CONTEMPORARY MARKETING OF POLISH UNIVERSITIES – RESEARCH ASPECT

HALL Hanna* & WITEK Lucyna**

Hall Hanna, Rzeszow University of Technology, Faculty of Management, Department of Marketing, Rzeszów, Aleja Powstańców Warszawy 12, 35-959, Poland, E-mail:hhall@prz.edu.pl*
Witek Lucyna, Rzeszow University of Technology, Faculty of Management, Department of Marketing, Rzeszów, Aleja Powstańców Warszawy 12, 35-959, Poland, E-Mail: lgarbacz@prz.edu.pl**

ABSTRACT

Abstract- The aim of the article is to analyze the meaning and scope of marketing research at Polish universities as a key element of the marketing of these market actors. The article focuses on the areas of marketing research at universities which are discussed in various publications in this field and then the examples were given. Particular attention was paid to opinions of representatives of bodies involved in the marketing of public and private universities obtained through primary research carried out by In-Depth Interviews (IDI) on the research practices in the management of universities and their usefulness.

In the area of primary research at Polish universities, the research among candidates or students on motives (reasons or criteria) of choice of university, the information sources and monitoring activities of the competition are gaining importance. As for the competitive analysis the majors of study and forms and means of promotion are dominating. The importance of research on student satisfaction is also growing, but it still seems to be insufficiently popular in relation to the significance. The research among potential candidates (high school students) seem to be underestimated in terms of their expectations of the university, selection criteria, etc. Due to changes in Polish legislation which are related to university education, the surveys on employers' expectations with respect to students and graduates are gaining importance, even though they are rarely implemented. The basis for the above conclusions was an analysis of the amount of publications on the subject of marketing research in university education over the years, and the opinions of author's respondents.

Keywords: higher education marketing, marketing research areas, marketing research in higher education

INTRODUCTION

Modern university environment, which changes at an unprecedented pace of determines high risk of their activities, affects a significant increase in the importance of marketing as a management philosophy universities, with particular emphasis on marketing research to help minimize this risk.

Demographic conditions belong to the university environment segments and have a particularly adverse effect on the functioning of the institution. Poland's demographic decline caused that since academic year 2006/2007 the number of students has been constantly decreasing (from the year 1990/1991 to 2006/2007 the educational boom took place - the number of students in this period increased by 370% - from 404 thousand to 1 941 thousand [14]). In the academic year 2013/2014 in 438 universities of all types (132 public and 306 private) 1 550 thousand students were educated [18]. Over the next 10 years (till 2025) the number of young people aged 20-24 in Poland will decrease by almost 700 thousand [13] (after a slight increase, however after 2030 there will be a further decline). Most of the private universities (where currently almost 400 thousand students are studying) will have to be closed and most of the paid studies at private universities [19]. The importance of marketing as a management concept will therefore certainly grow, and the concept itself will evolve according to the changing environment, with particular emphasis on technological developments, especially usage of the Internet and multimedia devices, which are now an integral part of everyday life of young people.

Polish universities currently employ a wide range of marketing tools and activities that make up the modern marketing concepts, including inbound marketing, relationship marketing, permission marketing, mobile marketing, Corporate Social Responsibility. Marketing at Polish universities has now reached a mature

and professional character, not giving way to marketing practices in the field of advanced enterprises. Dynamic development of marketing at university education has been possible, among others, thanks to the evolution of attitudes of university authorities (mainly public ones) with respect to marketing towards its total acceptance (this adaptation at the beginning of this century encountered significant barriers from academia due to wrong treatment of marketing as a concept of promotion and sales capacity, unacceptable in institutions which are universities).

One of the manifestations of the use and development of marketing-oriented university is the implementation of its marketing research. The aim of the article is to analyze the meaning and scope of marketing studies at Polish universities on the basis of the publications on this subject and expressed opinions of representatives of universities responsible for their marketing during the conducted In Depth Interview.

LITERATURE & THEORY

In foreign publications on marketing and management at higher education, especially in journals covering these topics (i.a.: Journal of Educational Research, Journal of Marketing for Higher Education, Journal of Marketing, International Journal of Educational Management, Research in Higher Education, Higher Education) special attention in the area of marketing research of university is devoted to: satisfaction of students, among others, measurement methods, identification criteria (determinants), models of satisfaction as the effects of the measure, as well as loyalty and retention of students and university relations with stakeholders [2, 5, 6, 8, 16]. These publications are usually characterized by a subjective and wider scope of this study than in Polish publications. Publications relating to marketing research at Polish universities are mostly common tests for specific university management (carried out among the candidates for studies at the university, its students and graduates), published mostly in the form of reports and online articles. As the analysis of publications on marketing research carried out among candidates (or students) at the university shows, they relate mostly to motives or criteria for selection of the university (faculty or major), used in decision-making sources of information, the image of the university [11, 12, 20].

Research carried out among students focus on academics assessment and lectures conducted by them (these tests are mandatory in accordance with the Higher Education Law of 27 July 2005) on satisfaction from studies [1, 3].

Surveys among graduates include issues on their views of a university and professional career [10].

Currently the surveys among employers gaining importance as a result of statutory necessity to approach the university education sector to the labor market. These studies concern employers' opinions on university graduates and expectations with respect to them [17].

National or regional research not motivated by the benefits in the management process (with particular emphasis on strategies and marketing activities) of the specific university but the entire university education sector or region are carried out by specialized research institutes or as a part of specialist scientific or research projects. They concern, among others, adaptation of modern marketing concepts by higher education institutions, the role and effectiveness of these concepts in the management of universities, including the social responsibility of universities, relationship marketing, inbound marketing (with particular emphasis on social media).

An increase of the number and diversify of the subject of marketing research conducted by universities indicate a rapid growth of interest taken in the subject of the article and the role of marketing research in the functioning of modern university.

RELATED WORKS OR DISCUSSION

Marketing research as a basis for university marketing is a very broad issue which consists of research in the area of the conditions of functioning of the university, marketing instruments and results of operations. Both Polish and foreign publications on this subject tend to focus only on selected aspects of this issue.

As mentioned in the previous section of the article, student satisfaction occupies a special place as a matter of university marketing research due to the ensuing numerous tangible and intangible benefits for the university, unattainable by other methods, such as, among others, "True loyalty" of customers. According to the

survey students who, based on their experience with the curriculum and the quality of facilities and services offered by the universities feel satisfaction, are more likely to be loyal to the university.

The key issues of particular interest to the authors on the satisfaction of students are research methodology and the importance of student satisfaction in the management of modern universities. As the analysis of publications of the methods on students satisfaction shows (as well as techniques and tools) these are both methods used for companies customer satisfaction including SERVQUAL [4], SERVERF [7], Importance-Performance Analysis (IPA) techniques [9] Student Satisfaction Survey [1] (research tools used in these methods are usually modified from the original in terms of the number and content of questions, scales of responses), as well as the original tools not related to the above specialized methods, constructed entirely by university staff. According to the authors in student satisfaction surveys Customer Satisfaction Index (CSI) and Net Promoter Score (NPS) can be also effectively used [15].

As far as the relevance of student satisfaction and its research in the management of modern universities "Students'choices have become a major concern for univertisities and meeting students' needs. This circumstance is now considered as one of the main objectives of universities […]. This means the universities should base their activities on information about students in general and about their changing behaviour patterns in particular" [5].

METHODS

Research carried out by the author were of a qualitative nature and were conducted with an application of In depth Interview method because of the need for full and cogent opinions of the respondents. The research was carried out among 14 representatives of Polish universities, i.e. among Deputy Chancellors (for marketing and development of the university) or departments managers responsible for marketing of the university. For the study there were selected two (public and private) colleges of 7 Polish cities that are capitals of provinces or districts, i.e. Poznan, Wroclaw, Warsaw, Rzeszow, Katowice, Krakow and Gdynia. The university representatives did not agree to provide names of their institutions primarily due to concerns about the possibility of using the information by the universities belonging to the "direct competition", i.e. the universities with the same activity profile, for example economic one (type of university is treated as less important in terms of competitiveness). The questions included in the research problem consisted of the following thematic groups: the need and scope for monitoring of marketing instruments and actions of other universities, formal marketing research (their subjective and objective scope and methodology of research) with particular emphasis on surveys on students satisfaction.

As measuring instruments, the study used an interview scenario with an average degree of standardization and a voice recorder. Interviews were carried out at the premises of the universities, in the period from April to November 2015. They lasted between 1-2,5 hours, depending on the degree of involvement of the university in marketing activities.

RESULTS

Within the first of the analyzed aspects related to the need and scope of the monitoring (observation) of activities of other universities, the majority of respondents gave a clear answer about the necessity of such actions in relation to competing universities. All respondents follow the activities of other universities, but mainly just selected ones which are the most competitive. As such they are usually considered higher education institutions with the same profile of education, regardless of the type of institution (public or non-public). However, there are such universities who follow the activities of all other universities in the region, and those (of the high prestige on the top of Polish rankings), where the observation of other universities are on the ad hoc basis. The object of observation for one institution of the latter group are foreign universities and only selected three universities in Poland.

The object of observation are mainly faculties and departments and used promotional tools. However, some universities watch "virtually all marketing tools, their types and extent of marketing activities". As it results from observations made by the respondents of other universities, the increasing intensity of their marketing efforts but above all increasing their professionalism are clearly visible. In both aspects the advantage

of private universities over the public ones is noticeable due to a larger budget on marketing. These activities, in terms of intensity, are excessive. According to one of the representatives of the university: "I can observe that these actions are hysterical, especially in the case of several private schools from mid-range." Unfortunately, too much intensity of promotional activities is also confirmed by students. In their view, the effects of such actions are contrary to the expected ones with negative emotions and negative image of the university.

As it results from the analysis of the responses to the questions in the second of the analyzed thematic groups on the ranges and marketing research methodology, one should pay attention to the differences in responsibility for marketing research, which in the case of public universities is more dispersed. They belong, depending on the test subject, to various organizational units (e.g. Departments of Education, Office of Career). The respondents represented public university marketing units usually had no idea on matters of research, which indicates some problems with the flow of information between internal units of the university. In the case of private universities, even if a different unit was responsible for the research, not just marketing department, the respondents were familiar with the scope and results of research and exploitation of the results declared in their actions.

Almost in all surveyed private universities online surveys online among candidates during the recruitment process or after it are carried out, mainly on the university information sources used in selection process. In every second university the research among high school students is conducted usually about the preferences of study and the university. Among the respondents there were also very involved research universities "in the study we also ask students about our rebranding, the current image, effectiveness of marketing tools". The research among students are usually performed during visits to schools as a part of the recruitment events.

The statutory mandatory testing of students on teaching activities are carried out at all universities. All the representatives of the universities recognized them as very important in the management of the university (negative assessment of workers in these studies imply a reprimand or even dismissal of employees).

Almost at all the surveyed universities there are carried out satisfaction surveys of students (three from public universities the respondent had no knowledge of the subject) using usual on-line survey but also using focus groups or individual surveys. In one of the private university only an analysis of opinions on Facebook are taken into consideration: "we analyze the opinions on Facebook and under their influence the appropriate steps are taken, for example because of many negative comments about one of the employees of the Dean's Office this person has been released" . Respondents representing universities, in which satisfaction surveys are carried out, evaluated both satisfaction surveys as well as the phenomenon of satisfaction as extremely important in the management of modern university (these studies were rated as the most important of all ongoing research among candidates or students on the use of information sources about the university in the process of selection). According to one respondent, "student satisfaction is very important to us [..] of course we investigate it we must check whether the promises we make to potential candidates are fully reflected in reality. We cannot allow this to make it otherwise."

CONCLUSION AND FUTURE WORK

In the article, due to its limited volume, the authors mainly paid attention to market research, whose results, in the opinion of university representatives, are considered as the most useful. The most valuable is the research on teaching evaluation, student satisfaction and sources of information about the university used by the candidates.

This research is usually performed using online questionnaires, designed by university staff. The views expressed on ongoing studies emphasize the priority of student satisfaction in the management of universities.

An important role for the marketing activities of schools has also observation of competitive universities. Involvement in this process seems to depend mainly on the market position of the university. Universities with a stable, strong position do not engage in observations of other universities so hard (in terms of number of observed universities and scope of observation) as universities with weaker position.

Within the study there was identified a problem associated with the flow of information between internal units of public universities on the results of the research, which can have a negative effect on their marketing decisions.

The scope of marketing research conducted at universities analyzed is wider than presented in the article. It includes, inter alia, research on alumni of opinions about the university and their further professional career, and research conducted among employers regarding the expectations of students and graduates. These issues, however, are very broad subject, which require special attention, both in terms of methodology and usability research. A separate article should be devoted to them.

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SUSTAINABILITY: ECOLOGICAL RESPONSIBILITY AND PROFILE OF GREEN CONSUMER

WITEK Lucyna* & HALL Hanna**

Rzeszow University of Technology, The Faculty of Management, Department of Marketing,
ul. Powstańców Warszawy 8, 35-959 Rzeszów, Poland, E-Mail: lgarbacz@prz.edu.pl*
Rzeszow University of Technology, The Faculty of Management, Department of Marketing,
ul. Powstańców Warszawy 8, 35-959 Rzeszów, Poland, E-Mail: hhall@prz.edu.pl**

ABSTRACT

Abstract - The processes of globalization, ongoing competition and pollution cause that modern companies seek not only to maximize profit, but they are forced to look for solutions to global problems. In the scientific literature and business practice you can see a growing interest in socially responsible consumer perception and socially responsible consumption. The article fits into the current research related to sustainable development are, thus contributing to meet the immediate needs of present and future generations and conservation of the natural environment and its biodiversity.

The aim of this paper is to contribute to a deeper knowledge of environmental determinants of consumer behavior, and attempts to profile the characteristics of the organic consumer. The discussion on environmental responsibility was taken, which is one of the areas of social responsibility of the consumer.

To implement the objective an ethnographic approach was employed. Two research methods were applied: participant observation and in-depth personal interview. The study was conducted among 17 consumers. The results show that green consumer behavior are determined not only by demographic factors but also by their lifestyles, environmental awareness, knowledge, personal values and incomes. Consumers are aware that consumption must be reduced to improve the quality of life for future generations and they feel responsible for purchases of products that do not harm the environment and society.

The studies create a deeper and more disaggregated analysis of the environmental aspects of consumer behavior. It has implications for managers in shaping the mix of marketing tools and communication of organic products attributes and is a significant basis for prediction of consumer behavior. The research studied is of practical importance for green business in the European Union, which is connected with reaching a certain position on the Community market. This paper implies values to society and helps it solve social problems.

Keywords: sustainability, green consumer, social responsible consumer, ecological responsible consumer, environmental awareness, green product, organic food

INTRODUCTION

Global society is facing many different challenges, problems and risks both of worldwide, national and regional nature. One of the most important problems of modern civilization is a threat to the natural environment around the globe and its individual components because of overexploitation of natural resources, inappropriate technology and increased consumption.

Discussions on these issues were already taken in the seventies in the Report for the Club of Rome. Then environmental issues developed under the influence of the Brundtland Commission report, which had an impact on the development of economic research, where a new perspective on the role and relationship of natural resources with economic development was developed. Modern commercial organizations seek not only to maximize profit, but they are forced to look for solutions to global problems. Their driving force is growing awareness of changes in the environment, they are trying to adapt their activities to market requirements. Socially responsible way of doing business is now an important and a competitive advantage, but on the condition that consumers expect from companies such course of action and make choices of their products [5].

Green Consumer Attitudes and factors determining them are currently one of the newest criteria that companies take into account in developing marketing programs.

In the scientific literature there is a debate about social values and their influence on consumer decision making [12,13,19]. Consumers' pro-environmental attitudes are one of the development trends of consumption and lifestyles. It means the use of goods to meet people's basic needs and improve their quality of life while minimizing the use of natural resources and the amount of waste and pollution, without endangering future generations [20].

LITERATURE & THEORY

Research suggests that consumers take into account the principles of sustainable development [8]. Consumers are increasingly interested in the conditions under which the products were manufactured. In this context, socially responsible consumption is associated with the ethical and moral canons as well as social and environmental factors that affect the choices of the consumer market. In the scientific literature, one can notice a growing interest in socially responsible consumer perception and socially responsible consumption [12,14]. Socially responsible consumer is defined as a consumer who takes into account social consequences because of their consumption and is trying to use their purchasing power to cause social change in the activities of companies [13]. Socially responsible consumption is defined as on-purpose consumer's choices based on their moral beliefs [9]. Another definition says of conscious and deliberate decision to buy brands because of personal moral beliefs and values [6]. Active environmental responsibility of the consumer is when a consumer buys products and services that have a positive impact on the environment and patronizes businesses that are trying to introduce positive social change [14].

Passive ecological responsibility of the consumer is to minimize or eliminate any harmful effects to the environment and the avoidance of harmful products [2]. Such a consumer is willing to "punish companies" that do not apply at least the minimum standards for ecological and ethical behavior [12]. The choices of responsible social consumers have become part of lifestyle [5].

One of the areas of social responsibility of the consumer is environmental responsibility for the acquisition of goods and services that have a real impact on the environment and promote business, aiming at contribute to positive social change. Because of the anxiety environmentally responsible consumer feels responsible for the environment to preserve it for future generations and translates environmental issues on the consumption decisions [8]. Many authors take the discussion on the characteristics of the green consumer [1, 4, 10, 16]. Green consumerism is definied as a phenomenon connected with avoidance of products that are dangerous to the health of the consumer and the environment and which cause significant damage to the environment during production, usage and at the post-consumer stage, and also consume a disproportionate amount of resources and contribute to unnecessary waste by highly sophisticated packaging, an excess of features or short shelf life. They use materials that are dangerous to humans and the environment and require cruelty to animals [3]. To keep this state of affairs requires to ensure high social and environmental awareness of buyers associated with full awareness of the consequences of decisions made both for all participants in the communities in which they live, as well as for the ecological future of the environment.

The eco-friendly consumer shows a positive attitude to all environmental aspects, recycling, paying higher prices, and reflects the high level of criticism to promotional practices. It is the consumer at the age of 25-34 and 45-54, educated, highly qualified, with higher incomes [15]. The green consumers buy eco-friendly products, not because of fashion, but of interest and concern about ecological issues. They are motivated to buy organic product even if it has lower quality and higher price compared to alternative products. This group of consumers is making every effort to look for products that favor the environment [10]. Many studies show that younger people are more sensitive to environmental issues [10, 15]. Empirical studies show that women are more sensitive to environmental issues [7, 15]. Women care more about the environmental attributes [11]. Children have greater knowledge about the environment than their parents [18]. Consumers with higher levels of education are more aware of environmental problems and consequently more concerned about the quality of the environment and show greater motivation for responsible behavior [4]. Consumers who have higher than average purchasing power are sensitive to environmental issues compared to those with average or low income. They show a greater willingness to pay higher prices for organic products [1].

Residents of large agglomerations are ready to sacrifice their time to participate in ecological activities, but they believe that the money for environmental protection should come from the government [17]. The determinants of green consumer behavior include: environmental purchasing behavior, environmental activism, environmental knowledge, environmental concerns, assessing the effectiveness of individual actions, efficiency measures, economic factor, skepticism to pro-environmental declarations and claims [16]. Other researchers point out to buy organic products because of altruism.It is believed that altruism is one of the most common psychographic criteria of ecological behavior of consumers [10].

RESEARCH METHODS

To implement the objective an ethnographic approach was employed. The findings were gathered as a result of in-depth and holistic knowledge of the selected respondents and their environment in which they were, as well as the conditions and the context, which allowed to explain their attitudes and behavior towards understanding environmental and ecological products. This method allowed to obtain in-depth statements of the respondents and to detect inconsistencies arising from discrepancies between the statements and the actual behavior of consumers. A deep understanding of the studied phenomena is possible by interpreting their understanding of their participants.

Ethnographic approach, which belongs to one of the two main strands of research, and was called interpretative, enabled through an observation, an interview and informal interactions to examine the value and conditions, green attitudes and behaviors, which are the subject of this study. Two research methods were applied: participant observation and in-depth personal interview. The study was conducted among 17 consumers who were diversified because of their age, financial situation, education, family life cycle stage, the social origin and area of residence.

The active participation observation was to explore the habits of consumers both at home (waste, cleaning, way of management of energy, gas, water, detergents, etc.) and while shopping. In each case they 2 visit were held, from 3 to 5 hours. The research was conducted from May 2015 to Oktober 2015. The script interview was prepared and for each test the time frame was specified. The following topics were discussed: system of values and ecology, the degree of concern about the environment, behavior towards natural resources like gas, electricity, water, motives to buy organic products, the perception of organic products and consumer organic sources of information, buying behavior and the barriers to purchasing organic products. During the interview, projective techniques were used. A pilot study was conducted among 2 consumers, which allowed to improve the research process.

RESULTS

The survey showed consumer awareness regarding the reduction of consumption in order to improve the quality of life for future generations, and responsibility for purchases of products that do not harm the environment and society, but at a low level. Among the key life values respondents indicated: health, family, and well-being and work. The respondents were concerned about the environment. Climate change and waste were most often cited as threats to the environment. As for the reasons why one should care about the environment the participants cited most frequently "health, keeping clean environment for children and grandchildren, survival of the human species and animals". Dirty environment was associate with "discomfort, disgust, stress, junk, malaise, smog, disease". In turn, clean environment was associated with "relaxation, rest, well-being, happiness, idyllic life, childhood, pleasure, something good and beautiful". The respondents assigned the following features to ecological consumers: "frugal, modern, smart, healthy, respect nature and people, but also lavish, they allow to pull the wool over their eyes". In contrast, non-green consumers were described as: "poor, operative, do themselves harm, ignorant, uneducated, backward, traditional, forced, frugal, do as they manage". Ecological product has received the following features: "ethical, high quality, exclusive, non-GMO, protects the environment, tasty, healthy, fragrant, smaller than the usual fruit, protects our health, cares about other people, not used for the production for children, specially marked and certified (only 2 people have mentioned this feature), recycling, inaccessible, expensive". In turn, the non-green product, "tasty as we knows how to prepare it, not always healthy, for a logical price, easy to buy, you can buy at a reasonable price".

Studies have shown that consumers pointed at the various motives of purchasing of organic products: "health, environmental protection, safety, small children, their own values, personality, allergies, vegetarianism, lifestyle, economy, care for the environment, a philosophy of life." Consumers perceive the purchase of environmentally friendly products as ethical and according to values, but they not always decide for them. When asked why they do not buy, they replied that "they are too expensive, cannot afford them, do not see a need, it's just slogans, they have no time to play in the ecology, do not trust the companies, it is important and for sure finally they will start buying." When asked whether other people actually would decide to purchase organic products if they had lower prices than at present, they responded that "rather yes", but there were answers, "not really, because everyone has their own customs and traditions of cooking; I would need to devote time to find such products; I do not know; to get to the ecological store is another costs and therefore the price is higher, there is not much difference between organic products and conventional ones from the store, organic fruit are less ripe."

Most respondents expressed a skeptical attitude towards environment-friendly business practices. The following statements were reported: "for companies only profit matters, the environment and the people have no meaning for them; they create heaps of waste; even they propose some actions they are just to get the client; environment – it is just a slogan. Only two people have noted the efforts of companies, "big companies have developed CSR and help protect the environment; companies need to protect the environment because the law requires them to take actions." Respondents held the government and politicians responsible for environmental issues. They see the positive changes in their behavior "I did not sort the waste now I'm doing it; I take my own shopping bag; at home I have energy efficient light bulbs; I know some eco-labels; My neighbor has solar collectors; I buy recycled toilet paper, but the wife is prejudiced against it; My child often says what the teacher said about the environment at school".

