make it possible to increase the kitchen design performance in terms of requirements psycho-social users.

Table 3. Data Analysis showing the relationship between countertop materials and cabinet door type

Countertop Materials	Cabinet Door Type
Laminate	D1 and D2 are the cabinet door types with which laminate countertop materials are used most. D9 is the cabinet door type with which laminate countertop materials is used less.
Granite	D10 is the cabinet door type with which granite countertop material is used most. D9 is the cabinet door type with which granite countertop material is used less.
Chimstone	D13 is the cabinet door type with which chimstone countertop material is used most. D6 is the cabinet door type with which chimstone countertop material is used less.
Marble	D2 is the cabinet door type with which marble countertop material is used most. D1, D5 and D7 are the cabinet door types with which chimstone countertop material is used less.
Corian	D7 is the cabinet door type with which corian countertop material is used most. D4 and D14 are the cabinet door types with which corian countertop material is used less.

RESULTS

The designer will be able to see which cabinet door type is used in combination with which countertop material by looking at the results in Table 2 and Table 3 obtained through statistical data. Selection of materials for the kitchen countertop will be performed in a more harmonious way with the cabinet door type thanks to these tables from the aesthetical aspect and this will make it possible to increase the kitchen design performance in terms of psycho-social user requirements. In addition the following results are seen thanks to these tables: the most preferred countertop material among 1.309 kitchen projects is corian with 36% while the less preferred countertop material is chimstone with 9% compared. Similarly the most preferred cabinet door type is D10 with 14% and D2 with 12%. This and similar information will in particular help to the kitchen producers which make wholesale as well as the seller companies for a more accurate determination of the amount of their stocks.

References

[1] Arslan, S. and Kanoğlu, A. (2010). Başarım Tabanlı Yapım: Anahtar Kavramlar, Olanaklar, Bariyerler ve Bir Model, 1. Proje ve Yapım Yönetimi Kongresi, 29 September-1 October 2010, ODTÜ Kültür ve Kongre Merkezi, Ankara.

[2] Yazıcıoğlu, D.A. (2014). "A Statistical Data Analysis for Increasing The Kitchen Design Performance", *İTÜ AIZ*, Spring Vol.11, No.1, pp.174-184.

[3] Yazıcıoğlu, D.A. (2014). "An Analytical Approach on Material Selection For Increasing Design Performance in Interior Architecture Projects", *Academic Research International*, Vol.5(3), pp.1-11.

[4] Dynamic Space. (2008). Tool For Evaluating Kitchens, <http://www.dynamicspace.us/dynamicspace/en/04/01/06/index.html>, viewed: 5 October 2008.

[5] Amana. (2010). Kitchen 'Top of Mind' For Design Upgrades: Amana Survey, Reveals Reported in Kitchen and Bath Design News, <http://prestige123.com/What's-New.html>, viewed: 13 February 2010.

[6] Edic, M. and Edic, R. (1999). *Kitchens That Work: The Practical Guide to Creating a Great Kitchen*, The Tauton Press.

[7] Cline, H. L.(2006), The Evaluation of Universal Design Kitchen Features by People in Wheelchairs, Virginia Polytechnic Institute and State University, ProQuest, UMI Dissertations Publishing.

[8] Rivet, B.(2009), Kitchen Ventilation Systems: Saving Energy Without Sacrificing Performance, Consulting - Specifying Engineer, Vol.46, No.4, 6-8.

[9] Lamkins, C. (2011), Kitchen and Bath Design: Sink Systems, Professional Builder.

[10] Panwar, N. L. (2009). Design and Performance Evaluation of Energy Efficient Biomass Gasifier Based Cookstove on Multi Fuels, Mitigation and Adaptation Strategies for Global Change, Vol.14, No.7, 627-633.

[11] O'Heir, J. (2007), Cooking Up a Digital Kitchen, Dealerscope, Vol.49, No.8, 50.

[12] Lyon, P., Mattsson Sydner, Y., Fjellström, C., Janhonen-Abruquah, H. and Schröder, M. (2011), Continuity in The Kitchen: How Younger And Older Women Compare İn Their Food Practices And Use Of Cooking Skills, International Journal of Consumer Studies, Vo.35, No.5, 529-537.

[13] Fishwick, T. (2006), Stay Safe in The Kitchen - Despite The Heat, Loss Prevention Bulletin, Vo.191, 23-26.

[14] Asensio, P. and Ubach, M. (2003). *Kitchen Design: Kuchen Design*, teNeues Publishing Group, Kempe, pp.27-29.

[15] Baden-Powell, C. (2005). Architect's Pocket Book of Kitchen Design, Elsevier, Maryland Heights.

[16] Beazley, M. (1999). The New Kitchen Planner, Ocopus Publishing Group Ltd, London.