They are not interested in environmental organizations and their activities. They do not participate in protests, boycotts of companies. The surveyed consumers derive information from television and the Internet, as well as from the closest environment (family, children, friends). They exchanged Facebook and blogs. When asked about the level of knowledge, they replied that they consider themselves well informed about environmental issues and green products. According to the participants a way to increase green purchasing is the "education since childhood; more information in the media; more affordable prices for organic products; the way of education; better wages; better information about the way of production and the consequences for the environment, good designation, rich information at the shelf, promotion."

The respondents who underwent the observation showed at home, on the one hand pro-environmental behavior, as segregation of garbage, energy saving, water usage for reasons mostly economic, but on the other hand they used non-organic detergents and disposable products, e.g. utensils, diapers, paper towels (except 2 consumers where the child and the tested person were allergic). They took their shopping bags, but if in the store bags were available for free they used them. When shopping, they checked the information on the packaging and drew attention to the type of packaging, considering that plastic, paper and glass are environmentally friendly. If they had the choice of product in the plastic or glass packaging they chose plastic one because they thought that it was lighter and could be segregated.

CONCLUSION

In the Polish market, environmental responsibility and behaviors of green consumers are at low level, although the Polish research shows that the situation in the last decade has improved significantly. By analyzing consumer behavior a theological conflict between the ecological values and the values that are widely recognized can be noticed. The basic causes of the conflict include the following:

• lack of knowledge or intuitive knowledge about environmental risks and their consequences;

• transfer of environmental responsibility to other entities, e.g. the state, local governments, businesses, etc.;

• perception of the individual contribution to environmental protection as marginal and dependence of own conduct in relation to the environment on the behavior of other consumers;

• contradictions in motives of consumer behavior (ecological vs. economic motivation, ecological and usable motivation, ecological and aesthetic motivation);

• focus on the acquisition of goods, aesthetics, comfort, functionality, pleasure, improved standard of living.

This situation requires further actions related to the provision of reliable information to the consumer and ensuring good access to it and starting the legal and economic instruments. The education and mass media communication have an important role to play.

It is important to make consumers aware of the environmental risks resulting from misuse of their actions and also the creation of a system of incentives and economic incentives, e.g. the possibility of paid return packaging and a reduction in waste disposal costs that will encourage environmentally friendly behavior both in the purchasing process as well as during post-consumer phase. However, high levels of ecological knowledge is not able to induce changes in emotional attitudes to environmental problems. In future work the studies related to the precise identification of conditions that must be met in order consumers behave in a friendly way for environment should be undertaken. The detailed explanation of barriers of environmentally friendly consumer behavior. There is also no guarantee that increased of the ecological awareness will impact in a direct way on the changes in the model of needs and consumptions. State intervention in the form of legal regulations is necessary. It is accepted more easily, the higher the environmental awareness is. Low level of consumer social responsibility makes it difficult to implement CSR and marketing programs socially and environmentally involved.

These studies are important for managers because they provide an opportunity to obtain information about consumer behavior in the market, their conditions and mechanisms, and are an important aid in the segmentation of the market, providing a wealth of information and creating a foundation in groups of needs and products.

The adoption of a strategy for sustainable development in the EU creates conditions for the development of behaviors aimed at protecting the environment. They must, however, be a cultural change in not only production but also satisfaction of the needs, allowing in the effect for the implementation of sustainable production and consumption.

Shaping the ecological behavior of consumers is a long-term process that requires the involvement of many actors and resources, but which certainly the entire society will benefit from.

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MARITIME PIRACY: THE ROLE OF THE PHILIPPINE GOVERNMENT IN ANALYZING THE PSYCHO-SOCIAL WELL-BEING OF THE FILIPINO SEAFARERS

Joanna Therese B. Orola

Graduate Student, Department of Political Science, College of Liberal Arts
De La Salle University, Manila, Philippines, E-mail: joannaorola@gmail.com

ABSTRACT

Abstract - The Philippine dimension on the welfare and protection provides a purview on how the government plays its role in aiming to provide efficient programs and policies for the psycho-social well-being of the Filipino seafarers who have experienced Maritime Piracy. As a Research in Progress, the central questions will be dealing with the discussion on how the Philippine government's role in providing measures to safeguard the Filipino seafarers who have been affected by Maritime Piracy. This aims to answer the following questions: the efforts being done by the Philippine government programs and policies on the psycho-social well-being of the Filipino seafarers; the challenges of the Philippine government in catering an effective implementation of the psycho-social well-being programs and policies to the affected Filipino seafarers; And the Philippine government efforts in line with the international standards and policies in addressing Maritime Piracy. The data sources have been limited due to the inability of collecting data from other government offices and agencies that are responsible for the data on the psycho-social support rendered for the Filipino seafarers. The study will simultaneously be guided by the framework of the psycho-social well-being of the Filipino seafarers that will serve as a mechanism to analyze the relationships of the Philippine government, alongside the contributions of the international community, and the ship-owners and manning agencies in addressing the psycho-social well-being of the Filipino seafarers. One of the findings that has been identified is the large percentage of Filipino seafarers who have been exposed to the impacts of Maritime Piracy. Due to this, there is a dire need to equip and strengthen the Philippine programs, and policies on the psycho-social well-being of the affected seafarers.

Keywords: Filipino Seafarers, Maritime Piracy, Psycho-social Well-Being

INTRODUCTION

The Philippines is one of the states that has a special interest on maritime transport and navigation. Bearing in mind that there are thirty-five percent of Filipino seafarers around the globe, they are the group most adversely exposed to implications such as Maritime Piracy. From 2006 to 2012, there were 657 Filipino seafarers boarded in 54 vessels who became victims of piracy, and in March 2009, 11 vessels were hijacked with 110 Filipinos and other nationals. As stated from the report on Policy and Program of the Philippine Government on Piracy- Related Issues, the initiatives by the international community and the governments, with its implementation of Flag States, Port States, and Labor Supplying States, the reports and incidents of Maritime Piracy have decreased from 2010-2012.

Despite the counter measures being done by the respective governments, its local agencies, shipping companies, as accorded by the international standards, there is still no assurance that ships in high risk areas will not be subjected to any kinds of piracy attacks. Unfortunate occurrence can happen anytime in the international waters of Somalia, Western Indian Ocean, the Gulf of Guinea, the South China Sea and elsewhere.

Maritime Piracy is the act of executing illegal acts on high seas, against ships, most especially by the extraction of cargo, pulling out of crude carrier into their possession together with a hostage scenario anything in exchange of an essential shipping equipment and money (Haywood & Spivak, 2012). Throughout history, the dilemma imposes a great threat to the seafarers and the international shipping industry because of the implications that could lead to traumatizing experiences.
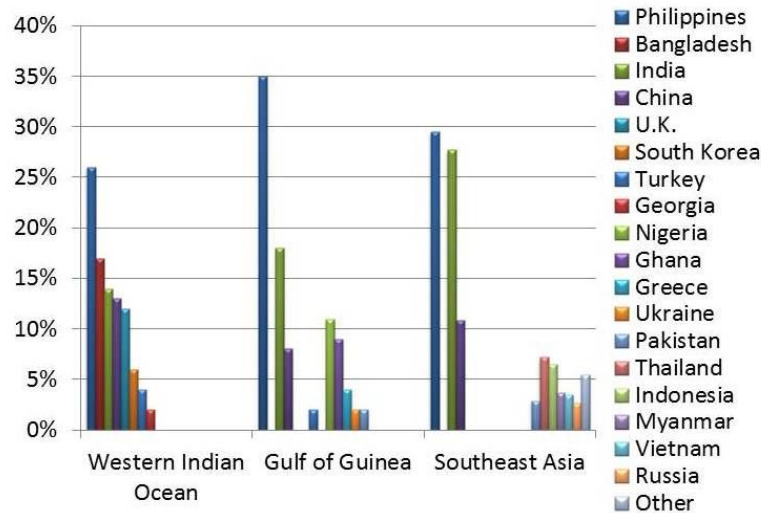
Figure 1
Nationalities of International Seafarers Involved in Piracy Attacks in 2014
Retrieved from: The State of Maritime Piracy 2014. Executive Summary of Ocean Beyond Piracy.

Considering the large percentage of Filipino seafarers and other nationalities who have experienced, witnessed, or worried about Maritime Piracy, the unexplainable fear will continuously threaten them rooting from the possible scenarios that have been done while on-board: Being hijacked and detained for months, hostage-taking, facing anxiety from the possibility of getting killed or injured, experiencing physical and psychological abuse, and coping with the long-term impacts of Post-Traumatic Stress Disorder (PTSD) and Depression for a life time and giving worry and so much pressure to the families, these are all the problems that are being challenged on the seafarers who have experienced Maritime Piracy.

What this study seeks to analyze is the efficiency of programs and policies of the Philippine government to the Filipino seafarers who have been subjected to piracy attacks, as well as the efforts and initiatives of the international community in dealing with post-traumatic situations. The main question will lead to the discussion on how the Philippine government's role in providing measures to safeguard the Filipino seafarers who have been affected by Maritime Piracy. This paper aims to answer a few questions and concerns in the following areas: Firstly, the efforts being done by the Philippine government programs and policies on the psycho-social well-being of the Filipino seafarers. Secondly, the challenges of the Philippine government in catering an effective implementation of the psycho-social well-being programs and policies to the affected Filipino seafarers will be addressed. And thirdly, the Philippine government efforts in line with the international standards and policies in addressing Maritime Piracy will also be highlighted.

LITERATURE AND FRAMEWORK

The collaboration of researches, the insights, perspectives, and studies by the authors have been organized and examined in order to discuss the nature of Maritime Piracy and its impact on seafarers. As the psycho-social well-being factors will be discussed in this part of the study, a certain framework will be provided in order to better understand the relationships of the government, the international community, and the ship-owners and manning agencies involved. Moreover, the challenges of the Philippine government's programs and policies for the Filipino seafarers who have been subjected to piracy attacks will be analyzed in the latter parts of the study.

The Nature of Maritime Piracy

According to the Best Management Practices for Protection against Somalia (BMP4, 2011), piracy has been defined as "acts of violence against ships, crew, and cargo". This includes Armed Robbery, "the attempt to

take over by navigating a ship, hijacking the cargo, and crew on-board in exchange for ransom". Modern Piracy serves as the "predatory maritime activities" brought about by criminals or pirates who threaten the sovereignty or legal authority exercised within the territorial waters of the state (Haywood & Spivak, 2012). With this, the predicament attributed by Maritime Piracy, is that it affects the shipping businesses and ship-owners greatly because the primary aim of these pirates nowadays is through vessel captivity and hostage-taking of the crew in exchange of ransom demands (Lansing & Petersen, 2011). The impacts of Maritime Piracy continuous to agitate not just the international shipping industry through the loss of a vessel's equipment and cash, but the immense physical and psychological violence that affect the well-being of seafarers.

The Well-Being of the Filipino Seafarers

Productivity, happiness, and wellness that a person can achieve in his/ her career are the aspects in which the well-being of a person is composed of. In the context of Filipino seafarers, a lot of factors can contribute or affect people's personalities, and behaviors. One of these aspects is the long-term effect being brought about by Maritime Piracy. The "Life at Sea serves as a highly repetitive and deprived universe, which demands the use of certain coping strategies in order to make daily life appear meaningful for the seafarers" (Lamvik, 2002). In this regard, Filipino seafarers play imperative roles in the society which connotes the increase of protection and welfare.

Studies conducted by the Philippine government through its agencies, and the collaboration of the Japanese government have identified the human cost of piracy (In their Own Words, 2012). This leads now to the classification of psycho-social factors in the following areas:

First, the Emotional Reactions and Effects pertain to the fear that will affect the seafarer's emotional reactions due to near death experiences. The encounter with weapons that would be pointed or fired at the seafarers, the tendency for nervous breakdowns, the long-term trauma, and failure negotiations between the ship-owners and pirates can cause paranoia, and stress to seafarers.

Second, the Cognitive Reactions and Effects refer to feelings and hopelessness towards seafarers who have been victims of any problems on-board. This stage makes the seafarers the inability to unveil any details of the experiences to their family members.

Third, the Socio-behavioral Reactions and Effects pertain to the psychological factors that have affected the way of thinking and behavior of the seafarers. This also attributes from the fourth aspect which is the Physical Reactions and Effects, the cause of nervousness, anxiety attacks, and having tensed muscles. The fifth aspect pertains to Spiritual Reactions and Effects, the feeling of no guidance from a supreme being (In their Own Words, 2012). With the implications of the psycho-social factors being addressed, this study will also look at the perspectives and impacts of how the Philippine government functions in its role to secure the welfare and protection of the Filipino seafarers.

Philippine Dimension on the Well-being of the Seafarers

According to the National Security Policy (2011-2016) on Securing the Gains of Democracy, the influx of the Overseas Filipino Workers (OFWs) has always been predominant among the areas of the world mainly in the North America, Middle East, Asia Pacific, Europe, and Africa. Hence, the third pillar of the Philippine Foreign Policy, the Protection and Welfare of the OFWs which lie on the aspects of "(1) Security of Filipino Migrants and OFWs amidst rising political turmoil, social unrest, and disasters, affecting countries of their destinations".

In supporting the provisions on the welfare of the OFWs, Abila & Tang (2014) emphasized the importance of the Civil Code of the Philippines; its core responsibility is to oversee that the duties should be performed by the employers to their employees. Together with the specialized agency, the Philippine Overseas Employment Administration (POEA), its obligations is to ensure that the duties and responsibilities both the seafarers and employers have their claims and benefits which require every manning agency to use its Standard Employment Contract (SEC). The SEC covers the compensation and the legal framework that covers physical injuries and illnesses, excluding the health issues on PTSD and depression.

As the seafarers are most likely to be vulnerable to any physical attack, robbery, torture, kidnapping, incarceration , sexual assault, physical and psychological abuse from the pirates the risks of attaining

development and productivity in the work place is hindered (Abila & Tang, 2014). The difficulties of dealing with the long-term impact rooted from Maritime Piracy do not just end in that aspect. But, one of the main challenges is the role of every government to take actions in certain situations.

Another concern that should be addressed is the suppressing issue that will be impossible for such guidelines and frameworks to be achieved most especially to countries and governance where poverty is predominant (Haywood & Spivak, 2012). Lack of prioritization, inability to implement regulatory frameworks and effective laws are the dilemmas being faced by the Philippine government (Abila & Tang, 2014)

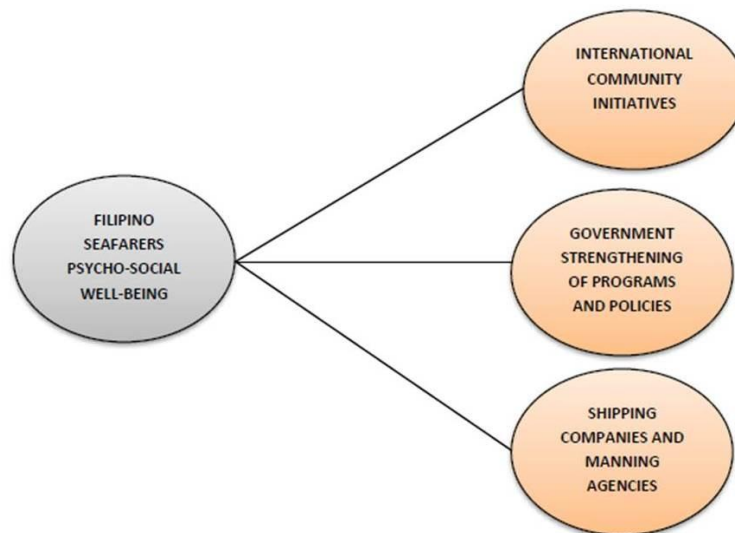Figure 2 Theoretical Framework for the Well-Being of the Filipino Seafarers

Figure 2 Theoretical Framework for the Well-Being of the Filipino Seafarers

The relationships of the Filipino seafarers, in connection with the roles of the Philippine government, the International Community, and the ship-owners and manning agencies, and its efforts and initiatives are highlighted in order to serve as a foundation in understanding their specific roles in addressing the implications of Psycho-social Well-being factors affected by Maritime Piracy. This framework will be used in the next section of this study to analyze the contributions and impacts done by these factors, most specifically the Philippine government towards the Filipino seafarers who have been victims of physical and psychological trauma.

DISCUSSION

1.1 Overview of the Framework

The Philippine government expresses its concerns regarding the issues on Maritime Piracy and is abiding with international standards in the shipping industry. But as guided by the theoretical framework, the study shows that there are a lot of contributions being done by the international community that have helped to prevent the issues of piratical incidents to persist. The Philippine government is still facing a lot of challenges in the aspects of implementing a systematic mechanism to cater to the seafarers subjected to psychological problems. In this regard, the framework shows that the role of the Philippine government has the need to prioritize and strengthen the policies and programs in order to provide plausible long-term approaches in answering the problems of psycho-social well-being of the Filipino seafarers.

1.2 The Roles of the International Community, Shipping Companies, and the Government

On the other hand, the international community, the Philippine government, and the ship-owners together with the manning agencies should be working hand-in hand in order to support and provide assistance for the well-being of the Filipino seafarers. The study analyzes some overlapping views among the international community efforts and initiatives, most specifically with the Maritime Piracy Humanitarian Response Programme's (MPHRP). The humanitarian non- government organization aims to cater services to the piracy

survivors, and their families. However, It cannot be understated that the Philippine government, most especially the ship-owners and manning agencies have different systems and mechanisms that address the need for piracy survivors.

The challenge that can be perceived is the different view being perceived by the ship-owners to fully support the organization that has been creating an effective atmosphere in the international shipping industry. Also, it is the sole responsibility of the government to ascertain that the Filipino seafarers would be protected under their laws and policies, and most specifically the ship-owners to do the negotiation processes. In this context, the role of MPHRP represents the guidelines on what the ship-owners and manning agents should do through their Good Practice Guide for Shipping Companies and Manning Agents for the Humanitarian Support of Seafarers and their Families established in 2011. And as part of the responsibility of the Philippine government, it has recognized the presence of the importance of the organization to be able to utilize its role in the maritime industry.

Being guided by the framework, the Filipino seafarers' well-being serves as the main focus of this study; the roles of these factors involved in the framework should be entangled, hence, not overlapping each other.

METHODS

The primary data sources are gathered utilizing the interview method with the government local agencies such as the Maritime Industry Authority (MARINA), the Philippine Coast Guard (PCG), and the Non-Government Organization, the Maritime Piracy Humanitarian Response Programme (MPHRP). Such information have been provided using the document analysis method to analyze the public records, visual materials, and reports on Maritime Piracy attacks and impacts, humanitarian efforts for the Filipino seafarers, and the advisories covering Philippine-registered ships transiting the High Risk Areas.

The other data for this study are derived from secondary sources such as scholarly journals, academic articles, books, various literature reviews, and reports. The materials have been used in order to explain the nature of Maritime Piracy, classify the roles of the Philippine government in addressing the challenges of the programs and policies in line with the Psycho-social well-being towards Filipino seafarers.

As a Research in Progress, one of the limitations of this study is to gather relevant data and still aiming to collect data from the other Philippine government offices and agencies responsible in determining the factors and issues on the psycho-social well-being and the measures that have been done to the affected Filipino seafarers. The second challenge in this study may be perceived in line with the privacy of sharing of confidential records within the respective government offices and local agencies; And lastly, the study limits itself to the data that could be gathered from the shipping companies and manning agencies, as the study focuses on the measures being considered by the Philippine government to the Filipino seafarers who have been subjected to Maritime Piracy.

RESULTS

A.   Overview

Seeing what the nationalities/ crew had experienced the degrees of psychological distress, mental torture cannot be quantified. In the Western Indian Ocean, various piracy attack cases by Somali pirates executed hijacking, hostage-taking cases in 2014. One of the cases cited was the Fishing Vessel Naham 3 which involved the nationalities from China, the Philippines, Indonesia, Taiwan, Vietnam, and Cambodia and was held in captive in 2012.

In the Gulf of Guinea, the study has classified that there were numerous attacks, successful boarding, together with failed attempts, and suspicious approaches on the same year. The analysis gathered from the Oceans Beyond Piracy (OBP) has been used to identify the long-term impact of piracy in the region wherein it indicates that 16.67% of seafarers were exposed and subjected to long-term PTSD. Having 1,168 seafarers identified that have been exposed on the same year, there may be 194 victims have been experiencing it in 2015.

In Southeast Asia, the study has found out that 16.7% signifies that 610 seafarers were experiencing PTSD or depression symptoms as attacked by pirates. The dramatic increase of piracy attacks in the Southeast Asia has been addressed as to how the effects towards the seafarers will be taken into consideration.

Overall, the findings and data of the study sum up on how the exposed seafarers are vulnerable to the symptoms of PTSD and depression. Whether the classification entails when the ships transit the high risk area, when attacks were not executed leading to with or without exposure, when the seafarers were not attacked and held as hostages, and when seafarers are being held as hostages, these factors can highly lead to problems of PTSD and depression. Hence, the reactions of the seafarers' well-being rely on degree of the pirates' actions. It is the long-term impact that can be a detrimental situation for the seafarers and their families to be left experiencing.

B. 1.1.2 The International Community Initiatives

The formulation of the BMP4 provides the Ship Protection Measures for ship-owners, and vessels through the registration of the vessel movement before entering the high risk area to the Maritime Security Centre-Horn of Africa (MSCHOA), and provision of reports to United Kingdom Marine Trade Operations (UKMTO). The organizations that have been signified indicate that a lot of initiatives have been taken into account in aligning with Maritime Security and Protection among the vessels, ship-owners, and manning agencies. However, the study focuses on the psycho-social well-being where there should be psychological preparedness for seafarers before deploying them in accordance with the BMP4.

Bearing in mind that there are a lot of measures in addressing the processes of prior to and during captivity or attacks, prioritization of psychological services by international seafarer organizations should be provided. As most of the international seafarers captured by Somali pirates, that likely to have been subjected to psychological abuse, and stress disorder, the main issue in this context is the inability to cater and treat the affected survivors.

Moreover, the international community has been working hand-in-hand in order to facilitate such organizations to address and provide support most especially the affected seafarers and families. One of which is the assistance of the MPHRP that has been imperative in raising awareness about the survivors of piracy, giving assistance to the affected seafarers and families, and fostering aid and rehabilitation programs for the affected seafarers.

The next finding involves the psycho-social well-being aspect of seafarer's piracy attacks. MPHRP takes the roles by providing professional help with its partnership with the University of Santo Tomas psychological clinic in treating the seafarers with PTSD. Approximately, it is about 4-5 % of survivors who have experienced PTSD. But, most of Filipinos who have been exposed to piracy attacks could easily recover. With this, there has been a study in London that after 28 days, the survivors will get back to normal, if proper treatment and care are rendered.

The approach of MPHRP has been useful most especially in the aspects of reintegration and rehabilitation, or the "After Care Home Visit" in making sure that the well-being of the seafarers has not been affected with the long –term trauma, PTSD and depression. In this regard, the organization facilitates medical check-up and treatment to those seafarers who were abused, injured, or tortured. The effectiveness of this organization has brought to helping a lot of Filipino seafarers and families' conditions. However, faced with challenges, the MPHRP will continue its efforts to aim for the common good of the seafarers. The organization's activities are expanded and absorbed into International Seafarers Welfare Assistance Network (ISWAN), the widening of horizons in enhancing relationships within and among industry alliances in restoration of the piracy survivors and rendering assistance to the families.

C. 1.1.2 Government Strengthening of Programs and Policies

The study cites from the statement where The Department of Foreign Affairs continues to participate in the promotion of counter-piracy measures and awareness in deterring the act of piracy against the Filipino seafarers (Manila Times, 2013). Hence, the government is still faced with a lot of challenges in line with the implementation of protection and security, together with providing long-term solutions towards the affected Filipino seafarers.

By aiming to attain the third pillar of Philippine foreign policy, protecting and securing the lives for the betterment of the OFWs, the role of the government is to strengthen the policies and programs on the Psycho-social well-being for the long-term impacts among the Filipino seafarers. For every seafarer that had experienced piracy, there may be symptoms of PTSD and depression that would prevail.

Studies show that there is an inefficiency of regulatory framework for the inability to cater to the seafarers' health and protection in the Philippines (Abila & Tang, 2014). In this regard, the long-term process of succumbing to the negative impacts of piracy can result to a long-term health issue if it is not treated.

Various piracy cases will be indicated as to show how the government responded to the dilemma. One of the cases emphasized was the hijacking of MT Stolt Strength in 2009. With the series of negotiations between the ship-owners and the pirates, this was when the government, through its agency, MARINA had been able to ask for assistance from the neighboring countries to be able to escort the vessel into safety. On the other hand, the absence of POEA, as the national ruling body resulted to the inefficiency to cater a systematized mechanism in the processes of participation, negotiation, and captivity of the seafarers during that time (Pacheco, 2015). Another case was the Fishing Vessel Naham 3. The data presented by OBP in 2012, with Filipino seafarers involved indicated that there was governmental support led by POEA (for seafarers who are entitled to double wages and compensation benefits while transiting the high risk areas) and OWWA (for monetary compensation for death, education, training, repatriation, and reintegration benefits).

Having identified the challenges by the Philippine government, this study has found out that there are aspects that need to be prioritized such as the compensation benefits, and the continuous psycho-social support through de-briefing, counseling, visiting of families, and reintegrating for the well-being of the seafarers. There may have been programs and policies existing, but the responsibilities of each and every government agency/ office should not be neglected.

CONCLUSION AND FUTURE WORK

Studies show that there are various existing policies in line with the Psycho-social support for the Filipino seafarers. With this, the challenges still remain as to how the government will be able to utilize and prioritize the programs in catering an effective system for the seafarers affected by Maritime Piracy. The study indicates that there may have been programs, and compensations that have had been rendered to the victims of piracy attacks throughout history, but the government and its agencies has a dire need to equip the frameworks on the psycho-social support to the victims of piracy.

As the study recommends the continuous psycho-social support, a lot of contributions being done by the international community, together with the efforts of the ship-owners and manning agencies have helped to prevent the issues of piratical incidents to persist. However, the Philippine government should aim to highlight the regulatory frameworks and implement laws on the psycho-social support effectively. This entails the importance of continuous De-Briefing, Counseling, and Physical and Psychological assistance from the respective agencies and health care support for the Filipino seafarers affected by Maritime Piracy.

Being guided by the framework, the international community, the Philippine government, and the ship-owners together with the manning agencies should be working hand-in hand in order to support and provide assistance. In this regard, there will be stronger approach and coordination among these actors in providing the long-term solutions of psycho-social support for the betterment of the Filipino seafarers.

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DEVELOPMENT OF BUSINESS INTELLIGENCE SYSTEM FOR TRAFFIC MANAGEMENT DURING FESTIVAL

Soullam Kim*, Sung Han Lim
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Soullam Kim, ITS engineering, ITS Engineering. Korea University of science and technology
& Korea institute of civil engineering and building technology, Goyang, Gyeonggi, Korea,
E-Mail:soulkim11@gmail.com*

**Sung Han Lim, ITS engineering, ITS Engineering. Korea University of science and technology
& Korea institute of civil engineering and building technology, Goyang, Gyeonggi, Korea,
E-Mail:atdaya@kict.re.kr*

ABSTRACT

Abstract—Festival causes the traffic volume significantly that usually results in traffic congestion as well as traffic accident. Thus, effective traffic management during festival is more than important for traffic operator and festival-goers as well. Despite of such importance, very little study on traffic management during festival has been made. Business Intelligence (BI) system is the data analysis system useful for effective data management and extraction. In this study, Business Intelligence (BI) system for traffic management during festival was developed and is expected to make commitment to relieving traffic congestion as well as reducing traffic accident during festival.

Keywords— festival, business intelligence system, traffic management, intelligent transportation systems (ITS)

INTRODUCTION

Nowadays, more and more people throughout the world visit the festival to enjoy the leisure and cultural activities by seeing and eating. The festival plays important role to enhance the image of the regional society and revitalize the community [1]. For such reason, municipal governments attracts the tourists by offering a variety of regional festivals. However crowded tourists during festivals cause traffic congestion. During Mid-Autumn festival in China, not surprisingly, it took 20 minutes to move a few hundred meters [13]. And terrible traffic jam was caused by popular rock festival in UK [10]. According to investigation, a number of visitors during festivals have increased by 14,000 on average in Korea too [12]. Furthermore, death toll during festivals rose to 50 persons or more [11, 14]. As data shows, traffic management during festival is extremely important but in fact the study on traffic management during festival has yet to be put on track. Traffic management operator or visitors could make effective plan, taking into account of traffic congestion time or route.

But road user or traffic management operator has difficulties in collecting and analyzing the traffic data with regard to festivals by themselves. Business Intelligence(BI) system offers the function to collect and analyze various traffic data and provide them with summarized information they require in a timely manner. Among the systems that provide compiled traffic data is Performance measurement system (PeMS) in California, which however offers real- time traffic information or the data in past without the information regarding festivals [11]. Hence, it's necessary to develop the system that is used for efficient traffic management during festivals.

This study is intended to develop Business Intelligence(BI) focusing on national highway in Korea, thereby making commitment to accomplishing efficient traffic management during festivals. In Section II, review of preceding research is made and in Section III, data collection and traffic characteristics of the region for

study are described. In Section IV, BI system development approach is mentioned and in Section V, system development outcome and In Section VI, conclusion of the study is introduced.

LITERATURE REVIEW

Federal Highway Administration in USA has implemented Archived Data User Service (ADUS) since 1999 which provides the users with history data such as ITS in a bid to improve traffic management and use. Archived data management system (ADMS) is the part of the concept which ADUS contains. ADMS collects, processes and stores ITS data in real time to provide analyzed information for the users [2]. Includes in ADMS are PeMS and Minnesota's traffic management center(TMC), Kentucky's advanced regional traffic interactive management and information system(ARTIMIS) and Louisville-Southern Indiana Traffic Information (TRIMARC)

PeMS provides basic traffic index, travel time by destination and traffic congestion section in the form of map or table [4]. TMC displays traffic status on map through loop detector or CCTV by classifying them into non-congested, delay and congested and emergency situation by weekday and weekend [2]. It also has the function to automatically check the quality of data and notify the operator of any abnormality [2]. ARTIMIS and TRIMAR provide traffic data from detection points in the form of GIS-based map in real time [3]. Korea Expressway Corporation has the operations analysis and supportive information system(OASIS), the traffic history management system, that functions to analyze and extract weather data in addition to traffic data [8].

As seen above, existing systems mostly provide real time traffic data only and has difficulty in identifying the relations with other factors. Even the historic data has the limit in time and space and the users have to do processing to obtain the required information.

DATA COLLECTION

3.1. The site for study and data collection

The festival which is the subject of this study was Boryeong Mud Festival which has been designated as Good Festival by Korean government for 3 years in a row and was the Korea Festival Contents Awards-winner [9, 16]. For such reason, this festival is selected for the study. Surrounding routes of Boryeong Mud Festival are national highway route 21 running south to north and route 36 and 40 running east to west. Traffic detection spot was within the festival site. Fig 1 shows the parts of traffic pattern analysis points.

Traffic data used for the study is permanent traffic counts(PTCs) from national highway agencies. To identify the effect of the festival on traffic before developing BI system, part of the spots is used for 3 years from 2010 till 2012. Analysis of traffic volume variation by time and vehicle type during usual days and festival is made by integrating traffic data and festival data.
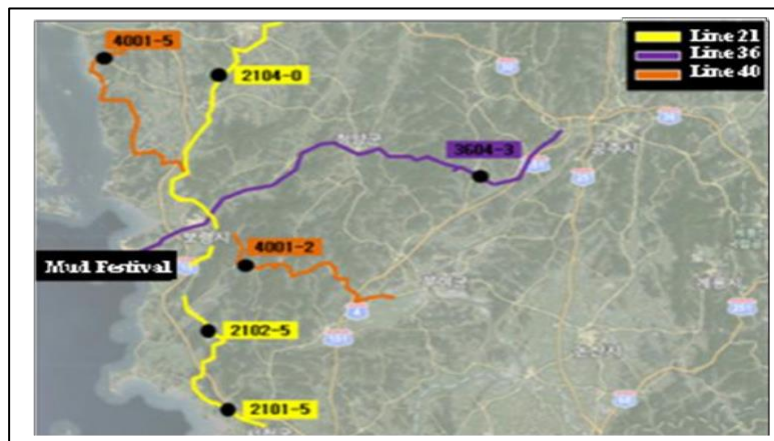

Figure 1 Parts of the spot

3.2. Analysis of traffic pattern by time

The spots for analysis before developing BI system are 6 as shown in Fig 1 which are 3 on route 21 and 1 on route 36 and 2 on route 40. To compare the traffic between festival days and usual days, traffic data immediately before festival is used as the data for usual days.

Comparison of traffic volume for 24 hours is made to identify the peak time by spot, traffic volume variation and distribution. Analysis result is represented in graphic in Fig 2 that explains well the result. Traffic volume is increased during 08:00 till 19:00 than usual days in 2010 and 2011, but the traffic volume during festival appears to be similar with or partly reduced than usual days in 2012.
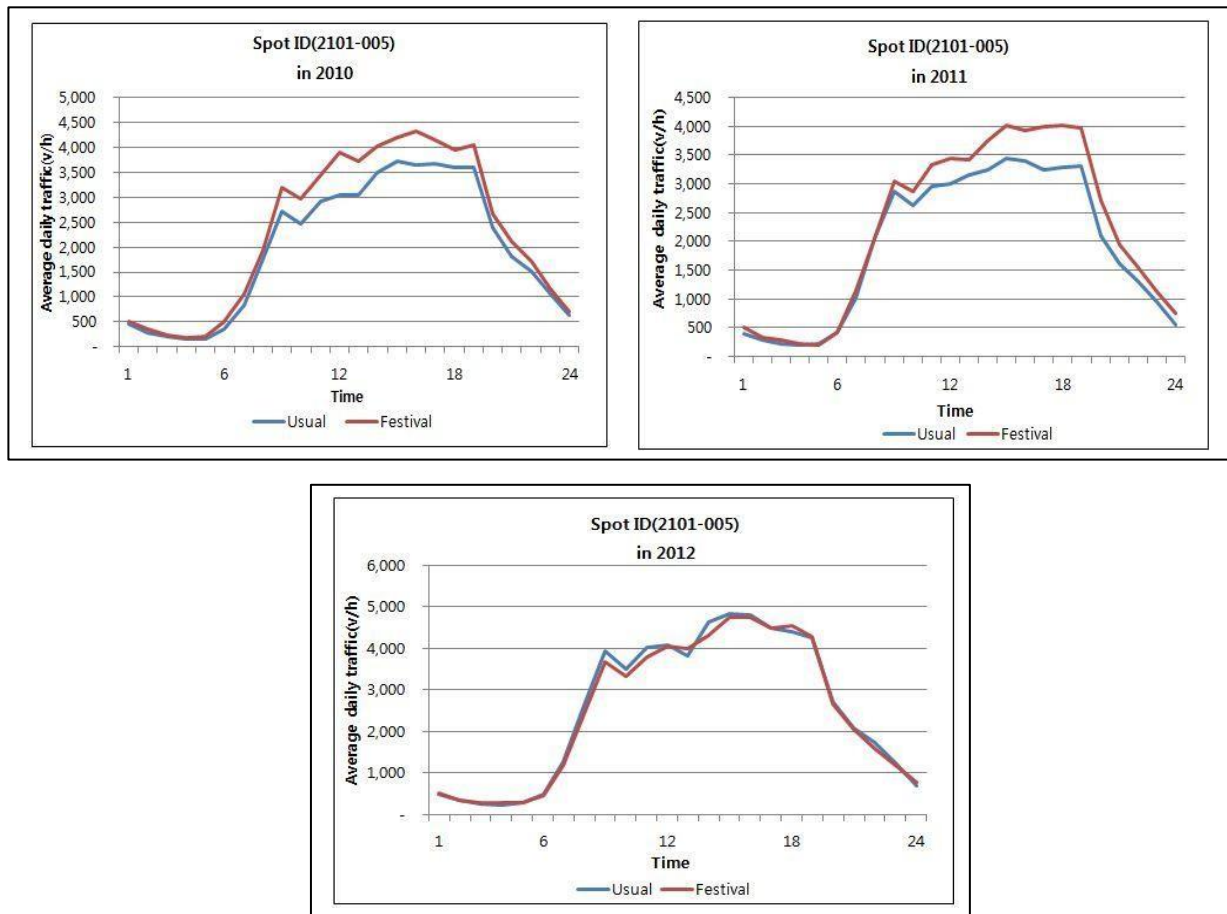

Figure 2 Parts of the Spot

3.3. Analysis of traffic pattern by vehicle type

Analysis of traffic pattern by type of vehicle is made to identify the distribution of vehicle by type and by spot. Type of vehicle is defined based on 12 types used for the traffic volume on national highway with automatic traffic recorders (ATRs). To help better understand the analysis result, the trucks categorized into Class 3 ~ 12, except Class

1 passenger car and Class 2 bus, are classified into cargo vehicle in analyzing variation in traffic volume.

Table 1 shows numerical variation during usual days and festival at spot 4001-002 where variation in traffic volume by type of vehicle is significant. As a result of analysis, passenger cars were increased during festival for all 3 years which indicated increase in festival-goers using passenger cars. When it comes to bus and truck, decrease in traffic was also monitored in certain year but decrease was insignificant.

Table 1 Traffic at 4001-002 by type of vehicle (2010-2012)

Year \ Type	Passenger car (vehicles/day)		
	Usual	*Festival*	*Rate (%)*
2010	3,424	3,714	8.47
2011	4,071	5,157	26.69
2012	3,813	4,089	7.26

Year \ Type	Bus (vehicles/day)		
	Usual	*Festival*	*Rate (%)*
2010	176	198	13.04
2011	161	150	-7.10
2012	144	162	12.47

Year \ Type	Truck (vehicles/day)		
	Usual	*Festival*	*Rate (%)*
2010	228	252	10.65
2011	74	81	9.03
2012	132	125	-4.84

BI SYSTEM DEVELOPMENT

As a result of comparing traffic volume variation by time and type of vehicle, festival proved to have caused increase of traffic volume but it's difficult to identify the relations with the festivals by using current traffic systems. Moreover, policy-makers and drivers prefer to get the information more quickly and in easy way, instead of handling the data by themselves. BI system provides the users with the data after collecting, integrating, processing and analyzing them in visible form for better understanding which is a great help for policy-makers, planners and drivers in making a decision [5, 7]. As shown in Fig 3, BI system is not an independent system but is in need of data warehouse, extraction transformation load(ETL) system and online analytical processing(OLAP) development technologies [8, 12]. BI system provides new information in easy and familiar form using the data accumulated at relevant organizations so as to help the users better understand the information. Thus, BI system is developed in a bid to analyze characteristic information during festivals in accurate and a timely manner by traffic management operator for efficient traffic management support.
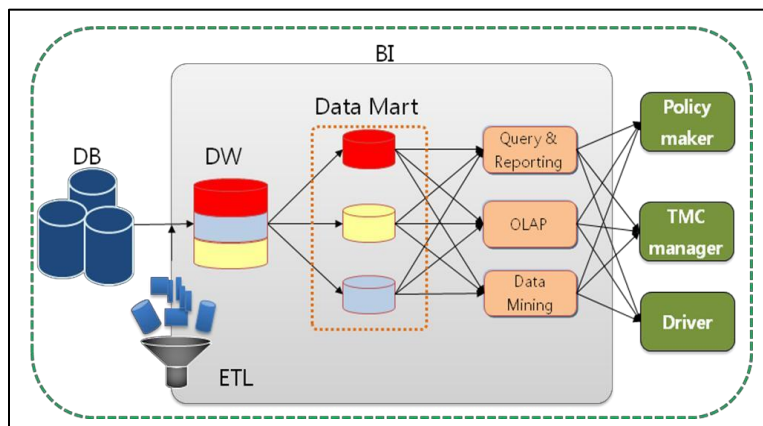

Figure 3 System conceptual diagram

4.1. Configuration of Data warehouse

Data warehouse is the data space which is rearranged to the structure to provide the logical information in required form by collecting the data physically scattered at numerous locations. DW has such characteristics as subject orientation that requires a certain configuration by subject, integration that incorporates different data in consistent form, time-variance that stores the data over time variance and non-volatile characteristic that the data, once stored, is not modified or deleted. The space storing the data after classifying is called data mart (DM) [6].

To analyze the traffic pattern more accurately before development of the system, data accumulated for 5 years during 2009 ~ 2013 is collected. Data integration with traffic data and festival data is made using route number and spot id on festival-related roads. And Data Mart (DM) is developed to search the summary from stored data in a timely manner. Table 1 shows DW of traffic data and festival data and list of DM.

Data integration methods are outlined below.

- Designation of analysis time

- Selection of national highway route around festival

- Extraction of spot numbers available in the region

- Calculation of variation in traffic volume during usual and festival

Table 2 Data warehouse and data mart list

Category	Traffic data	Festival data	
		Festival-related road data	*Festival history data*
List	Loute number	Loute number	Festival start date
	Spot ID	Spot ID	Festival end date
	By time / type of vehicle	Province	Venue
	Direction	City	-

4.2. Implementation of ETL system

ETL system is needed to collect the data scattered at relevant organizations as part of work to structure DW. ETL system extracts the data to integrate traffic data and festival data into DW and as extracted data is still complex and not standardized, code conversion to integrate them is needed and data alignment process is also required as well. That is, ETL system is the process of storing data which is converted to the form which the user requires.

For automatic data collection, minimum connection information shall be provided from raw data-supply organizations. Unless such information is provided, manual data input is inevitable. In case of Boryeong Mud Festival for which data collection system was not provided, information on festival start and end date, festival history information such as festival location and other festival information including the route and spot number shall be input to collect the necessary data.

4.2. Development of online analytic processing(OLAP)

OLAP is used to provide the information after refining and summarizing the large data at DW, which is in contrast to online transaction processing (OLTP) representing existing transaction-focused operation system. While OLTP is data renewal-centered system, OLAP is data search-centered system.

That is, OLAP provides the users with direct access to required information without through mediator such as data processing department. Furthermore, it analyzes the information from various viewpoints and keep analyzing in conversational way till obtaining required analysis outcome.

This study is intended to develop visualization reporting screen using open source, Spago BI to provide the users with summary information on relations between traffic volume and festivals. Spago BI provide the function for users to share on the internet without extra process after installing the system.

A filter function is designed for users to analyze the data such as festival duration and traffic pattern by route and spot. The list includes in order of festival name, year, route number, spot number, up and down, and type of vehicle. And for displaying on screen, traffic variation before and after festival in graphic is displayed to provide traffic pattern information for better understanding. Moreover, table showing the variation in traffic volume on the screen was developed. Traffic volume displayed on the screen is the average of total traffic.

RESULT

Development of BI system enables the users to easily and quickly analyze variation of traffic volume during the festival at certain period. It reduces the time in collecting and processing traffic data and festival data and provides the data in easy and understandable form. A result analyzed variation in traffic volume could be checked by arranging the data through filtering function, Fig. 4 shows the screen displaying using BI system daily average traffic variation of all types of vehicles on all festival-influenced roads. Traffic during usual days and festival was distinguishable in different colors.
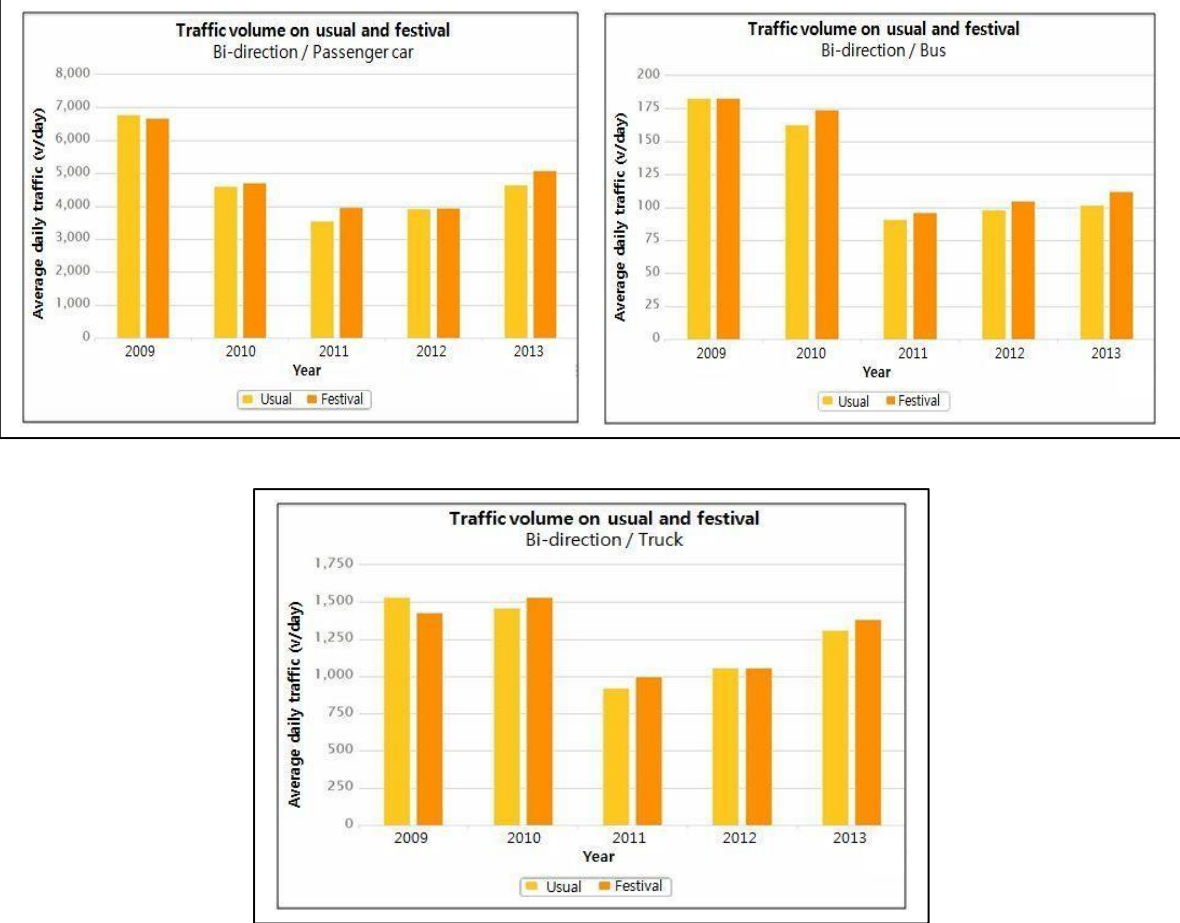

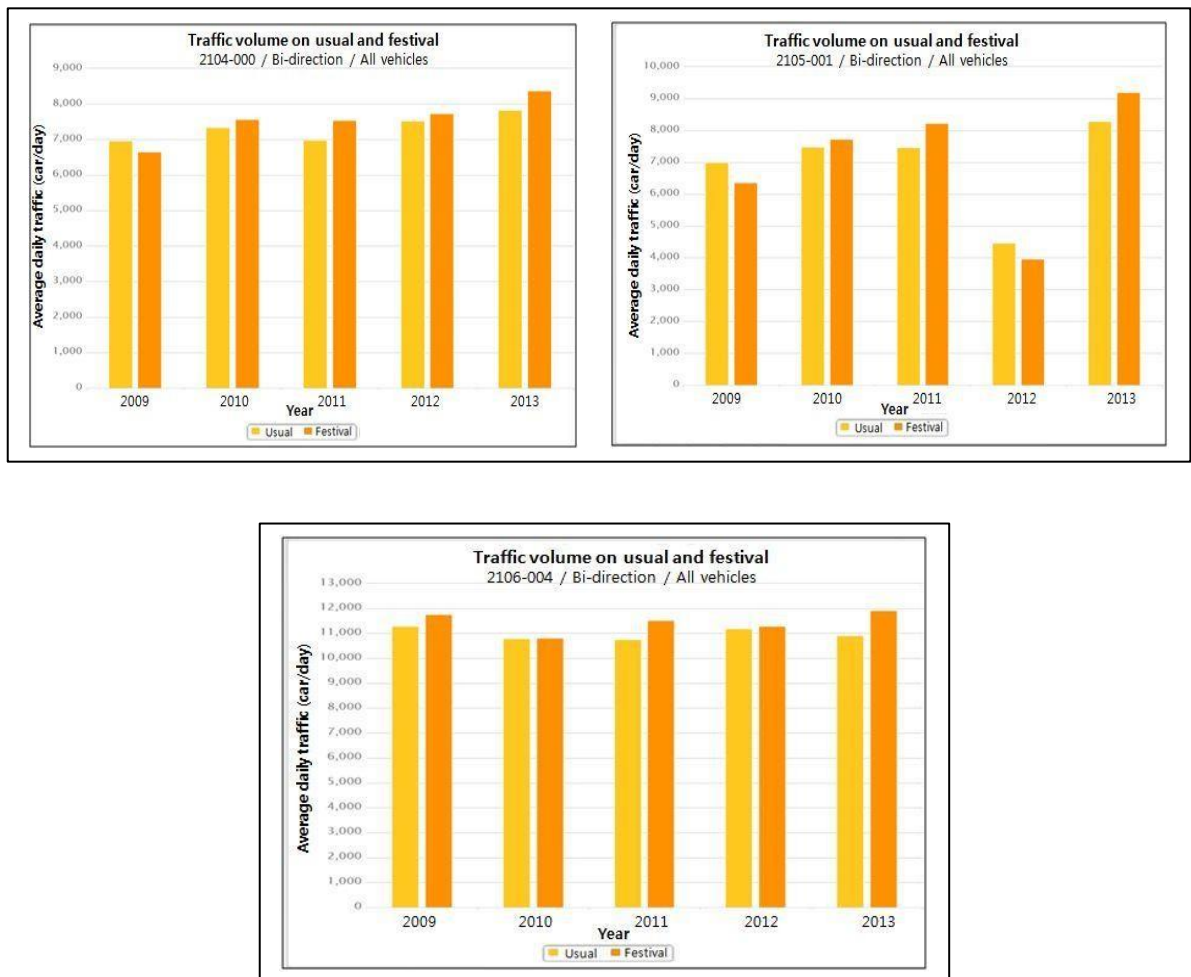Figure 4   Screen displaying total traffic at festival spots

Figure 5 Screen displaying traffic volume in route 21

In addition, traffic volume by route and spot for analysis was displayed. Fig 5 shows variation in traffic volume at certain spots on route 21, indicating different pattern with Fig 4, despite of same festival, which indicated the information from ordinary traffic information system and the information on road which the users require may be different. Thus this system is expected to analyze and provide variation in traffic volume information on road which the users require more quickly and accurately.