[17] Cerver, F.A.(2006). Ultimate Kitchen Design, The Neues Publishing Company.

[18] Conran, T. (2002). Kitchens The Hub of The Home, Conran Octopus Ltd, London.

[19] David G. (1994), Smart Kitchen: How to Create a Comfortable, Safe, Energy-Efficient, and Environment-Friendly Workspace, Ceres Press.

[20] Jankowski, W. (2001). *Modern Kitchen Workbook: A Design Guide for Planning a Modern Kitchen.* Rockport Publishers, Beverly.

[21] King, H. T.(2006). *Design Ideas For Home Decorating*. Creative Homeowner Press, Emeryville.

[22] Lovett, S. M. (2006). *The Smart Approach to Kitchen Design*. Creative Homeowner Press, Emeryville.

[23] Rand, E. and Perchuk, F. (1991) The Complete Book of Kitchen Design, Consumer Reports Books, New York.

[24] Grandjean, E. (1973), Ergonomics of the Home, Halstead Press, Division of John Wiley & Sons, New York.

[25] Panero, J. ve Zelnik, M. (1979), Human Dimension & Interior Space: A Source Book of Design Reference Standards, Watson-Guptill Publications, New York.

[26] Pheasant, S. (1996), BODYSPACE Anthropometry, Ergonomics, Design, Taylor & Francis, London and Philadelphia.

[27] Rymala, M. (2011). Application of Ergonomics in Kitchen Designing - Indian Perspective: Use of Anthropometric Measurements, Environmental Factors and Comfort Features For Efficient and Pleasant Cooking, LAP LAMBERT Academic Publishing.

[28] Salvendy, G. (1997), Handbook of Human Factors and Ergonomics, Wiley Interscience,U.S.A.

[29] BaÜ. (2005). Mimarlığa Giriş, <http://bauarchitecture.files.wordpress.com/2010/09/ders-2.pdf>, viewed 22 March 2014.

[30] Kıran, A. and Polatoğlu Baytin, Ç. (2006), Bina Bilgisi' ne Giriş, Yıldız Teknik Üniversitesi Basım-Yayın Merkezi, İstanbul.

[31] Arcan E.F. and Evci F. (1992), Mimari Tasarıma Yaklaşım 1-Bina Bilgisi Çalışmaları, İki K Yayınevi, İstanbul.

[32] Yazıcıoğlu, D.A. (2014). "An Analytical Approach for Cabinet Door Type Selection in Kitchen Design", Academic Research International, Vol. 05 No.04, pp.14-22.

[33] Korur, S., Sayın, S., Oğuzalp, E.H. ve Korkmaz, S. Z. (2006). Konutlarda Kullanıcı Gereksinmelerine Bağlı Olarak Yapılan Cephe Müdahalelerinin Fiziksel Çevre Kalitesine Etkisi, Selçuk Üniversitesi Mühendislik-Mimarlık Fakültesi Dergisi, c.21.

[34] Beamish, J., Parrott, K., Emmel, J., Peterson, M.J. (2013). Kitchen Guidelines, Codes, Standarts, NKBA, Wiley, Canada.

[35] Bouknight, J.K. (2013). *Kitchen Idea Book*, Taunton Press.

[36] Brunk, G. G., Kovach, S. and Michael Jones, M. (2003). The Complete Idiot's Guide to Remodeling your Kitchen Illustrated, Alpha.

[37] Calley, E. (2007). *Kitchens: Creating Beatiful Rooms From Start to Finish*, House Beatiful Design and Decorate, Hearst Corporation.

[38] Clark, S.(2003). *Remodelling a Kitchen*, The Taunton Press.

[39] Cool Springs Press (2013). The Complete Guide to Cabinets and Countertops, Cool Springs Press.

[40] Goldberg, J.(2012). New Kitchen Ideas that Work, Taunton Press.

[41] Grey, J. (2002). *The Art of Kitchen Design*, Cassell.

[42] Hufnagel, J.A. (1991) Kitchens: Design, Build, Remodel, Creative Homeowner Press, Emeryville.

[43] Maney, S.(2003). *The New Smart Approach to Kitchen Design*, Creative Home Owner.

[44] McLellan, T. (2003).*Small Spaces, Beautiful Kitchens*, Rockport Publishers.

[45] Meyer, L. and Roth, R. (2007). *Remodel This: A Woman's Guide to Planning and Surviving The Madness of a Home Renovation*. Perigee, London.

[46] Mielke, R. (2005). *The Kitchen*, Feierabend Verlag, Ohg.

[47] Sweet, F. (2003). *Kitchen Essentials,* Ryland Peters and Small, Inc., New York.

[48] Taylor, L. (2003). *Kitchens*, New Holland Publishers Ltd., London.

[49] Veilette, B. (2007). *Kitchen Ideas that Work: Creative Design Solutions for Your Home*, Taunton Press.