CONCLUSION AND RECOMMENDATIONS

In this study, a large scale festival proved to be the factor that causes the increase in traffic volume and traffic congestion on neighboring roads during festival and the difficulties in controlling the traffic flow were recognized. To deal with such challenge, BI system that will provide accurate information in timely manner was developed.

It's intended to develop BI system to provide the traffic management operators or drivers with easy, quick and refined information. Road users including drivers would be able to make a driving plan avoiding congested section and time, taking into account of the information on route and spot which the drivers want to use, type of vehicle, variation in traffic volume on down & up line displayed in graphic and the traffic management operator would be able to develop the policy for bypass to ease the traffic congestion.

This study, however, focuses on traffic volume data only excluding speed without considering meteorological factors. Hence, should the further study continue by incorporating meteorological factors, this system is expected to provide the users with more accurate information when applying to the festivals such as Boryeong Mud Festival.

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CONSEQUENCES OF CLIMATE CHANGE ON THE THERAPEUTIC IMPACY OF INDOOR ILLUMINATION ON HOSPITAL PATIENT: ASSESSMENT FOR AN IMAGINARY IN-PATIENT ROOM LOCATED AT LONDON

Md. Ashikur Rahman Joarder [*] and **Andrew DF Price**[**]

Department of Architecture, Bangladesh University of Engineering and Technology (BUET), Dhaka, Bangladesh[*].
School of Civil and Building Engineering, Loughborough University, UK. [**]

ABSTRACT

Due to a global climate change, individual environmental variables are expected to be changed, for example changes in indoor and outdoor daylight levels are expected in future. The diurnal and annual daylighting performance of a window analysed by computer based daylight simulation programs with historical data, which is a widely accepted research method, is also expected to be different under projected future climate data. The objective of this paper is to identify the difference in indoor daylight level at a particular point (patient retina) inside in-patient rooms due to the use of predicted climate change weather data instead of historical weather data, and its probable impact on the therapeutic needs of hospital patients. Change of daylight levels inside in-patient room is analysed by prospective daylight simulation analysis using a dynamic annual climate based daylight modelling (CBDM) method (i.e. DAYSIM), where the TMY2 weather data provided with ECOTECT

2010 is replaced by climate change data defined by UKCIP02 under different future emissions scenarios for an imaginary hospital in-patient room located in London, UK. The analysis shows that there is a possibility to increase the average indoor room illumination at the location of patient retina by a maximum of 8% in the future (2080-2100) compared to the present (1983-2004). It is also evident that windows, with integrated shading systems with active blind control, are capable to keep the annual dynamic daylight metrics (i.e., DA and UDI>2000) at the location of patient retina nearly constant in case of the increased level of indoor daylight illumination due to climate change, but internal blinds will be needed to shut down more often/time during day hours, which might create a negative impact on patient psychological health due to lack of outdoor view. This paper presents a case of the difficulties/uncertainties of using computer based daylighting simulation programs to achieve the design goal based on historical data and, also highlights the necessity for the consideration of future climate data while do daylighting simulation analysis.

Keywords: climate change, hospital patient, daylight, in-patient room, indoor illumination, therapeutic impact, CBDM simulation.

*Address for correspondence:
Corresponding Author:
~~Md. Ashikur Rahman Joarder, Dept. of Architecture~~
Bangladesh University of Engineering and Technology (BUET), Dhaka, Bangladesh . Tel.: + 88-02-9665633; fax: + 88-02-8613046. E-mail address: ashikj2000@gmail.com

INTRODUCTION

Assessment of existing buildings shows that many buildings are at the risk of being uninhabitable in the future without additional protection in building service design. This can be expected to have significant impact on the building industry; therefore, refurbishment might be necessary for the existing buildings to meet the challenge of the climate change. During new construction, additional consideration should be taken, so that the design must satisfy the demand to cope with the climate change. In this regard, computer based building simulation method could be a useful tool to assess and conceptualise the performance of present and future constructions.
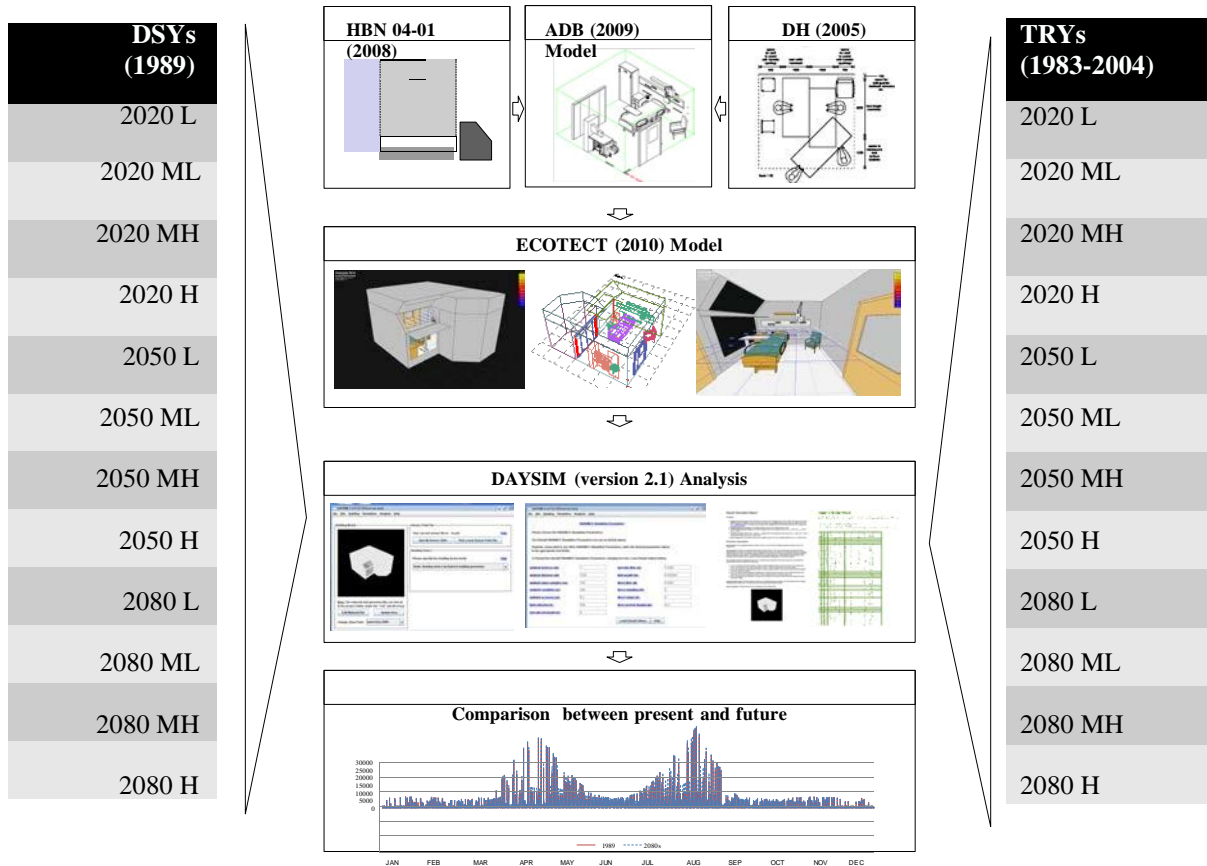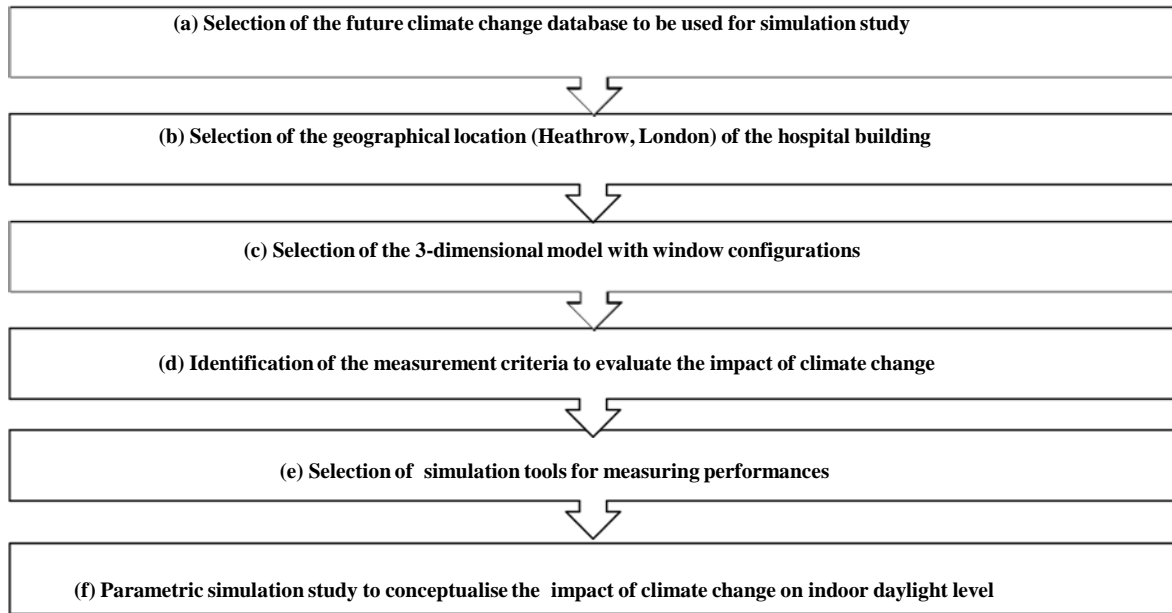
Rapid climate change, which is mainly associated with greenhouse gas (GHG) emissions, is responsible for many dangerous regional and global environmental events. Climate change has the potential to decrease cloud cover (HPA, 2002) and change in sunshine duration. According to United Kingdom Climate projection 2009 (UKCP09), the changes in mean cloud amount during summer can be decreased up to –18% (–33 to – 2%) in some parts of UK (southern) which will result an addition of +16W/m^2 (–2 to +37 W/m^2) in downward shortwave radiation over the 21st century (Jenkins et al., 2009). Similar type of impact is also expected to visible radiation (i.e. daylight). Climate change thus introduces several new issues to the knowledge gap in daylighting research (Joarder and Price, 2009d; 2012a) and daylight design strategies should not only meet the current requirements but also should take accounts of any future changes.

A previous study (Joarder and Price 2012c), shows that the average global radiation can rise by a maximum of 8.3W/m^2 at London (Heathrow), UK, in the future (2080-2100) compared to the present (1983-2004) based on the Chartered Institution of Building Services Engineering, UK (CIBSE, 2008) database. As a result, for the first time, the evaluation of the daylighting performance of a single bed in-patient room under different future emissions scenarios revealed that there is a possibility to increase the average indoor room illumination by a maximum of 5% (average 16.58 lx considering 24 hours, and 33.23 lx considering 12 hours of daylighting from 06:00 AM to 06:00 PM) in the future compared to the present with a difference from -595.54 lx to 579.03 lx. It is important to consider how this large amount of variation will be incorporated in the design of indoor daylighting in the future, because the level of indoor illumination is associated with occupants' health and visual comfort (Joarder et al., 2013, 2009c, 2010; Pechacek et al., 2008). This study aim to contribute further to this literature by examining the impact of this increased indoor daylight level relevant to the therapeutic needs of hospital patients, and to discuss few strategies to incorporate the changing level of daylight in future.

To make an object visible, light is needed to fall on the object first and then needed to be reflected towards the eyes. On the other hand, to satisfy therapeutic needs, higher intensity of daylight is needed to be incident directly on individual retinas to start biological stimulation inside human body (Lockley et al., 2006) which regulates different functions, such as maintenance of sleep and circadian rhythm (Pechacek et al., 2008); reduction of pain and appetite; and improvement of feelings and emotions (Joarder et al., 2009c). Therefore, the amount of daylight incident on patient retina is an important factor to evaluate the therapeutic potentiality of indoor daylighting of in-patient rooms. As patients are assumed to be largely stationary in a hospital room, it allows the consideration and evaluation of daylight intensity in one location (Pechacek et al., 2008). To understand the contribution of indoor daylight level on therapeutic gain to the patient, it will be sensible to present a comparison between the current illumination with the future illumination at patient retina that has been considered as test point for simulation analysis in this paper. This paper consists of three major parts. The first part briefly describes the research methodology for simulation analysis. The second part presents the findings of simulation study. The third part highlights few strategies to incorporate the changing level of daylight in future and how this change could be used to enhance the therapeutic benefit of daylit in-patient rooms.

METHODOLOGY

The structure of the research methodology is consists of six steps (Figure 1). The first three steps are concerned about the selection of the climate database, geographical location and 3- dimensional space to be used for simulation study. Next, three steps are concerned about evaluation measurement criteria, tools and parameters of simulation study to conceptualise the impact of climate change on the indoor illumination levels at patient retina (i.e. test point) under the future climate change scenarios. The simulation method followed in this paper was adapted from the simulation methodology to identify the impact of climate change on the average indoor illumination published elsewhere (Joarder and Price 2012c). A brief summary of the adopted methodology has been illustrated in Figure 1, described below.

(a) Selection of the future climate change database to be used for simulation study

(b) Selection of the geographical location (Heathrow, London) of the hospital building

(c) Selection of the 3-dimensional model with window configurations

(d) Identification of the measurement criteria to evaluate the impact of climate change

(e) Selection of simulation tools for measuring performances

(f) Parametric simulation study to conceptualise the impact of climate change on indoor daylight level

DSYs (1989)
2020 L
2020 ML
2020 MH
2020 H
2050 L
2050 ML
2050 MH
2050 H
2080 L
2080 ML
2080 MH
2080 H

HBN 04-01 (2008)

ADB (2009) Model

DH (2005)

ECOTECT (2010) Model

DAYSIM (version 2.1) Analysis

Comparison between present and future

TRYs (1983-2004)
2020 L
2020 ML
2020 MH
2020 H
2050 L
2050 ML
2050 MH
2050 H
2080 L
2080 ML
2080 MH
2080 H

*L: Low; ML: Medium-Low; MH: Medium-High; and H: High.

Figure 1 Flow diagram of prospective simulation study under future climate change scenarios.

2.1 Future climate database, geographical location and case space

For building simulation analysis, time series or time-scales data are required in hourly or more precise levels. Climate change database, modelled by CIBSE (2008), which supports the projections of climate change described by United Kingdom Climate Impacts Programme 2002 (UKCIP02) is used for this research. The UKCIP02 scenarios are based on one of the world most comprehensively validated climate models: Hadley Centre models (Hulme et al., 2002). CIBSE (2008) data were produced at a spatial resolution of 50km and available for 14 UK sites. The current and future CIBSE hourly weather data sets for London are based on the geographical location of Heathrow (latitude = 51.48N, longitude = 0.45W, and altitude = 25m) that is located at 12 nautical miles (22 km/14 mile) west of Central London. For this paper, Heathrow has been selected as the geographical location of hospital building for simulation study.

The 3D in-patient single-bed room, used in the simulation exercise as case space was developed according to the guideline described in Health Building Note 04-01 (2008) published by the Department of Health, UK (Figure 2). The case room has two windows on the south facade with a total 22.3% window-to-floor ratio (Figure 3). Two windows were installed in the same facade (south) of the case room. The first one is a standard viewing window with $2.43m^2$ opening area (1350mm x 1800mm) with sill height at 450mm (HTM 55, 1998). The second one is a 45^0 angled window with $1.8m^2$ opening area (1000mm x 1800mm) placed at a height of 1850mm from finished floor level above the viewing window (Figure 2). The 45^0 angled window was specially developed for hospital in-patient rooms by Joarder (2011; 2012a) which performed better to achieve therapeutic daylight (daylight for health) for patients compared to traditional typical high window configurations. As both daylight and outdoor views are significantly important to accelerate patients' recovery (Joarder et al., 2013; 2010), the widths of both the windows were kept as large as possible (1800mm) after placing the external in-suite (2285mm x 2100mm), to maximise the outdoor views of the patients. The design of the shading for the windows was as it was recommended by Joarder and Price (2012a) for south orientations: 825mm external sunshade; 200mm external 450 angled overhang and 775mm internal light shelf, published elsewhere (Figure 3).
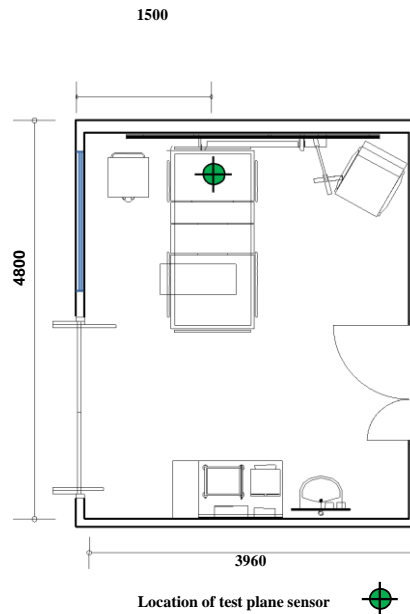
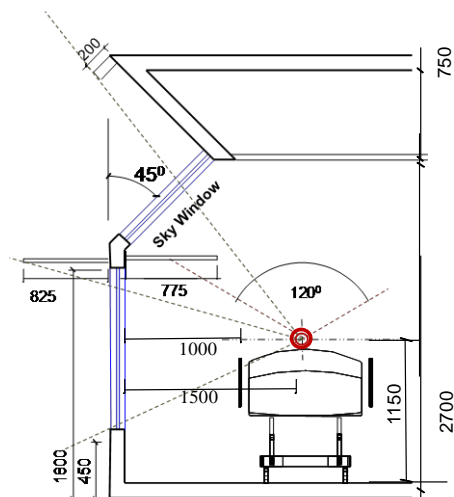Figure 2 Location of test plane sensor in case space.

Figure 3 Section shows distance of patient bed and test point sensor from window
with recommended shading devices.

At the beginning, the windows were considered without any blinds during simulation analysis to isolate the impact of the change of outdoor daylight level on indoor daylight level due to the climate change, and to avoid the effect of the operations of the internal venetian blinds in daylighting the space (Joarder et al., 2009a, 2009b). Later to evaluate the therapeutic potentiality of the space an internal blind, controlled by an active user, was considered. The height of the test plane was fixed to 1150mm above floor level which represent the patients' average eye level when lying on a bed in different ergonomics positions (Figure 4). The test point sensor was placed 1500mm away from the window surface and the direction of the sensor was considered upward (Joarder and Price 2012a; 2012b; 2012c).
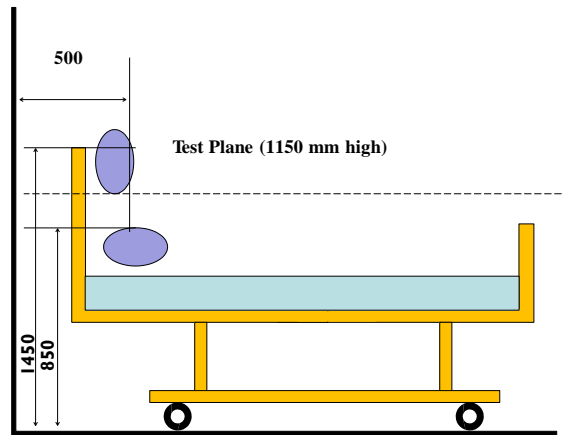
Figure 4: The height of the test plane at 1150mm above floor level (after SLL, 2008).

2.2 Daylighting simulation

To understand the magnitude of the changes in indoor daylight levels at test point, simulation was done under current climate data and was compared with the performance under future climate change time slices (i.e. 2020s, 2050s and 2080s) under different levels of anthoponic carbon-dioxide emissions scenarios (for example low, medium-low, medium-high and high), keeping the rest of the features of the case space unchanged. The daylight levels were simulated with one hour interval at the location of the test point sensor. For each scenario, the test point has 8,760 illumination data considering 24 hours of the day, and 4,380 data considering 12 hours of daylight from 6 AM to 6 PM. The hourly illuminations at test point were averaged for the whole year and considered as the average illumination level at test point for one specific time slice under particular emission scenario. Later, the overall change in annual pattern of daylight level at test point were considered in terms of dynamic daylight metrics (i.e. DA[1] and UDI[2]) to consider the change in therapeutic potentiality of the space.

The 3D computer-aided design (CAD) drawings generated in ADB (2009) software for single-bed in-patient unit with furniture layouts (based on HBN 04-01 (2008) and DH (2005) was imported to ECOTECT (Figure 1). ECOTECT was used as the modelling interface to launch DAYSIM program that is based on dynamic climate based daylight modelling (CBDM) method (Mardaljevic, 2006). DAYSIM use RADIANCE (backward) raytracer combined with a daylight coefficient approach (Tregenza, 1983) considering Perez all weather sky luminance models (Perez et al, 1993). Both RADIANCE and DAYSIM have been validated comprehensively and successfully for daylighting analysis (Reinhart et al., 2001). Changes to material properties (Table 1) and simulation parameters (e.g. timing and duration) were assigned in DAYSIM. Typical Meteorological Year, version 2 (TMY2) weather data provided with ECOTECT 2010 software was replaced with future climate projection data (i.e. CIBSE, 2008) based on current and future Test Reference Years (TRYs) and Design Summer Years (DSYs) hourly weather data sets before calculating annual illumination profiles at test point (Figure 1).

Table 1: Material properties of the case space used for simulation analysis
(Source: Joarder and Price, 2012a;2012c).

Building element	Material description	Material properties
Ceiling	Suspended plaster board ceiling	80% diffuse reflection
Walls	Brick with plaster either side	50% diffuse reflection
Floor	Concrete slab on ground plus ceramic tiles	30% diffuse reflection
Door	Solid core oak timber	30% diffuse reflection
Window	Double glazed low-e aluminium frame	90% visual transmittance
Furniture	Plywood	40% diffuse reflection
Fabric	Heavy cloth	10% diffuse reflection

Metal	Stainless steel	90% diffuse and specular reflection

DAYSIM uses the same raytracer used to generate RADIANCE rendering. As DAYSIM calculate illuminances at discrete sensors, the simulation parameters needed to be modified slightly. Higher parameter settings will result in longer process time. Therefore, the art is to use parameters that are 'sufficiently high but not too high'. Table 2 summarizes the non- default RADIANCE simulation parameters for the simulation analysis recommended by Reinhart (2006) for complex geometry.

Table 2: Utilized simulation parameters in DAYSIM (source: Reinhart, 2006).

Ambient bounces	Ambient division	Ambient sampling	Ambient accuracy	Ambient resolution	Specular threshold	Direct sampling
7	1500	100	0.01	300	0.0	0.0

The design illumination level at test point for dynamic daylight metrics (DA and UDI>2000) for this paper was to provide minimum 190 lx daylight (Pechacek et al., 2008) within a maximum discomfort limit of 2000 lx (Nabil et al., 2006) for south orientation, for a duration of 12 hours in a day from 06:00 AM to 06:00 PM (Joarder and Price, 2012c), for an imaginary patient laying on the spine on the bed in a hospital in-patient room located at Heathrow, West London.

RESULTS

3.1.   Change of daylight level on test point

Figure 5 summarises the increase of the average indoor illumination level from the present (1983-2004) to the extreme future (2080s under high emissions scenarios) considering the average of 24 hours and the selected 12 hours of daylighting for test point sensor. Increases of illuminations were higher for DSYs cases for test point sensor. Based on DSYs, the average illumination level at test point increased by 2% from 1989 to 2020s and increased further by 3% per 30 years till 2080s under low emissions scenarios. While under high emissions scenarios the increases of the average illuminations at test points were by 3% per 30 years from 2020s to 2080s. As a result the average indoor illumination could raise a maximum of 8% (average 62.56 lx considering 24 hours and 126.46 lx considering 12 hours) in the future (2080s) compared to the present (1989). Based on TRYs, the average indoor illumination can also raise by a maximum of 7% (average 51.90 lx considering 24 hours, and 104.82 lx considering 12 hours) in the future (2080s) compared to the present (1983-2004).
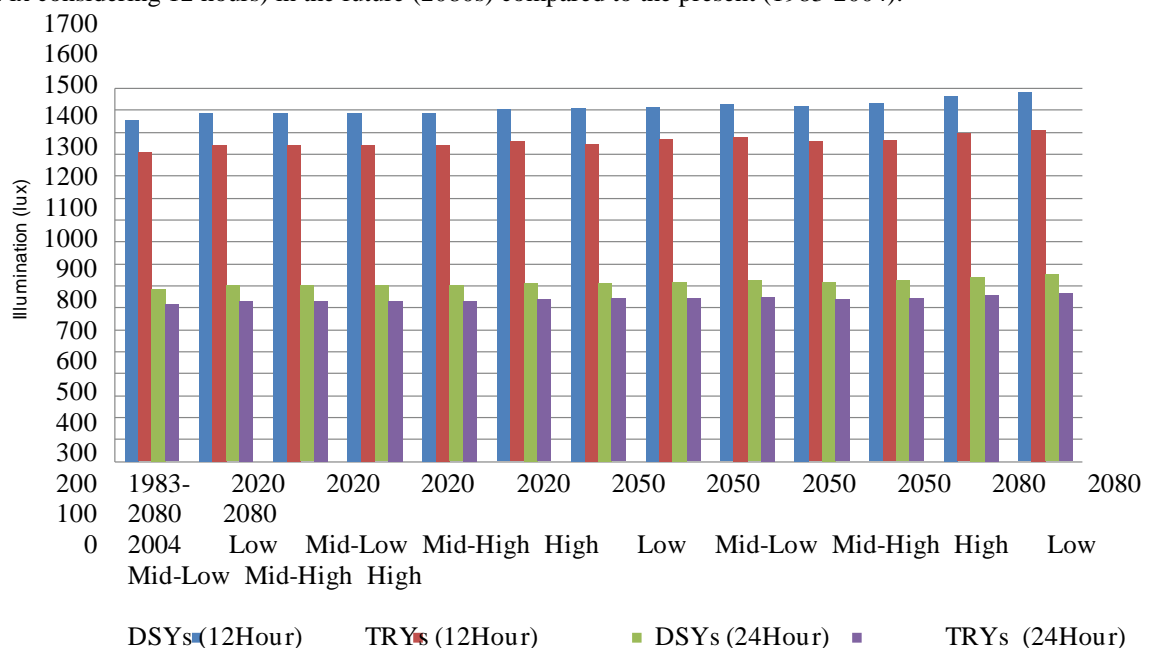

Figure 5: Increase of average indoor illumination levels at core
test plane sensors due to climate change.

Figure 6 shows the illumination profile comparison between the present and the extreme future under DSYs at test point. Comparison of annul (Figure 6) and monthly (Figure 7) illumination profiles showes that the variations between the present and the future illuminations are not constant. A closer observation of 24 hours daily illumination profiles (Figure 8) reveal that the differences between the future to the present could vary from – 995 lx (27 January at 12:00 PM) to 3706 lx (24 August at 12:00 PM) on a particular time of the years.
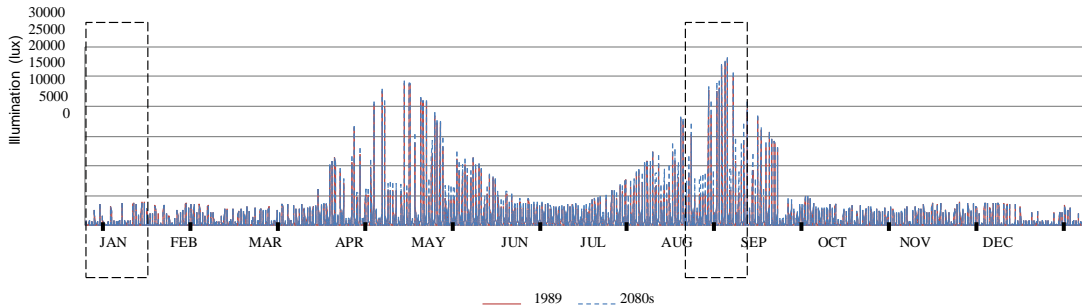

Figure 6: Comparison of yearly illumination profiles between 1989 and 2080s (DSYs) at core test plane sensor.
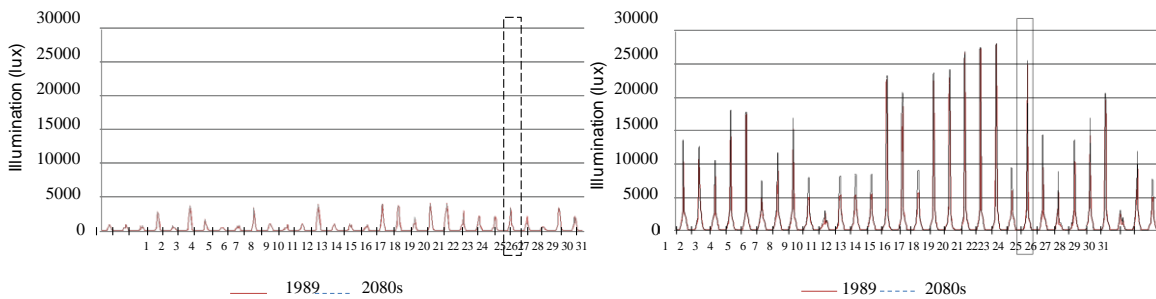

Figure 7: Comparison of monthly illumination profiles between 1989 and 2080s for the months of

January (left) and August (right) (DSYs) at core test plane sensor.
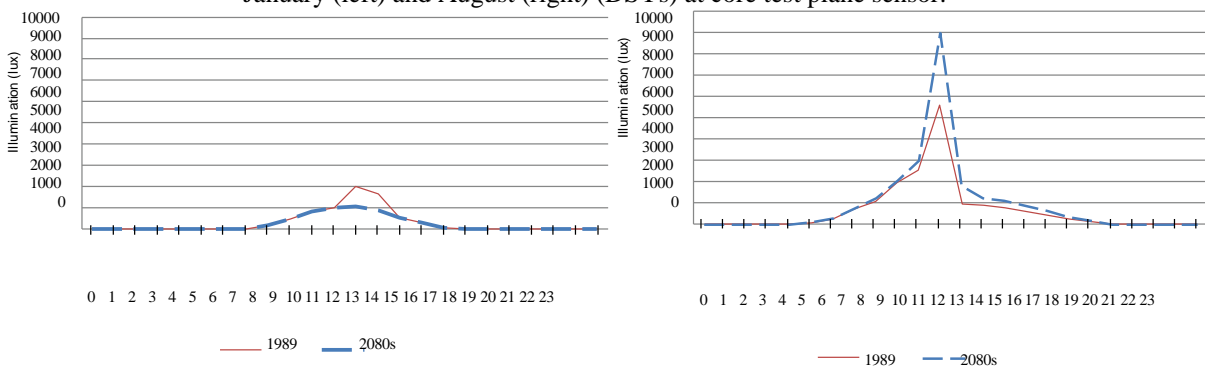
Figure 8: Comparison of 24 hours illumination profile between 1989 and 2080s on 27 January (left) and 24 August (right) (DSYs) at core test plane sensor.

3.2. Consideration of the therapeutic effect of changing daylight levels

Comparison of illumination profiles between the present and the extreme future reveal that in most of the future time, the illuminations will be higher compared to the present illuminations, which results an overall

8% increase in the average daylight level at test point. There are both advantage and disadvantage of this increase of illumination in future. The present illumination, which is lower than 190 lx at a particular time, might be increased to a therapeutic level to support patient's circadian rhythm. At the same time, the present therapeutic illumination at a particular time can cross the limit of comfort (2000 lx) and, therefore, can create glare. As a result, the changing amount of daylight received by patients on their retinas might affect the expected therapeutic gain from daylight on patients' psychological and physiological improvement during their hospital stay.

It is apparent from detail observation of the single day illumination profiles (Figure 9), that illumination levels varied maximum around noontimes (12:00 – 1:00 PM) when both present and future daylight levels are much higher (exceeds the comfort levels) then the benchmark used in this paper (190- 2000 lx). In other times of considered daylight hours (between 06:00-11:00 AM, and between 02:00- 06:00 PM) the light levels increased gradually. These 24 hours daily illumination profiles suggest that a shift change/adjustment in blind control/operations might be a suitable option to keep the duration and amount of illumination levels nearly constant. In this case the opening and closing of venetian blinds should be earlier in the morning, and re-opening of the blinds in the evening should delay from the present schedule of blind operation. The overall pattern of yearly daylight change on patient retina can be compared by presenting the change in the dynamic daylight metrics (DA and UDI>2000) on the test point.

To understand the contribution of internal blinds on increased daylight level, an internal blind is installed for south orientations with the recommended fixed shading devices mentioned earlier.The design of installed venetian blinds ensures that, it will not allow the direct sunlight into the space and will transmit 25% of diffuse daylight compared to the case when the blinds will be removed. This is a generic blind system model supported by DAYSIM under the simple dynamic shading device mode. The blinds will be fully lowered to avoid glare as soon as direct sunlight above $50W/m^2$ will hit the test point and will be re-opened as soon as the sunlight will reduce below $50W/m^2$. Figure 9 shows the locations of internal blinds for south orientations with recommended fixed shading devices.
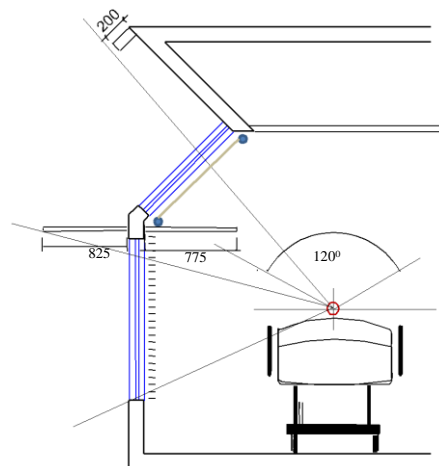

Figure 9 Section shows the locations of internal blinds for south orientations
with recommended fixed shading devices.

Figure 10 shows the impact of blind operations on indoor daylight metrics when the blinds are operated by an active user who opens the blinds in the morning, and partly closes them during the day to avoid direct sunlight (Reinhart, 2002). Under active blind control it will be possible to keep the present DA level constant for both DSYs (76%) and TRYs (75%). The glare level on test point (UDI>2000) remained constant under TRYs (18%), while under DSYs varied 1% (19% - 20%). The overall glare level considering the 63 intersecting points on a 500 x 500mm grid on test plane sensors (DAmax above 5%) varied up to 2% (between 35% -37%) for both DSYs and TRYs. It was evident from the analysis of daylight metrics that the integrated shading system with active blind control is capable to protect the increased level of indoor daylight illumination due to climate change.
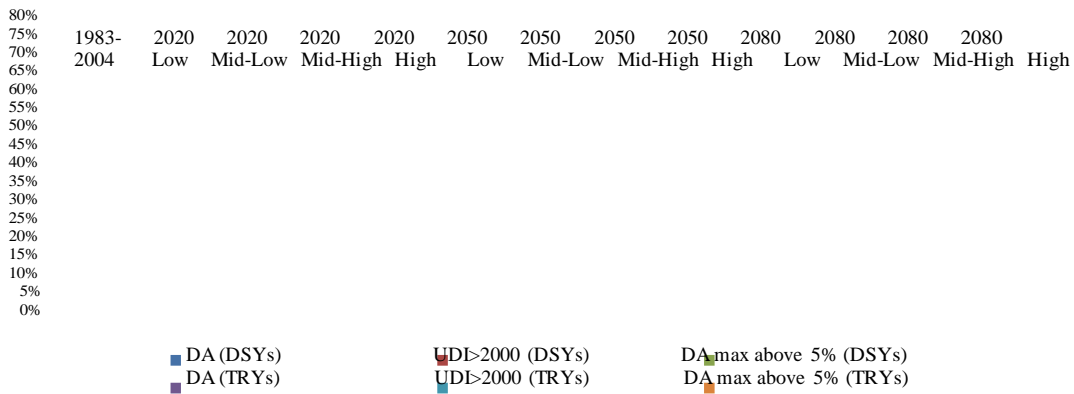
Figure 10: Under active blind controll the DA will remain constant; UDI> 2000 and DAmax above 5% changes slightly (1-2%).

Figure 11 shows a summary of the yearly blind operation schedule to keep the DA levels constant under DSYs and TRYs simulated for this study. To keep the DA level constant under extreme future compared to present, it needs to keep the blinds downward 28% more in a year for DSYs, and 40% more for TRYs.
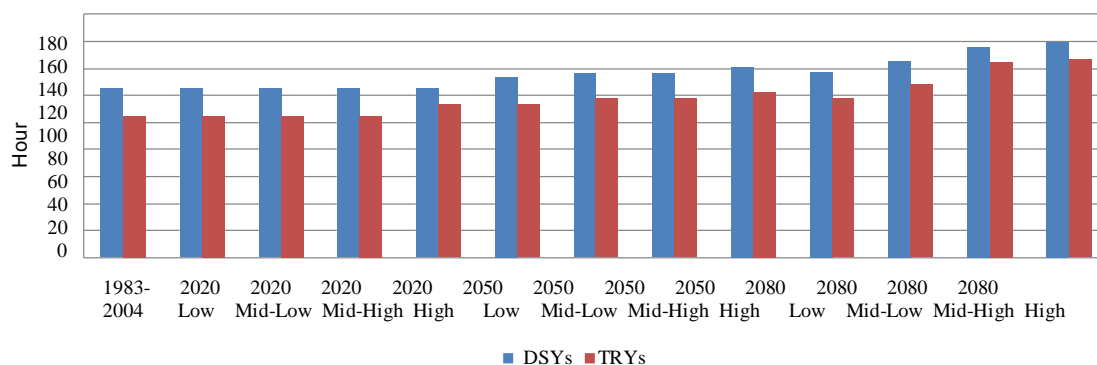

Figure 11 Total number of hours that the blinds need to be kept downward to keep the DA level constant under DSYs and TRYs.

DISCUSSIONS

The analysis of the therapeutic daylighting performance of the case window configurations under different future emissions scenarios revealed that, the average indoor illumination at
test point can raise by a maximum of 8% (average 62.56 lx) in the future (2080s) compared to the present (1983-2004) based on the CIBSE (2008) database and the differences can vary -995 lx to 3706 lx. Comparing the average illumination increase in test point to the average increase of the room illumination (average of 63 intersecting points at test plane) identified previously by Joarder and price (2012c) as 5%; it seems that average increase in illumination at test point is 3% higher than the average room illumination due to the close location of patient beds near windows. It was also evident that, the difference in indoor daylight levels between the present and the extreme future is due to increase of higher illumination during noontimes (Figure 9) and, therefore, extra protections are needed during this time periods.

The simulation analysis showed that the case window configurations, with integrated shading system with active blind controls are capable to protect the increased level of indoor daylight illumination due to climate change. But, to protect the indoor from increased daylight levels, internal blinds were needed to shut down more often/time during day hours, which might create negative impact on patient clinical improvement due to lack of outdoor views. An outdoor natural view are found positive to patients' recovery process psychologically (Kaplan, 2001; Kaplan et al., 1995; Ulrich, 1979), physiologically (Chang et al., 2005; Lohr et al., 1996; Coleman et al., 1995; Ulrich et al., 1991; Doxon et al., 1987; Verderber et al., 1987; Ulrich, 1984;), emotionally (Adachi et al., 2000; Ulrich et al., 1991; Ulrich, 1981), and in cognitive changes (Tennessen et al., 1995; Cimprich, 1993; Hartig et al., 1991). Both daylight and outdoor view have a significant impact on patient clinical recovery, which was found by previous studies, based on the analysis of real world field data (Joarder et al. 2013; 2010).

The design of simulated venetian blinds presented in this paper, did not allow the direct sunlight into the space and transmitted 25% of diffuse daylight compared to the case when the blinds were removed. It is also possible to enjoy the maximum use of increased daylight level by using specially designed blinds which will not generic in nature but interactive/change continuously (not fixed to $50W/m^2$) and allow 0%-100% of outdoor daylight throughout the daylight hours to increase DA levels without increasing glare. It is also important to consider that with higher daylight illumination, high heat gain and UVR can enter through the windows into the space and could be harmful to patients (Joarder et al., 2009d).

LIMITATIONS

In this paper, the impact of the increase of indoor daylight levels was observed by evaluating the performance of south window configurations with fixed and movable shading devices. The design of the case window configurations, with inclined window at the top and tilted ceiling above, has certain advantages in this regard. The pitched service space (or upper floor) above the inclined window provides better protection from direct sun during noontimes; a horizontal skylight without any shade might allow excessive amount of illumination inside patient room during noontime when the sun is near zenith and outdoor ambient daylight level is highest in the environment, as well. Therefore, the 8% increase in average indoor illumination at test point is specific to the particular design of the case window configurations. The simulation analysis showed that the case window configurations, with integrated shading systems and active blind controls are capable to keep the DA and UDI> 2000 nearly constant in case of the increased level of indoor daylight illumination in the future due to climate change. The result should vary with the change of different window configurations with various types of shading devices.
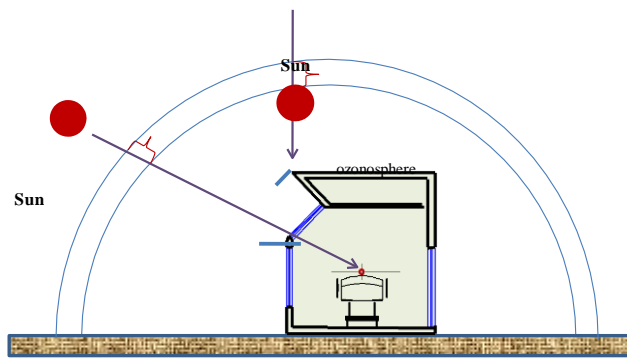

Figure 12: The service space above sky window provides complete shade to the sun during noontimes when the sun is near zenith.

The specific limitations of the future climate database used in this paper is that, UKCIP02 scenarios are not designed to formally or quantitatively reflect all of the uncertainties of the future climate (Hulme et al., 2002) and the future global and diffuse irradiance data of UKCIP02 have been generated from synoptic data (mainly sunshine duration and cloud cover) using computer models, due to the difficulty of obtaining consistent irradiation data (CIBSE, 2008). Therefore, the assumptions, based on the climate change simulation study of this paper, will only satisfy the projections described by UKCIP02, and will not support other climate change models, for example UKCP09.

In absence of a suitable standard for indoor daylighting to meet therapeutic needs of patients, in this paper, the upper limit of comfortable daylight level proposed by Nabil et al. (2005) to 2000 lux, and the minimum daylight intensity to support human circadian rhythm recommended by Pechacek et al. (2008) to 190 lux, which were later verified for hospital in- patient rooms from real world field data by Joarder and Price (2012b), were selected as the design illumination at the location of patient retina. The direction of the test point sensor was considered upward in this paper. When patients are on bed, the direction of their looking are changed according to the bodies' ergonomic gesture and posture e.g. lying with their spine, inclined and upright on back. For example, if the patients lay with their spine, the directions of the eyes are upward towards the ceiling, and if the patients are in upright position resting on their back, the directions of the eyes are towards the wall. The direction of eyes may vary up-to 90 degrees in angle (parallel to the floor to perpendicular to the ceiling) based on different inclined position of the patient body, resting on tilting back of the hospital beds. The authors found that the measurement of illumination on a horizontal plane, with sensor points upward to the ceiling, which is widely practiced in daylighting simulations, is more sensible compared to the measurement on a vertical plane or inclined plane. Many researchers emphasised that bedridden patients are forced to look at a monotonous white ceiling of hospital rooms

and suggested decorative ceiling for hospital rooms (Dutro, 2007; Horsburgh et al., 2001). The impact of decorative hospital ceiling design on patients' choice and performance was found as a positive distraction from many studies (Dutro, 2007; Eriksen,2001; Ulrich 1991; Cintra 2001). Therefore, the direction of the test point sensor was considered upward; however, with different eye directions the amount of light on retina will be affected, which has not been analysed in this paper.

CONCLUSION

To conceptualise the impact of climate change on indoor daylight levels and its therapeutic impact on hospital in-patients, in this paper, prospective simulation study is done to identify the change in daylight level on test point (patient retina while lying on the spine), under different future emissions scenarios under UKCIP02. The result shows that the average indoor illumination at patient retina can raise by a maximum of 8% in the future (2080s) compared to the present (1989-2004). The window with fixed shading and active blind operation can protect patient retina from increased daylight levels. However, to protect the indoors from increased daylight levels, internal blinds will be needed to shut down more often/time during day hours compared to the present, which might create a negative impact on patients' clinical improvement due to lack of outdoor views. As the ambient outdoor daylight levels are expected to be increased due to climate change, it was evident from the climate change simulation analysis of this paper that the future climate will probably offer a greater potential for the use of daylight for both visual and therapeutic purposes; however, protection from increased glare and UVB radiation need careful consideration. To get the benefits of higher daylight intensity, due to the climate change, one of the options might be to incorporate flexibility in the design of window shading system by specially designed interactive blinds or movable shades that will allow 0%-100% of outdoor daylight through windows without discomfort. This paper presents a case of the difficulties/uncertainties of using computer based daylighting simulation programs to achieve the design goal based on historical data and, also highlights the necessity for the consideration of future climate data while do daylighting simulation analysis.

Notes

1. DA (daylight autonomy) – is the percentage of the occupied times of the year when the minimum illuminance requirement at the sensor is met by daylight alone.

2. UDI (useful daylight illuminances) – try to find out when daylight levels are 'useful' for the user and when they are not. UDI results in three metrics, i.e. the percentages of the occupied times of the year when daylight is useful (100- 2000lux), too dark (<100 lux), or too bright (> 2000 lux).

ACKNOWLEDGEMENTS

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THE IMPACT OF SMALL AND MEDIUM ENTERPRISES DILEMMAS ON BUSINESS PERFORMANCE

Siti Aisyah Ya'kob*, Kit-Kang Liew & Norlina Kadri***

Siti Aisyah Ya'kob, Lecturer, Department of Business Management, Universiti Malaysia Sarawak,
Kota Samarahan, Sarawak, Malaysia, E-Mail: ysaisyah@unimas.my*
Kit-Kang Liew, Department of Business Management, Universiti Malaysia Sarawak,
Kota Samarahan, Sarawak, Malaysia, E-Mail: kkliew1991@gmail.com**
Norlina Kadri, Lecturer, Department of Accounting and Finance, Universiti Malaysia Sarawak,
Kota Samarahan, Sarawak, Malaysia, E-Mail: knorlina@unimas.my***

ABSTRACT

Business performance is an important element in the business. Thus, the dilemma confronted by the small and medium enterprises will affect both financial and non-financial business performance. A study on the small and medium enterprises topic is not new but necessary in order to observe the effect of the considerable issues in business environment. Therefore, this study is conducted to investigate the dilemmas that affect the business performance among small and medium enterprises in service sector. Three dimensions have been proposed, which are transportation facilities, financial strength, and labor force skills. A total of 159 sets of questionnaires were completed by the firms' representative. The findings from this study discovered that transportation facilities, financial strength, and labor force skills have a significant and positive relationship with business performance. The results present a better understanding of transportation facilities, financial strength, and labor force skills issues from small and medium enterprises in Kuching city, which is located in Borneo Island.

Keyword – business performance, Sarawak, small and medium enterprises

INTRODUCTION

Small and medium sized industry is still in the works to grow day to day as it is a key driver for the nation development (The Borneo Post, 2012). Sarawak alone, it was pointed out that the state has a total of 43,830 or 6.8 per cent small and medium enterprise establishments in Malaysia (SME Corp Malaysia, 2011). From the mentioned figure, 40,608 enterprises establishment is categorized under service sector.

Thus, this study intends to examine the dilemmas of labor force skills, financial strength and transportation facilities that affect the business performance among small and medium enterprises in Kuching, Sarawak. In Sarawak, it is nearly 40 per cent of road projects have suffered delay (Sipalan, 2012). Noticeably, unrepaired roads will affect the transportation link and product delivery. Thus, the enterprise requires making a wise decision in choosing the mode of transportation in order to save costs (Lawless & Gore, 1999). Even though the small and medium enterprises are able to obtain the financial resources from financial institutions, the qualification of the applicants to get the loan turns into a concern (Abdullah & Manan, 2009). Not only financial institutions, the government also supports the small and medium enterprises by providing the loan and grant as well as educating the enterprises in loan application procedure (The Borneo Post, 2014). Labor force is an important driver to an organization (Saru, 2007). Most small and medium enterprises have limited ability to attract and retain the employees due to perceived unattractive and non-competitive remuneration and benefits ("SME Masterplan 2012-2020", 2013). Findings from Hill and Stewart (2000) confirmed that the organizations that able to retain the labor force could encourage the employees to commit to the organization and enhance the business performance.

Therefore, a study on transportation facilities, financial strength and labor force skills is crucial in order to observe the impacts of those dilemmas on small and medium enterprises performance.

The growth population in Kuching city has attracted small and medium enterprises to embellish in this area. Service sector is chosen as it has the highest number of small and medium enterprises in Kuching city (Department of Sarawak Chief Minister, 2010). The survey is targeted to those businesses categorized under small and medium enterprises. Particularly, the responses are obtained from the participation of enterprises' representative, preferably the owners or top management group.

Thus, the objectives of this study are:

i. To examine the relationship between labor force skills, financial strength, transportation facilities and business performance within small and medium enterprises.

ii. To identify the most influential factor that affects the business performance within small and medium enterprises.

LITERATURE REVIEW

2.1 Small and Medium Enterprises (SMEs)

The government has classified the small and medium enterprises based on some characteristics. The small and medium enterprises in Kuching city are categorized into two sectors which are manufacturing sector as well as services and other sectors (Guideline for new SME definition, 2013). Literature reported that there is no accepted worldwide definition of small and medium enterprises (Hooi, 2006). Means, there is no conclusive standard on defining the small and medium enterprises globally. The definition of small and medium enterprises can be defined based on the firms' turnover or number of employment. Particularly, the firms with sales turnover from RM 300,000 to less than RM3 million or employments from 5 to less than 30 workers are classified as small enterprises while the firms with sales turnover from RM 3 million to less than RM20 million or employments from 30 to 75 workers are classified as medium enterprises in service sector (Guideline for new SME definition, 2013). In the local context, small and medium enterprises are preferably measured in fixed quantitative measure (Hashim & Abdullah, 2000b) that includes the total number of workers, the total number of capital, total number of assets and sales turnover (Hashim & Abdullah, 2000a).

2.2 Business Performance

Measuring the business performance is not new (Agus & Abdullah, 2000) as the performance measure is crucial for the business entity (Berthon, MacHulbert, & Pitt, 2004). As discovered, the performance can be influenced by certain factors comprising of labor force, cost, amount of information, number of skilled workers and financing issues (Gummesson, 1998). The literatures state the advantages of using the performance to improve the business. Performance measure is crucial in order to attain the objectives that have been set early (Berthon et al., 2004) and help the organization to further understand and try to improve the flaws (Wolff & Pett, 2006). As pointed out by Porter (1985), the organization with a high level of performance will easily achieve their goal or objective. He added, the organization with a low level of performance will hardly achieve their goal or objective and it cannot be in time.

2.3 Labor Force Skills

Labor force has linked development and training for organizational to achieve objectives and have the ability to respond to changes in the technology and environment (McLagan, 1989). In 1990's, labor force is the key for organizational strategy, external labor market strategies, changes in internal labor market needs and the value system within an organization (Hill & Stewart, 2000). Undeniably, labor force must be sent to training in order to be talented individuals for developing the organization and support to achieve organization goals (McLagan, 1989). However, organizations may concern about the cost of training the labor force. Small businesses are required to select a suitable training course for their labor force accordingly to their budget allocation and training objective (Rigg & Trehan, 2002). A study also revealed labor force helps to build up the organization and ensures the operation running smoothly (Saru, 2007). Hence, retaining workers, skill enhancement strategies and labor force

expertise should be considered (Hill & Stewart, 2000). Thus, the literatures prove that investment in workers will enhance the skills and performance of an organization.

2.4 Financial Strength

Research activities on financing and funding issues related to Malaysian small and medium enterprises are quite popular (Aris, 2007; Saleh & Ndubisi, 2006). Small and medium enterprises face challenges such as gaining financing sources, shortage of financial records and insufficient documents to support loan application (Aris, 2007). Referring to the Malaysian study, 84.3 percent of respondents have experienced difficulties in obtaining external financing due to limited amount of loan approved, short-term loan duration and failure to provide the collateral (Wahab & Buyong, 2008). However, this issue is not caused by the insufficient amount of money allocated for small and medium enterprises. Abdullah and Manan (2009) revealed the main reason of this issue is due to the qualification of the small and medium enterprises to obtain the loan. They advise the business owners to play an important role in investigating their financing preference especially in deciding the financial needed to operate the organizations and making decision to achieve the business objectives. It can be concluded the financial factor is seen as a crucial element to the growth (Cook, 2001; Hall, 2003) and the success of the business (Hall, 2003). In addition, the owner of an organization plays an important role in investigating their financial preference (Low & Mazzarol, 2006). The owner must decide on the amount of financial needed to run the business and decision made must be useful to achieve the organization goals.

2.5 Transportation Facilities

People need a transport to carry stuffs or providing services for others (Sheller & Urry, 2000). As transport is an important medium to carry goods from one place to another (Adedeji, Olafiaji, Omole, & Olanibi, 2014), organizations are required to make a wise decision to transport the passengers or freights through the available transportation system (Rodrigue, Comtois, & Slack, 2006). To save costs, the right selection of transportation mode is a vital decision for organizations (Lawless & Gore, 1999). Not only cost, the decision on selecting the transportation is also influenced by several factors such as geography, infrastructure, and how passengers and freight are carried (Rodrigue et al., 2006). Previous study also reported the transportation cost accounts for 10 percent of the total cost of a product (Rodrigue et al., 2006).

METHODOLOGY

3.1 Sampling

The sampling frame of this study is obtained from the state government of Sarawak. Among the eight parts of Sarawak, Kuching city is selected for the highest number of enterprises operated in service sector (Department of Sarawak Chief Minister, 2010). Thus, the listing is considered precise as it is officially published by the state. Slovin's formula is used to calculate the sample size (Setiawan, 2007). With the population of 733 service businesses classified as small and medium enterprises in Kuching city, the sample size of 159 with margin of error of 7 percent is calculated using this formula. By conducting a convenient sampling, only the enterprises' representative consists of the owner or top management employee are invited to participate in this survey. This requirement is made as they are assumed as the right person to provide the responses (Chen & Paulraj, 2004).

3.2 Research instrument

The questionnaire comprises of five sections. Four of which are measured by using a five-point Likert scale. The scale used for transportation facilities, labor force skills and financial strength sections described the level of respondents' agreement (1 is strongly disagree; 2 is disagree; 3 is undecided; 4 is agree; 5 is strongly agree) while the business performance section is measured by using perceptual responses (1 is much worse than competitor; 2 is worse than competitor; 3 is same with competitor; 4 is better than competitor; 5 is much better than competitor) (Kroes & Ghosh, 2010). The last section identified the respondents' background information and business profile.

3.3 Data collection method

This study carried out a self-administered survey that enables the enterprises representatives to respond at their own convenience. The questionnaire was distributed within two months by walking-in and contacting the

enterprises directly. Out of 240 sets of questionnaire disseminated, 159 sets were usable for analysis. Thus, the response rate for this survey is 66.25%.

DATA ANALYSIS AND FINDINGS

4.1 Respondents' and Business Profile

Majority of the respondents are top management employees (72.30%) and the rest are the owners (27.70%). Most of them have less than 19 full time employees (93.10%). The analysis showed that the majority of the small and medium enterprises ownership type is under sole proprietorship (56.30%). From 159 enterprises, 45.30% enterprises prefer to operate the business at commercial shop lots.

4.2 Factor Analysis

Factor analysis is performed on the 15 items of the independent variables order to obtain the manageable number of items (Lee, Kwon, & Severance, 2007). Next, the Keiser-Meyer-Olkin (KMO) and Barlett's test of Sphericity are performed to validate the factor analysis could be performed or not (Tabachnick & Fidell., 2001). The KMO value is 0.883 and the Barlett's test is statistically significant (Chi-Square = 2744.141, $p < 0.000$) which is adequate for factor reduction procedure. After five iterations, three components are extracted with Eigenvalues more than 1 and contributing 85.06% of the total variance. In detail, Factor 1 and Factor 2 are made up of five variables; Factor 3 is made up of four variables respectively. The three factors were named as labor force skill, financial strength and transportation facilities.

The factors loadings of all the variables are presented in Table 1 for the constructs of small and medium enterprises dilemmas.

Table 1 Rotated Component Matrix for Small and Medium Enterprises Dilemmas

Variables	Labor force skill	Financial strength	Transportation facilities
I am confident of my abilities to start a business	0.847		
I have leadership skills that are needed to be an entrepreneur	0.882		
I have mental maturity to be an entrepreneur	0.904		
I have the ability to set appropriate business goals	0.898		
I have the ability to determine what customers need	0.809		
I am daring to invest		0.661	
I am able to pay back my loan		0.830	
I am able to get enough money to start my business		0.901	
Taking risk bother even if the gains involved are potentially high		0.913	
I feel comfortable getting business loan		0.909	
Good condition of roadway in this city			0.610
Excellent road maintenance in this city			0.868
The expense of the transportation is accepted			0.910
The organization using transportation during night time			0.861
Eigenvalue	8.262	1.879	1.768
% of Variance	59.015	13.422	12.625
Cumulative % of Variance	59.015	72.437	85.062

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 5 iterations.

4.3 Reliability Analysis

The reliability test is conducted to test the accuracy, precision and consistency of the variables used to measure the factors (Cooper & Schindler, 2008) i.e. labor force skill, financial strength, transportation facilities and business performance. The coefficient value can range from 0 to 1 to indicate the internal consistency of the variables (Hair, Bush, & Ortinau, 2009). The acceptable reliability is an alpha value 0.7 and the meaningful reliability is greater than 0.8 (Sekaran, 2000). Table 2 presents the alpha value of the variables for labor force skill is 0.958, financial strength is 0.954, transportation facilities is 0.900 and business performance is 0.764. Therefore, the reliability analysis confirms that the variables for labor force skill, financial strength and transportation facilities have meaningful reliability which is an alpha value greater than 0.8 meanwhile the variables for business organization have acceptable reliability which is an alpha value greater than 0.7.

Table 2 Reliability Test

Dimensions	Number of Items Tested	Cronbach's Alpha	Outcome
Labor force skill	5	0.958	Meaningful
Financial strength	5	0.954	Meaningful
Transportation facilities	4	0.900	Meaningful
Business performance	5	0.764	Acceptable
Overall	**19**	**0.944**	**Meaningful**

4.4 Correlations Coefficients

The correlation is performed to describe the degree of linear relationship between two variables (Hair et al., 2009). Thus, this study examines the strength of correlation of independent variables i.e. labor force skill, financial strength and transportation facilities with dependent variable i.e. business performance by using Pearson correlation coefficient. The strength of correlation ranges between -1.00 and 1.00 is referred from Hair et al. (2009).The coefficient range from 0.81 to 1.00 is very strong, 0.61 to 0.80 is strong, 0.41 to 0.60 is moderate, 0.21 to 0.40 is weak with low correlation, and 0.00 to 0.20 is very weak to no relationship at all.

The correlation analysis presents that all the independent variables i.e. labor force skill, financial strength and transportation facilities are significantly correlated with the dependent variable i.e. business performance, at a significance level of 0.000. Not only discovering the strength of correlation, the correlation analysis could provide the information of either positive or negative relationship.

The correlation coefficient indicates that there is a moderate positive correlation between labor force skill and business performance ($r = 0.517$, $p = 0.000$), a moderate positive correlation between financial strength and business performance ($r = 0.581$, $p = 0.000$) while transportation facilities and business performance are a moderate positive correlation ($r = 0.467$, $p = 0.000$).

The analysis presents the correlations between independent variables and dependent variable are positively correlated below 0.60. In general, financial strength has the strongest positive correlation with business performance, indicating the more the financial strength, the better the business performance would be perceived.

4.5 Multiple Regression Analysis

Multiple regression analysis is performed and the results are illustrated in Table 3. The results show that the R square of the model is 0.400 which means that 40.00% of the variance in business performance (dependent variable) can be explained by the three independent variables namely labor force skill, financial strength and transportation facilities. The results of the ANOVA test show that the model is statistically significant (sig. = 0.000, $p < 0.05$) with F-value 34.494. The results indicate that the three indicators of the small and medium enterprises dilemmas were significantly related to business performance. The standardized beta coefficient indicates the relative importance of each indicator. Financial strength ($\beta = 0.367$, p = 0.000) generates the highest positive and significant influence on business performance and this is followed by labor force skill ($\beta = 0.206$, p = 0.013) and transportation facilities ($\beta = 0.172$, p = 0.025).

Table 3 Multiple Regressions Analysis

	Standardised Coefficient (Beta)	t-value	Sig.
Labor force skill	0.206	2.518	0.000
Financial strength	0.367	4.491	0.013
Transportation facilities	0.172	2.268	0.025

a. Dependent Variable: Business Performance

R Square = 0.400   F-Value = 34.494

Adjusted R Square = 0.389   Sig. = 0.000

4.6 Hypotheses Testing

Based on the results above, it can be concluded that three hypotheses were supported (Table 4).

Table 4 Hypotheses Testing

Hypotheses		Findings
H$_1$:	There is a significant and positive relationship between labor force skill and business performance.	Supported
H$_2$:	There is a significant and positive relationship between financial strength and business performance.	Supported
H$_3$:	There is a significant and positive relationship between transportation facilities and business performance.	Supported

DISCUSSIONS AND CONCLUSION

Small and medium enterprises have to deal with the dilemmas to operate the business. The three dimensions of small and medium enterprises dilemma namely labor force skill, financial strength and transportation facilities are tested on their effect on the business performance. The multiple regression analysis shows that the performance of micro and small enterprises is found to be significantly influenced by labor force skill. The result is consistent with Hill and Stewart (2000) who state the enhancement of skill and expertise should be strategized as it has encouraged individuals to present a higher level of commitment to reach satisfactory organization performance. As proven by previous study, the monetary concern has been taken into consideration. Small organizations are advised to select appropriate training for the workers and achieve the objectives (Rigg & Trehan, 2002). In addition, the multiple regression analysis also shows the performance of small and medium enterprises is significantly influenced by financial strength. Financial strength factor is crucial for the growth of the business (Cook, 2001; Hall, 2003). However, lacking of financial aids is not the main issue for the enterprises. The difficulty is revealed when Abdullah and Manan (2009) discovered the qualification of the small and medium enterprises to obtain the loan is not satisfactory. The multiple regression analysis presents that the performance of small and medium enterprises is found to be significantly influenced by transportation facilities. This finding also lends support to Lawless and Gore (1999) where cost saving can be achieved by selecting the correct decision on transportation.

In conclusion, this study tests three dimensions that significantly influence the performance of small and medium enterprises namely labor force skill, financing strength and transportation facilities. Financing strength is found to be the most prominent dimension that affects business performance. This study has several limitations that might influence its consideration of the research findings. First, the sample of this study is restricted to small and medium enterprises located in one area only. Future studies may extend the scope of the research area to include several cities in Sarawak. As a result, the research findings can be generalized to a larger population. Next, this study is limited to service sector only. Thus, the findings cannot be generalized to small and medium industry in this

area. In this study, only three dimensions were tested. The research findings also explain that these three dimensions can only predict 40 percent of the variance in small and medium enterprises performance in service sector.

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ANALYSIS OF CHILDREN'S IMPACT ON PURCHASE DECISION MAKING FOR DURABLE GOODS

Gideon C. Uboegbulam*, Prof. Dennis O. Umesiobi**

D-Tech. Researcher, Department of Business Management, Central University of Technology,
Free State, South Africa.E-Mail: u.gideon@yahoo.com*
HOD, Department of Agriculture, Central University of Technology,
Free State, South Africa.E-Mail: umesiobi@cut.ac.za**

ABSTRACT

This study is set out to examine the influence children exert on family purchase decision, with respect to purchase of durable goods in Nigeria. The significant of this study has to do with the interaction between family members – father, mother and children - as a unit, and the fact that children's role in purchase decision making are given little or no attention in most developing world. The primary data for this study was sourced from structured and semi-structured research questionnaire. This study population consists of families' ethnic groups in Nigeria, which are fairly represented in the study geographical area, and the sample size of 300 was generated by employing Mac'odo (2002) Tara Yamani formula. The questionnaire was administered to families having children from the age of five and above. Analysis of Variance (ANOVA) statistical tool was used to test the hypotheses in the Statistical Packages for Social Sciences (SPSS) version 17.0. The result revealed that children influence family purchase decision making for durable goods in Nigeria, and that the degree of the children's influence on the family purchase decision making for durable goods in Nigeria is not significant. The knowledge of family purchasing behavior will help to develop appropriate marketing strategies that will identify the family member who play what role and at what stage in family purchase decision making. There is need to also adopt specific target marketing strategy for each category of the family as to achieve the desired marketing result.

Key words: Children, Purchase Decision, Impact, Durable Goods.

INTRODUCTION

The ever occurring changes in society and technological development since the 21st century has made children and adolescents play more important role in the family purchase decision than they did in the past. The cultural, social and demographic changes in the last few decades have indeed triggered the growth of different family structure in different countries and societies. The structure includes traditional family households, co-habiting family households and single-parent family households. The US Department of Commerce in 1998 noted that the ratio of the traditional families – married couples with child/children is still 56 percent, excluding the families in which married couples do not have or live with child/children.

Some decades ago, the sole breadwinner of the house was the husband and this suggests why in many homes of those years, the husband made most of the family purchase-decision. Today the trend has changed drastically, because both spouses and even their adolescent family members now contribute to the family financial income for the household. This trend has contributed to the shift in the family purchase decision-making process. Every member of the family now influences in one way or the other the family's purchase decision-making of the household. Moreover, with the advent of modern technology, children can be exposed to global market where they see varieties of durable goods that they believe can enhance their family status or satisfy their needs.

Several studies in family decision-making have investigated the relative amount of influence exerted by family members and their level of influences at each stage of the decision-making process (Lee and Marshall 1998). This underlines the importance and the fact that major socio-economic and social changes have occurred in many countries and regions of the world. Therefore, understanding the household decision-making process is complex, because decision-making in a family will change according to product type, attitudes to purchase decision-making roles in the family and particularly family composition (e.g. single-parent families, small and large families).

All these, and couple to the reality that consumer demands for many products and services are sometimes influenced by children, is the motivation for this study on impact of children in family purchase decision making behavior in Nigeria.

Role of Children in Family Purchase Decision-making

Undeniably, teenagers and adolescents are often involved in family decision-making. Kumit (2004) observe that children have experience in decision-making with regard to simple impulse purchases as well as for more planned and longer-term purchases. Indeed, they argue that the child rather than the parent may in many instances be the primary decision-maker.

It was noted that influence of children in family purchase varies based on product, stage of the decision-making process, nature of socialization of children, families' gender role orientation, demographic features, etc. (Belch et al., 2005). Three decision stages have generally been used in some previous researches when measuring children's influence according to Martnez and Polo, (1999). These are problem recognition, information search, and choice. Some of these previous findings suggested that children have more influence during the problem recognition and information search stage. However, this declined at the choice stage (Betty and Talpade, 1994).

In Western literature, children have been reported to wield a lot of influence in purchase decisions for children products, such as snacks, Cereals, toys, wears, holiday/vacations and eating at particular restaurants (Belch et al., 2005; Julie and Nancarrow, 2007; Foxman et al. (1989).

In a study of ''Children's Influence on Family Decision-making" Chavda, Hadey and Dunn (2005), found that children exercise quite strong influence on the family decision-making processes, particularly for products relevant to them. They also stated that older children exert more influence than younger children, but that gender does not contribute significantly to parents' perception of their children's influence.

The influence of children across product categories and parental responses was studied with respect to various factors. Julie and Nancarrow (2007) studied mother and child making purchases of ready-to-eat breakfast cereals. They noted that most products are not directly available to a child and the parents generally act as intermediary purchasing agents for the child. In such cases, the extent of influence a child may have on a parent's purchase decision depends on at least two factors: the child's assertiveness and the parent's child-centeredness. They observed that the more assertive the child, or the more child-centered the mother, the more likely the mother will purchase child's favorite brands. However, they found that the mother played a "gatekeeper" role and bought cereals that weighed strongly on nutrition. In cases of disagreement with the child over brand decisions, the mother tried to superimpose her preferences over those of the child. They reasoned such outcomes stem from the mother's perception of the quality of information possessed by the child. Yet, they found that assertiveness by a child could increase the likelihood of the child having his/her favorite brands purchased, the opposite is the case in Nigeria.

Similarly, Chan and McNeal (2003), in a study of Chinese parents reported that parents indulged in considerable gate keeping for children's products. They exhibited strict control over the kinds of products that children can or cannot buy, while at the same time allowing children some freedom in choosing brands of permissible products. Piron (2002) also pointed out that children who rely on pre-established preferences based more on premium incentives offered on a purchase than the nutritional features of a cereal at the time of influence on cereal purchases. Sijun, et al. (2007) further noted that no particular attitude or set of attitudes uniquely determines for all products whether a mother would be influenced by her child or not. Family-oriented mothers or women with close knit families were more susceptible to children's influence. Mothers co-viewing TV programs along with their children were more likely to yield to children's influencing attempts for products advertised on those shows the authors concluded.

Jensen (1995) proposed that parents' involvement is a function of financial risk, their role as users and their perception of product differentiation. Geuens et al (2002) observed that the relative influence of children varies by the extent to which the parents are busy. Foxman et al (1989) concluded that children tend to have more "say" in the purchase of products that are less expensive and for their own use. Several factors that were found to significantly affect agreement among family members regarding adolescent purchase decision influence include: families witnessing greater influence had older fathers, a concept-oriented communication style, fewer children, and a mother who worked fewer hours outside the house. Foxman et al. (1988) observed adolescent-parent interaction in decision-making and reported that besides direct requests, adolescents are likely to use bargaining (money deals, other deals, and reasoning) and persuasion (opinions, begging) as strategies to influence decision outcomes.

In India, Sijun et al. (2007) studied the role played by family members while purchasing a television across five occupational categories: teachers, doctors, business people, lawyers, and engineers. Children of engineers and doctors were found to have remarkable influence in the purchase decision. Hundal (2001) in a study of rural buying behaviour in the Amrisar district of Punjab investigated the role of family members in making purchase decisions for durables including refrigerators, televisions, air coolers, and washing machines. He found that product selection decisions in rural families were mostly made by spouses together but they were highly influenced by children. Halan (2002) opines that "marketing to kids is no longer kid stuff". In a focus group study by Kids-Link, the market

research group of Kid Stuff Promos and Events, with boys and girls in the age group of 13-15 years in Delhi, girls were noted to influence 50 percent of the decisions. The study highlighted that kids have a lot of information because of exposure to television, other media, and friends. They reflected that parents sought their opinion even in making purchase of products not directly related to the children, such as cars, because of their higher knowledge of brands, models, and the latest trends. Children also stated that parents bought products that made them (kids) happy.

Children's Influence across Stages of Decision-making Process

Since family decisions are dynamic and interrelated, Ekstrom (2003) suggested that the decision-making process should be studied across decisions rather than in relation to a given decision independently. Sijun et al (2007), while examining family decision-making processes, observed that all members of the family (husband, wife and children) were greatly involved in all-three decision stages (problem recognition, search for information and final selection), when considering a fast food restaurant and a family trip (that is, for products that affect the entire family). The wife/child was very important in initiating a purchase and providing information. It was also noted that children exert considerable influence during the problem recognition and search stages and the least influence in the final decision stage for family activities such as choice of vacations and restaurants.

However, Kaur and Sing (2006) reported that children's influence was higher in the later stages of the decision-making process; that is, at the time of alternative evaluation, choice, and purchase for four purchases (holidays, adult and child clothing, and sandwich). Recently, Belch et al. (2005) proposed that since teenagers are high uses of the Internet, they have greater access to market information which could impact their influence in family decision-making. They found that teens who perceive themselves to be 'Internet mavens' (individuals who are relied upon more for providing information from the virtual marketplace) as well as their parents, believed that teens were more influential in all stages – initiation and information search, and alternative evaluation and final decision stages. Their influence was higher in the initiation and information search stages as compared to alternative evaluation and final decision stages (Tufte, 2003).

Similarly, McNeal and Yeh (2003) reported that in China, where most families have a single child, the child exerted considerable influence during all stages while buying products for family use. Beatty and Talpade (1994) discovered that teens' knowledge affects their perceived influence in the search for information in the decision process for some products such as the family stereo. The teens' financial status seems to allow them greater say in initiating self-purchases, but not in family purchases. Parents' dual income status allows adolescents greater influence in some family durable purchases, but this does not affect self purchases where there influence is substantial.

Kaur and Singh (2004) observed that children are individually active in initiating the idea to purchase a durable. In other stages of the decision-making process, they exhibit joint influence along with other members of the family. This implies that they provide support to the member exerting influence to increase pressure but do not wield much influence individually. Kids growing older younger (KGOY) have been the driving force for much of the debate surrounding the children's marketplace in the last decade. In effect the youth market has shifted with the implication that teenagers are new in terms of mindset (aspirations, values and experience.)

McNeal and Yeh (2003) also state that the number of parents who ask their children's opinions about products they are going to buy for the whole family has been steadily increasing over the years. While Chadha (1995) concluded that in the older age group household's sons and daughters emerge as key persons to introduce new products in the house.

METHODOLOGY

This study geographical coverage is federal capital territory (FCT) Abuja, Imo and Lagos states in Nigeria. The study population therefore, consists of families' ethnic groups in Nigeria, which are fairly represented in the study geographical area. However, the target population of the study was 1,200 families randomly drawn from the three areas of geographical coverage. The sample size of 300 for the study was arrived by employing Mac'odo (2002) Tara Yamani formula.

Structured and semi-structured research questionnaire were used in primary data collection, while the secondary information was generated from existing / available relevant literature. The generated data were presented using simple table frequencies and percentages, and the analysis of variance (ANOVA) statistical tool in Statistical Package for Social Sciences (SPSS) version 17.0 was used to test formulated hypotheses.

DATA PRESENTATION AND ANALYSIS

The data generated for this study is presented and analysed as follows:

Table 1: Children Influence on Family Purchase Decision Making

Ethnic Group	VGE			GE			AE			LE			VLE			TF	TS	MS
		%	S		%	S		%	S		%	S		%	S			
Abuja	4	4.6	20	8	9.2	32	17	19.5	51	23	26.4	46	35	40.2	35	87	184	2.11
Imo	6	6.3	30	11	12.6	44	21	24.1	63	26	29.9	52	31	35.6	31	95	220	2.32
Lagos	3	3.2	15	20	23.0	80	18	20.7	54	24	27.6	48	28	32.2	28	93	225	2.42
Grand Mean																		2.29

Source: Field Survey Data 2013

VGE = To a very great extent
GE = To a great extent
AE = To an extent
LE = To a low extent
VLE = To a very low extent
S = Scores
TS = Total Scores
MS = Mean Scores
TF = Total Frequency

Note: Means Scores < 3 = Low Extent
Means Scores 3 – 3.5 = Moderate Extent
Means Scores > 3.5 = High Extent

The information in table 1 above reveals that 87, 95, and 93 were the number of respondents from Abuja, Imo and Lagos respectively, and 4.6% of the Abuja respondents agreed that the children influence on family purchase decision making to a very great extent. Similarly, 6.3% of Imo and 3.2% of Lagos also agreed that children influence family purchase decision making to a very great extent. 40.2%, 35.6%, and 32.2% of Abuja, Imo and Lagos respondents respectively agreed that children influence family purchase decision making to a very low extent. The mean scores of 2.11, 3.32, and 2.24 for Abuja, Imo and Lagos are all greater than 3.5.

Test of Hypotheses 1
Ho$_1$: Children do not influence Family Purchase Decision Making for Durable Goods in Nigeria.

Table 1: ANOVA Result showing children influence in the Family Purchase Decision Making for Durable Goods in Nigeria

ANOVA

Source of Variation	Sum of Squares	df	Mean Square	F	Sig
Between Groups	216.095	2	108.048	8.342	.001
Within Groups	233.143	18	12.952		
Total	449.238	20			

Source: SPSS 17.0 output (based on field survey data 2013)

The ANOVA result in table 1 above shows that F-calculated of 8.342 > F-tabulated $_{(0.05, 2, 18)}$ = 3.55, and probability Value (PV) = 0.000 < 0.05 level of significance. Therefore the null hypothesis is rejected, and concluded **that children influence Family Purchase Decision Making for Durable Goods in Nigeria**.

Test of Hypotheses 2

Ho$_2$: There is no significant difference in the degree of children influence on Family Purchase Decision Making for Durable Goods in Nigeria.

Table 2: The degree of children Influence on Family Purchase Decision Making for Durable Goods
Source: field survey data 2013

Table 2 above, shows the degree of children influence on the family purchase decision making. The table reveals

S/n	Durable goods	Need Recognition				Information Search				Purchase Decision			
		Abuja	Imo	Lagos	Sum	Abuja	Imo	Lagos	Sum	Abuja	Imo	Lagos	Sum
1	Furniture	32	47	68	147	42	29	17	88	13	19	8	40
2	T/V	42	37	56	135	34	41	27	102	11	17	10	38
3	Automobile	31	46	54	131	38	27	27	92	18	22	12	52
4	Refrigerator	36	41	57	134	41	37	22	100	10	17	14	41
5	Kitchen ware	44	41	65	150	29	35	19	83	14	19	9	42
6	Computer	44	37	57	138	28	36	27	91	15	22	9	46
7	Mobile Phones	53	33	61	147	22	41	21	84	12	21	11	44
	Sum	282	282	418	**982**	234	246	160	**640**	93	137	73	**303**
	Percentage composition				51%				33%				16%

that children had the least influence 16% ($\dfrac{303}{1925} X 100$) at the Purchase decision stage. At Need recognition stage, children had 33% ($\dfrac{640}{1925} X 100$), and had the most influence on family purchase decision making for durable goods at the information search stage 51% ($\dfrac{982}{1925} X 100$). A look at this result shows that children had influence on family purchase decision of durable goods at all stages. The influence was least at purchase decision stage, and was most at the need recognition stage.

Table 3: ANOVA Result showing the degree of children Influence on Family Purchase Decision Making for Durable Goods

ANOVA

Source of variation	Sum of Squares	df	Mean Square	F	Sig
Between Groups	6.933	2	3.467	.030	.789
Within Groups	1402.400	12	116.867		
Total	1409.333	14	100.667		

Source: SPSS 17.0 output (based on field survey data 2013)

The ANOVA result in table 3 above shows that F-calculated of 0.030 < F-tabulated $_{(0.05,\ 2,\ 12)}$ = 3.89, and probability Value (PV) = 0.789 > 0.05 level of significance, therefore we accept the null hypothesis, and conclude that, **no significant difference exist in the degree of children influence on the Family Purchase Decision Making for Durable Goods in Nigeria.**

DISCUSSION OF FINDING AND CONCLUSION

This study which examined the influence of children on family purchase decision with respect to purchase of durable goods in Nigeria, revealed that children influence family purchase decision making for durable goods in Nigeria, and also that no significant difference exist in the degree of children's influence on the family purchase decision making for durable goods in Nigeria.

Interestingly, this study is consistent with that of Ekstrom (2003). They observe that the child rather than the parent in many instances are the primary decision-maker. This is because children have experience in decision-making with regard to simple impulse purchases as well as for more planned and longer-term purchases they concluded.

Similarly, Betty and Talpade (1994) agree with this study finding that children have more influence during the problem recognition and information search stage, but that this declines at the choice stage. However, on the family purchase decision making for durable goods findings revealed that children/adolescents were found to have less influence in the final stage of decision making. That is, the study indicated that children/adolescents influence most at the need recognition stage but least at the purchase decision stage. The finding which is consistent this study, could be attributed to the fact that most of the youths are not employed and so may not contribute financially to the family. This is in contrast to the study of Lee and Beatty (2000), who found that adolescents aged 12 – 19 exerted less influence relative to their parents' information search and negotiation stages but their influence actually increased during the outcome stage. They revealed that fathers are the highest initiators in the family purchase decision making for durable goods. These findings differ with the study of Belch et al. (2005), who posited that since teenagers are high users of the internet, they have greater access to market information which could impact in family decision making.

Kaur and Singh (2006) in a research carried out in India observed that children are individually active in initiating the idea to purchase a durable product. In other stages of the decision making process, they exhibit joint influence along with the other members of the family. Also Chadha (1995) in a study concluded that children emerge as key persons to introduce new products in the house. This study also revealed that the fathers influence the most at the final purchase decision making stage.

In concluding, it is worthy to note that knowledge of family purchasing influences/roles is important in developing appropriate marketing strategies. Marketers can also use this knowledge to identify the family member who plays what roles and at what stage of family purchase decision making, with a view of developing the appropriate communication strategy to evoke the desired response. There is need to adopt specific target marketing strategy for each category of the family as to achieve the desired result.

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ELECTION CRISES AND DEMOCRATIC CONSOLIDATION
IN NIGERIA SINCE 1999

Tolu Lawal

Department of Public Administration, Rufus Giwa Polytechnic,
OWO, ONDO STATE, NIGERIA, WEST-AFRICA.
Mobile: +2348037152971, E-mail: lawtolous@yahoo.com

ABSTRACT

Election has been a major factor in Nigeria's political development since independence, even in pre-independence era, it played significant role both at the national and regional levels. The beauty, as well as successes of democracy begins with free and fair elections. The latter also serves as route to sustainable development. Experience of democracies in developed world showed that election can be a veritable ingredient of democratic consolidation. However, in developing countries like Nigeria, most of the elections have been characterized by crises, which directly impede the sustenance of democracy and development. The paper explored and analyzed election crisis in Nigeria and its implication on democratic consolidation and development using content analysis method. The findings revealed that indicators of democratic consolidation are conspicuously absent in Nigeria. Conclusion reached by the paper is that democracy is yet to be consolidated in Nigeria, as it can only be possible in elections devoid of crises and or conducted in peaceful environment.

Key words: Crises, Democracy, Development, Election, Electoral Violence, Nigeria.

INTRODUCTION

In every modern society, election and democracy are classified as essential ingredients of development. Electoral politics began in Nigeria in the 1920's with the introduction of elective principles by the 1922 Clifford Constitution. This constitution was very symbolic as it served as a landmark in the electoral history of Nigeria. Nigerians were, for the first time allowed to exercise their political rights by voting their own candidates during elections (Ezera, 1960). Consequently, other constitution that emanated after 1922 improved on the elective principle. These preceding constitutions further expanded the scope of electoral participation.

There is no doubt that election has been a factor in Nigeria's political development since independence, even in pre-independence era, it played significant role both at the national and regional levels. But the fact remain that post-independence elections in Nigeria have a unique feature of crisis, which has gone a long way in affecting the democratic ideals and developmental ethos (Lawal, 2005).

In May, 1999, Nigeria made a successful post-democratic transition after almost two decades of military authoritarianism and the rule of impunity. The inauguration of the countries fourth republic thus marked a renewed sense of optimism and great expectation by Nigerian citizens and members of the international community. The much awaited democracy was therefore instituted, people had high hopes that this new wave of democratic politics in Nigeria would be characterized by the nurturing of a civic political culture that is conducive for rule of law, respect for human rights, consolidation of institutional transparency, and indeed the political accountability of the elected officials.

Nevertheless, the past fifteen years of democratic experimentation have been characterized by undemocratic tendencies, rather than consolidate the "hard earned" democracy and after elections. This unwarranted attitude (election crisis) has continued to affect generally, the political development and particularly, sustenance of democracy in Nigeria. This ugly trend and perhaps, the implication make this work inevitable.

OBJECTIVES OF THE STUDY

The paper is set to achieve the following objectives;
- To examine the role of election in democratic consolidation
- To assess the level of democratic consolidation in Nigeria's democracy
- To identity the causes of election crises in Nigeria
- To examine the effect of election crises on democracy and democratic consolidation
- To contribute to scholarship on the need for democratic consolidation in developing countries

- To make viable recommendations capable of solving election crises and facilitating democratic consolidation in Nigeria

CONCEPTUAL ANALYSIS

Some basic concepts that are relevant to this study are reviewed and analyzed for the purpose of clear understanding of the content to which these concepts are being put into use.

The Concept of Election

Election is a device for filling an office or post through choices made by a designated body of people called the electorate (Heywood, 1997). Elections are not just casting of votes to elect leaders, but also the active participation of the people in governance to ensure sustenance and survival of democracy. In this sense, it is not a ritual organized for people to queue up every four years to cast their votes but also a veritable process of changing leadership through peaceful means for improved socio-economic policies that benefit the people (LEMT, 2003). Ajayi (2005) maintains that election is a process through which suitable candidates are chosen for public offices through voting. It is a method of making choices by voting. He identifies two forms of election; direct and indirect election. Direct election is a method by which the electorates vote directly for candidates of their choice, while indirect election serves as a means by which representatives are indirectly elected through Electoral College.

According to Key (1960), election establishes a framework for change. It provides continuity and a sense of political community, for they are links in a chain that bind one generation of voters to the other. Every four years the voters come together in an act of decision that is influenced by the past and present, but designed to shape the future.

Lawal (2003) argues that election has become a necessity in liberal democracies. He describes election as basically a democratic method. However, he opines that not all elections are democratic, according to him, undemocratic elections are capable of causing electoral crisis and unstable democratic system. Flowing from the foregoing, elections are elections when they freely and fairly conducted. In any democratic arrangement, elections are supposed to be free and fair, it is free and fair when it is conducted under peaceful and orderly atmosphere. This kind of election legitimizes regime and consolidates democracy. The implication of this is that there cannot be true democracy as long as free and fair elections remain elusive. This is because election malpractices bring about election crises and democracy cannot thrive in an environment bedeviled with crises.

The Concept of Election Crises

Longman Dictionary of contemporary English defines crisis as a situation in which there are a lot of problems that must be dealt with quickly so that the situation does not get worse or more dangerous (Longman, 2003). Election crises can therefore be perceived as a situation in which there are a lot of problems emanating from the conduct of elections that must be dealt with quickly so that the situation does not lead to political and or democratic instability. These problems may come in form of election malpractice, intimidation of voters, attack of voters by party supporters, hijacking of ballot boxes, rigging of election results, ballot stuffing, e.t.c. All these problems are capable of causing election crises and crises emanating from elections are capable of truncating democracy.

The Concept of Democracy

Democracy may be described as a system of government under which the people exercise political power, either directly or through their representative periodically elected by themselves (Appadorai, 1975). Democracy ensures fundamental human rights, respect for the rule of law, equality of persons, popular participation, competition, multiparty system as well as the machinery for political and economic development of a society (Adeyemo, 2008).

There is a general but specialized tendency to see democracy only in terms of a land of government rather than the totality of social relations and a system of values. In this way, it is defined of government in class society representing, in reality or in fiction, the supremacy of many over the few through the mechanisms of state. This conception of democracy as a mode of rule narrowly distinguishes it from other types of government where small minorities dominate the majority. This is for example, the case of theocracy, where only the priest rule, monarch, where only royal family or dynasty rules, aristocracy, where only an elite usually of landed property rules, oligarchy, where a few families rule, and of course, military dictatorship, where an omnipotent command of the armed forces rules (Bako, 1997).

The essence and major objectives of democracy is the creation of good condition for individuals and groups to have their fullest freedom and right to develop their actual and potential capabilities to realize whatever their stated goals are.

Ajayi (1998) opines that any claim to democracy by any regime or state must essentially embrace popular participation, competitive choice, the enjoyment of civil and political liberties by the citizenry in real terms, and the accountability of the leadership. The participatory opportunity offered the citizenry in the choice and selection through periodic elections of credible representatives confers inestimable avenue for psychological

self-satisfaction and self-fulfillment. This is so as the electorate who participate in the electoral process that eventually leads to the enthronement of a government and the political leadership can therefore lay claim to the government as their rather than being an imposition. Consequently, the mandate to govern emanates from them, while at the same time, they act as legitimizers of the governmental system. The government is seen as legitimate and therefore not illegal.

Democracy is a vehicle of human development, and without it, there can be no development. The western world has developed to its present level not simply because of their superior capacity to develop science and technology, but their adoption of democracy. Our underdevelopment in Nigeria is largely a reflection of the denial of democracy in the country. For the Western world to achieve democracy in the form of a vibrant and dynamic capitalism, they had developed certain institutional mechanisms which include the competitive party system, impartial electoral system independent judiciary free press, free and peaceful elections e.t.c.

The Concept of Democratic Consolidation

A democracy is said to be consolidated when the people come to accept that a democratic regime is the most appropriate for the society, better than any other realistic alternative they can imagine (Diamond, 1999). According to Beethan (1999) believes that democracy can best be said to be consolidated when we have good reason to believe that it is capable of withstanding pressure or shock without abandoning the electoral process or the political freedom on which it depends including those of dissent and opposition.

The process of consolidation begins with the inauguration of a new regime after a free and fair electoral process (Oquaye, 2000). It is a longer and more difficult process than the transition itself. To scholars, it means an identifiable phase in the process of transition from authoritarian to democratic systems that are critical to the establishment of a stable, institutional and lasting democracy (Beetham, 1994, Diamond 1989). Holistically, democracy can be said to be consolidated when its probability of breakdown is very low or on the other way round, that is, its probability of survival is very high. In other words democratic consolidation reaches a closure when all relevant observers, including major political actors, the general public and the academic experts expect the democratic regime to last into a foreseeable future, thereby having the capacity to build dams against a reverse wave (Baker, 2000).

Democratic consolidation is meant to describe the challenge of making new democracies secure, of extending their life expectancy beyond the short-term, of making them immune against the threat of authoritarian repression (Beetham, 1994). The inference from Beetham's definition of democratic consolidation reveals the starting point of a regime to be consolidated. Any discussion about democratic consolidation presupposes that a democratic regime exists from the beginning to the end of the process. Democracy is therefore the indispensable starting point in the form of a consolidating democracy, and its hopeful outcome in form of a consolidated democracy. That is, democratic consolidation cannot set in before a democratic transition has been successfully completed.

Fundamentally, democracy is consolidated when a government that has itself been elected in a free and fair contest is defeated at a subsequent election and accepts the results. The point here is that, it is not winning elections that matters, but loosing it and accepting the verdict, because this demonstrates that powerful players and their supporters are prepared to put respect into the rules of the game above the continuation of their power.

Theoretical Framework

This study is essentially the effect of election crises on democratic consolidation. It examines why and how election crises affect the growth and development of democracy. Based on this, the study will be situated within the ambit of two theories, the group theory and frustration aggression theory.

Group theory explains the importance of group in governmental process, and election process is also part of this governmental process. Election crises which is the major focus of this paper is being carried out by group(s) either political party(s) or supporters of such parties, party thugs, voters, politicians e.t.c. Essentially, election crises revolves around group(s). Frustration aggression theory tends to explain the reasons behind the aggressive nature of people in certain situation. In line with this paper, election crisis is a manifestation of people's aggression resulting from election fraud. Therefore, the two theories are capable of giving deeper and scientific understanding of this study.

Bentley (1975) in his analysis says it is the interest which leads to the organization of groups. This fundamental presupposition is that achievement could be made fast by combination of effort through the formation and existence of a group rather than individual and that, group behaviour can influence things such as policies or decision rather than individual. It is easier for group to catalyze action or spur people into action than individual. Election crises are an action that is mostly influenced and carried out by group(s). For instance, group of voters, party supporters, party thugs, party members e.t.c are all groups that are capable of causing election crises. It is reasonable to note that election crises are mostly carried out to achieve some interests that are paramount to the groups or their sponsors.

Frustration aggression theory believes that the primary source of the human capacity for crisis of violence is the frustration aggression mechanisms. The anger induced by frustration is a motivating force that disposes men to aggression irrespective of its instrumentalities. If frustration is sufficiently prolonged or sharply

felt, aggression is quickly likely to occur (Dugan, 2004). Men who are frustrated have an innate disposition to do violence or cause crisis to its source in proportion to the intensity of their frustration.

According to Gur (1970), the potential for collective violence varies strongly with the intensity and scope of relative deprivation. This relative deprivation (frustration) predicts collective crisis or violence by social groups. When people perceive that they are being prevented from achieving a goal, their frustration is likely to turn to aggression. The closer one gets a goal, the greater the excitement and expectation of the pleasure and vice versa. Unexpected occurrence of the frustration also increases the likelihood of aggression.

From the foregoing, it is understood that election crises do not just happen without any reasons leading to its occurrence. It manifests when group(s) is frustrated. The frustration may be in different forms, for instance, voters may be frustrated when their votes are stolen and or when they are prevented from voting for candidate of their choice in an election, or still, when their electoral rights are not respected by the appropriate authority. Political party may also be frustrated when mandate given to it by the electorate is stolen and or prevented from achieving its electoral goals e.t.c. This frustration easily leads to anger and tension, thereby leading to crisis. Most of the election crises that happened in Nigeria between 1960s and 2014 can be traced to the aforementioned reasons. This frameworks will therefore enhance scientific understanding and stand as operational tools to further explain the circumstances that surrounded election crises between 1999 and 2014 in Nigeria and its implication on democratic consolidation.

Election Crises in Nigeria: An Examination

Nigerian politics has since independence, been characterized by thuggery and crisis, since election has become the only means of assuming political power in a democracy, consequently, electoral politics in Nigeria manifest in acrimony, assault, assassination, intimidation, harassment, maiming and killings (Lawal, 2007).

Since independence, most of the general elections conducted so far in Nigeria, such as 1964/1965, 1979, 1983, 1993, 2007 and 2011 have been characterized by crises. Such crisis manifested in 1964/1965, which eventually led to the termination of the first republic. Also, in 1983, the crisis was so much especially in the South Western Nigeria (old Ondo and Oyo States) to the extent that the military had to intervene, and that also marked the end of the second republic (Arowolo and Lawal, 2009).

The trend of electoral crisis varies according to the government in power in 1993, the president, Aliyu Babangida conducted a free, fair and peaceful election, but due to sit-tight tendency of the military ruler, he annulled the election, which led to enormous outburst and violent protest by Nigerians. This culture of violence and crisis has not political behaviour, it has also been one of the country's political behaviour, it has also been one of the potent causes of political decadence and underdevelopment in Nigeria.

From 1999, with the passing of new federal constitution, Nigeria moved to civilian rule under democratic elections in 1999, 2003, 2007 and 2011. However, all of these elections were damaged by widespread electoral crises. By many accounts, these elections were far from being free and fair. The various incidences of election crises witnessed in Nigeria were products of a political process, where candidates will always want to win, but not ready to accept defeat. Losers in an election who see themselves to have been thwarted from reaching an important goal to which they entitled, usually become frustrated and aggrieved at the winner and are ready to inflict injury on or death to persons and destruction to properties (Abegunde, 2007).

Both Nigeria's federal and state elections were marred by serious incidents of crises. The scale of the crises questioned the credibility of these elections. In 2003, at least one hundred people were killed and many injured during federal and state elections in Nigeria. In 2007, over 300 people were killed in the course of presidential and gubernatorial elections (Paul and Pedro, 2008). In July 1st, 2005, two persons were killed in Gombi Local Government Area of Adamawa State when supporters of the Peoples Democratic Party (PDP) and the All Nigeria Peoples Party (ANPP) clashed in the aftermath of a bye-election as a result of electoral manipulation leveled against the PDP by supporters of the ANPP. Also, in October 14th and 15th, 2005, two persons were killed in the wake of the PDP's Ward and Local Government Congresses in Edo-State. In 2007, there were various electoral crises across the nation, these include crisis in Ondo State as a result of protest by the people against the result of gubernatorial election, the same thing also happened in Ekiti State. The crisis in Oyo and Osun States was not different from that of Ondo and Ekiti States. In Sokoto State, there was crisis that emanated from disputed gubernatorial election result. In Kogi State, It was a theatre of war e.t.c. The 2011 general elections in Nigeria was not free from crisis. These strategies of causing electoral crisis are used predominantly by the incumbent party and are deployed most vigorously where the electoral contest is expected to be particularly tight. Although, electoral crises has not been the extensive preserve of the ruling party. Candidates and supporters of the larger opposition parties also carryout the acts of violence in the pursuit of electoral victory. Furthermore, whenever crisis is instigated by supporters of one party whether ruling or the opposition their opponent usually don't hesitate to respond on land. (Lawal, 2014).

Election Crises and Democratic Consolidation: The Parallel Relationship

An election is one of the key pillars of democracy. It is the means of translating the critical element of equality of citizens in democratic societies into relating through 'one person, one vote', in the constitution of the elective offices of the state. However, this is so only, if elections are free, fair and credible (Alemika, 2011).

Electoral crisis is the employment of force by political parties or their supporters to intimidate opponents protest against action contrary to electoral law and threat to a democratic regime and has often accounted for seizure of political power by the use of undemocratic means, while democratic consolidation is perceived to be a situation, which democracy has become irreversible, a situation, which political actors and citizens abide by the rules and norms of democratic procedures and only seek to resolve their differences by constitutional means. This aptly describes the ethos and values of democracy. Based on the foregoing, it is reasonable to note that electoral crisis and democratic consolidation are two parallel lines that cannot meet, they are contrapuntal to each other. Democracy as understood can only be consolidated in a peaceful political atmosphere devoid of rancor and crisis of any kind.

It is however unfortunate that the incessant crises and conflict in Nigeria politics are derived on the missing link between democratic consolidation and electoral processes, the electoral processes meant to complement democratic ethos in order to consolidate democracy have been essentially toyed with. The electoral processes have been subjected to various manipulations resulting to crisis such that the emerged leaders have failed to command the support, obedience and cooperation of the people. Such leaders cannot but pave way for electoral crises, which consequently obstruct democratic consolidation.

Democracy is all about people, the power of the people to determine whom their leaders will be lies with them. It is sacrosanct and can only be expressed in an atmosphere devoid of conflicts, threats and crises.

Causes of Election Crises in Nigeria

Winners take all syndrome: politicians and political parties go about their electioneering campaign in a way and manner that suggest that loosing is an abomination (Lawal, 2010). This is more so because politicians that loose at the polls are usually shut out from power and influence by the party in power. This practice of politics of exclusion and its implications propel the resolve of politicians to employ and means to be victorious at the polls.

Sit tight syndrome: This has become a phenomenon in Nigerian politics. This is a situation in which an individual tries to hold on to power for personal aggrandizement or gains. In an attempt to hold on to power, leaders often create crises during election. They organize political thugs, hooligans to sing their praises, intimidate opponents and kill them if they become intransigent (Oyetope, 2003).

Poverty and unemployment: A vast majority of the populace is poor and unemployed, so, some of them cannot easily resist the temptation to engage in act that can cause crises for a fee.

Pre-bendal politics: In Nigeria, politics is conceived as an investment. The politicians having invested colossally on political activities coupled with the existing system of winner takes all would want to win at all cost. The need to cause crisis to rig or destabilize election becomes inevitable, especially when such politicians are not popular. Others are; refusal to accept electoral defeat in good faith, disenfranchisement inadequate, voting materials at poll, absence of issue-oriented electioneering campaigns, electoral fraud, such as rigging before, during and after voting (Lawal, 2007).

Effects of Election Crises on Democratic Consolidation

Election crises have been a cog in the wheel of democratic consolidation in Nigeria since 1999. Democracy would be meaningless and its consolidation will also be hampered if the individual did not have the right to choose among competing candidates for positions of government leadership. The manipulations and subsequent crises that bedeviled the 1999, 2003, 2007 and 2011 elections are capable of truncating democratic consolidation in Nigeria. Election in this regard cannot guarantee support, acceptability and cooperation that are essential to elicit democratic consolidation.

Election crises retard political, economic and social growth and development. It causes insecurity of lives and properties, many people have died, while some have lost valuable properties in the course of election crises. Democracy, when consolidated guarantee security, but consolidation of democracy cannot thrive in violent environment. Election crisis is capable of creating conflict in the society among the people. It can cause inter-party conflict, inter-group conflict and intra-group conflict, it can lead to breakdown of law and order, which are capable of affecting the consolidation of democracy.

Election crises destroy democracy and its virtues, which has negative consequence on democratic consolidation. Democracy cannot thrive in crises let alone consolidating it in crises.

CONCLUSION

Efforts have been made in this paper to discuss election crises and democratic consolidation in Nigeria since 1999. It was evident that crises have enveloped our electoral processes since 1999, the elections conducted within these periods were marked with cases of electoral fraud and marred with cases of crises. Unfortunately, the hard earned democracy since 1999 had refused to be consolidated, rather it had been subjected to mockery and violence. The politicians who are in power have refused to understand the game of democracy as a winning and loosing game. They manipulate election results at will, therefore, elections becomes subject of crises, which further inhibits democratic consolidation. It has been demonstrated in this study that well organized, credible

and acceptable election results contribute significantly to democratic consolidation and its sustainability by building confidence and trust into the democratic process. Based on this, the paper makes the following suggestions.

The constitution should be amended and Electoral Act reviewed to make Independent National Electoral Commission (INEC) truly independent and not a tool in the hands of the president. The electoral body must indeed be impartial in the conduct and organization of elections. This will engender the confidence of all parties in electoral competition.

The commission should also make adequate and timely provision of electoral materials needed for the conduct of elections so as to prevent eligible voters from disenfranchisement. There must be constant review of voters register to ensure that those who are qualified to vote are allowed to do so in order to avoid unnecessary crises during voting. The body must also make proper recruitment of the requisite caliber of electoral personnel with adequate training and timely orientation, as this in a way minimize incidences of partisanship and outright connivance of officials in the perpetration of electoral irregularities.

The Nigerian political class must also stop seeing winning an election as a matter of life and death, where the incumbent would use any means possible to ensure that he retains power, while the opponent would also use the same means to unseat the incumbent. Political education of the voters is very important for a sustainable democratic consolidation. INEC, National Orientation Agency (NOA) civil society organizations and other relevant agencies should step up public enlightenment on the evil of electoral crises and its effects on democracy.

Politicians should imbibe the spirit of tolerance, maturity and accommodation. There is need to embrace dialogue as a veritable tool for resolving conflict. Electoral defeat should be accepted without rancor and bitterness.

All perpetrators of electoral crises, regardless of their political affiliation must be punished to serve as deterrence to others.

Government should create employment opportunities so as to reduce the high level of poverty in Nigerian society.

Finally, since democracy is about ensuring good life and peaceful co-existence, there is need for us to embrace peace and reject crises during election so as to consolidate the hard earned democracy.

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PRELIMINARY STUDIES ON SOCIAL AND ENVIRONMENTAL ISSUES OF CHARCOAL PRODUCTION IN NORTHERN YOBE.
YOBE STATE, NIGERIA.

IBRAHIM ALKALI

Department of Sociology, Yobe State University, Damaturu,
Yobe State, Nigeria.

ABSTRACT

Northern Yobe forests are excessively threatened by increased charcoal production fuelled by increased demand crucially in Damaturu town which consumes nearly 65% of all the charcoal produced in the state. The study was conducted in NorthernYobe to investigate charcoal production as a livelihood support system and the lessons that can be learnt to ensure sustainable forest management. Fifty charcoal producers were randomly selected and interviewed using semi structured questionnaires. Focus group discussions were also held with charcoal producers and users. Charcoal production was an important economic activity in the study area involving mostly men (80%) as a search for livelihood and family support. Charcoal production was ranked as the second major occupation in the area. However, understanding how and why benefits from the charcoal trade are distributed among different groups of actors in the commodity chain requires an understanding of the local histories and social relationships in which the trade is embedded. The activity also ranked third in terms of income generation. Deforestation, bush burning and nutrient depletion were identified as the most critical environmental effects of charcoal production in the study area. 67% of charcoal producers and consumers were willing to adopt more efficient energy sources but lacked the means to do so. It was concluded that charcoal production will continue to be an economic activity in the study area into the foreseeable future hence the need for sustainable methods of production. It is imperative to look at charcoal burning as a livelihood support system. What needs to be done is to find ways to reduce the rate of exploitation of forest trees for charcoal production, while at the same time providing a sustainable livelihood system for the people who depend on these resources.

Keywords**:** Charcoal production, Environment, Forest, Fuel wood, Northern Yobe, Livelihood

INTRODUCTION

Charcoal production is one of the most important economic activities in most rural areas of Northern Yobe, and an important source of energy in the state capital. Energy demand in Damaturu has increased significantly in recent times as a result of mass exodus from the satellite towns, population increase and urbanization due to the security situation in the state, adding that, the increased demand is, however, more pronounced in the consumption of wood fuel, particularly wood charcoal. Fuel wood consumption in Nigeria is estimated to be 118.8 million m 3 for firewood and 15.3 million tons for charcoal by 2030 (Dr Kalli, 2000).

Northern Yobe is one of the top states in Nigeria in terms of charcoal consumption. According to a report published by the Yobe state ministry of environment (2006), the number one energy supply in Damaturu is based on biomass, mainly firewood and charcoal (64%), petroleum (14%) and electricity (26%). Fuel wood and charcoal provide energy for domestic cooking and heating (Edjekumhene and BrewHammond, 2001; Somuah et al, 2010). Rural and cottage industries also rely on energy from fuel wood and charcoal. Statistics indicate that close to 90% of households in Yobe use firewood or charcoal for cooking (Derkyi et al, 2011). About 49% of the population in Yobe live in rural areas where biomass constitutes the dominant source of energy for household use. Most of the traditional biomass energy sources continue to dominate the rural energy supply, now and in the foreseeable future. Biomass energy sources in Northern Yobe include wood fuel (firewood and charcoal), wood residues and crop residues. Wood fuels also serve as a source of livelihood for most rural people and the increasing number of urban dwellers engaged in the charcoal and fuel wood trade. Woody biomass is part and parcel of rural livelihood (Daily trust Newspaper 21/06/2009 p.22). Traditional economies can easily be defined as biomass economies. Rural livelihoods are intricately linked to the natural environment and this makes the charcoal problem a delicate one to solve. The detrimental effects of charcoal production on the environment have raised a growing concern among policy makers, environmentalists and local authorities responsible for the management of forest resources. This concern is against the backdrop that ninety percent of the wood fuel supply in Northern Yobe is derived directly from the natural forest (Sekyere and Okyere,2007). Charcoal production as practiced in NorthernYobe contributes greatly to the deterioration of the

environment through deforestation and the associated harmful environmental, health and social effects with the use of fossil fuel and traditional biomass energy such as charcoal has led to growing interest in the search for alternate cleaner source of energy nationally (Augustine, 2011) as well as efforts to popularize efficient energy devises, namely Kerosene stoves.

Specifically, the study seeks to provide answers to the following questions: Why do charcoal producers engage in charcoal production? What are the environmental consequences of charcoal production in the study area? What is the preference of charcoal producers and users for more efficient and modern energy sources, and are charcoal producers and users willing to patronize alternate cleaner energy sources? Answers to these questions will provide insight into how to deal with the environmental problems presented by charcoal production, which will ensure the sustainable management of the environment and particularly of the forest resources.

STUDY AREA

The study was conducted in Geidam (Kimeri, Kaduwwa, Hukumandi), Yusufari (Sunomari, Bulatura, Tulotulo), and Yunusari (Dumbol, Ladi, Dilala, Kalgi) located in the northern Yobe. The area encompasses the semi-arid region of Yobe State, located on latitude 11°45' N to latitude 13°30'N and longitude 9°30' E and 12°30'E. The eastern boundary is immediate to Borno State, to the west is Jigawa and Bauchi States, and to the north boundary is the international border with Niger Republic which is the main study area. Vegetations are characterized by tall grasses interspersed sparsely with short drought resistant trees. Agriculture is the main economic activity in the area. The total land area is approximately 11,127km, of which about 7 percent is forest reserve. The population density is about 28 persons/km Economic trees such as Gum Arabic (Acoria Senegalensis), Prosopis Africana (Iron Tree), Moringa Oleifera (Moringa), Neem (Azadgirata Indiea) and Cotton abounds in the area. The district experiences a monomodal rainfall pattern usually between May and October and a long dry season between November and April. The result of climate parameters of rainfall and temperature has shown that rainfall has increased to 1,000mm and above while temperature has fallen to as low as 20oC. Dry, hazy and windy harmattan conditions set in from November to February, followed by a fairly warm season with maximum temperatures well over 41 degrees lasting from March to May. The long dry season is characterized by persistent bushfires and drying up of many natural water bodies. Some communities (Bukarti, Bula tura and Kafeya) were purposively sampled for the study because of their proximity to each other and the volume of charcoal produced in these communities.

MATERIALS AND METHOD

A total of 70 charcoal producers took part in the survey. Face-to-face interviews were conducted with each respondent using a semi-structured questionnaire containing both open and close ended questions. Focus group discussions were also held with respondents made up of both charcoal producers and users using a checklist. Data collection and analysis were carried out simultaneously in the focus group meetings. Charcoal producers and users ranked the variables being studied using pair wise ranking. The rest of the data were coded and analyzed with the aid of the Statistical Package for the Social Sciences (SPSS) computer software and the results presented in the form of percentages and tables.

RESULTS AND DISCUSSION

4.1 Charcoal production and consumption
Most people (68.34%) involved in Charcoal making are between ages 25-39. This is not surprising since this is generally the most active age group in human life especially that the activity is an energy exacting one. The proportion of male to female is not same (88.56: 11.44%, M:F) Most are single (63.05%) in the whole population although the proportion varies from village to village. The trade is mostly Involving people with no education, Js 3 drop outs and SS3/School certificate holders (30.05%, 22.38% and 24.00%) respectively. 84% of Charcoal makers are Farmers. Again it is not surprising because the primary occupation of the people of Yobe state is farming. The charcoal making may rather be the secondary occupation during off farm seasons or extra time. This is similar to practices in other Parts of the country as reported in Nasarawa (Bhattarai 1998).

Table 1. Reasons for engaging in charcoal production.

Villages	Reasons		
	Means of income	Family trade	Business opporturnity
Kimeri	68.8%	14%	17.2%
Hukumandi	73%	-	27%
Dumbol	71%	11.6	17.4%
Ladi	86%	-	14%
Bula Tura	58%	-	42%
Tulo-Tulo	93.9%	-	6.1%

The above table shows that most people are involved in charcoal production as a means of generating income.

The respondents show they have low level of knowledge about the problems associated with deforestation. This may not be unconnected with their poor level of education since a large proportion of them are those who have not attended any school to school certificate holders and like in most rural areas where charcoal is produced, the activity had a social and economic benefit on the producing community by opening up the rural communities to trade and commerce with traders from other towns and cities.

All the charcoal producers interviewed did not replant trees after cutting.

Generally, trees considered to have spiritual benefits as well as economic trees were not cut down for charcoal production. The most preferred tree species were those which produced charcoal which was hard and burned slowly.

Table 2 Types of trees used for Charcoal Production in various villages in northern Yobe state.

TREE TYPE		Villages					
Local Name	Scientific Name						
		B/Tura	Bukart	Ladi	T/Tulo	Hukumandi	Dumbol
Karo	(AcoriaSenegalensis)	+	+	+	+	+	+
Zogyale	Moringa	-	-	+	+	+	+
Kirya	Prosopis Africana	+	+	+	+	+	+
Ganye	Neem	-	+	-	+	-	+
Auduga	Cotton	+	-	-	+	-	+
Doruwa	Parkia Bioglobosa	-	+	-	-	+	-

+=Used   - =Not Used

Kirya, Prosopis Africana and Karo Acoria Senegalensis are used by all villages for the production of charcoal, while other species are used only to different degrees. Prosopis Africana and Acoria Senegalensis are widely used because they are hardwoods as interaction with the producers reveal because hardwoods give higher charcoal yield than soft woods. Prosopis is used all over the tropics and hardwoods are likewise the wood of choice all over the world wherever Charcoal is produced (Bhattarai 1998, Essiet 2009).

Two types of bags are used for sale of Charcoal in all villages, but the price varies. Interaction with producers shows that prices are determined by Bargain and Markets. Hukumandi with the highest range of prices has Damaturu, the statel capital of Yobe state as its main market. Charcoal produced here is usually loaded for delivery to Damaturu. Nayi Nawa with the least price range on the other hand is made of producers who sell to middle men, who retail it.

Firewood and charcoal were the commonest source of wood energy in the study area, used by 70% of respondents for heating and cooking compared to 20% who used charcoal. The result agrees with Mal. Ibrahim

(2014), who reported that about 84% of households in rural use firewood as their source of fuel with a further 13% depending on charcoal as their fuel of choice for cooking. He added that electricity, kerosene and LPG, together account for less than 3% of consumption and are therefore relatively insignificant. Arku et al (2008) also indicate that approximately 80% of households in low income neighbour hoods of Northern Yobe use charcoal and/or wood as their primary source of energy. In Borno State, 85% of rural household energy is from fuel wood (firewood) and only 5% from charcoal (O'Keefe et al. 1984), underscoring the key role of firewood in the rural economy.

Table 3 Knowledge of environmental issues were summarised in the responses on deforestation.

Villages	Problems		
	Desertification	Global Warming	Soil Degradation
Ladi	9.62	13.54	9.32
Dumbol	3.33	4.74	16.84
Bula Tura	24.65	----	29.66
Tulo-tulo	23.42	----	16.27
Kimeri	19.81	2.21	34.82
Dilala	31.33	3.10	5.22

The respondents show they have low level of knowledge about the problems associated with deforestation. This may not be unconnected with their poor level of education since a large proportion of them are those who have not attended any school to school certificate holders.

SOCIAL AND ENVIROMENTAL IMPLICATIONS

The social and environmental implications of wood fuel use extend well beyond the commonly cited issue of forest cover. Focusing only on the negative attributes of particular household fuels can lead to incoherent policies that are unlikely to succeed. This is evident in Yobe state, where attempts to regulate the charcoal production, have led to the widespread criminalization of the trade. Charcoal is the principal wood fuel in urban areas of many states in Nigeria, including Yobe. There are a number of reasons why people in dense urban settlements favor charcoal over wood: it has a higher energy density, it burns more cleanly (which reduces exposure to harmful pollutants), and it is easier to transport, handle, and store (FAO, 1983; van der Plas, 1995). Charcoal can be purchased in small amounts, making it flexible and affordable even for the poorest households.

Similarly, charcoal-burning stoves are quite inexpensive, making it a more attractive fuel for the urban poor than other fuels available in urban markets such as LPG and electricity. Kerosene, which is, to some extent, a substitute fuel for charcoal, is subject to price volatility. In Yobe state, charcoal has shown much more price stability. Price stability is an important aspect of fuel choice among the urban poor. The price of charcoal has declined in real terms since a climate-induced price spike in 2004-2011. By the end of 2014, charcoal was 20% cheaper than kerosene in energy terms. Finally, many people favour charcoal because it is considered a more modern fuel than wood, and is thus a kind of status symbol. In Yobe, all of these factors play a role (Hosier, 1985; Ministry of Energy, 2002).

RECOMMENDATIONS

It is imperative to look at charcoal burning as a livelihood support system which requires both public and private sector support. Sustainable methods of production are called for. What needs to be done is to find ways to reduce the rate of deforestation and degradation of the environment arising from the exploitation of the forest resources, especially woody biomass.

Plantation forestry is an alternative source of wood to meet the increasing demand for wood energy in wood deficient areas such as the savanna woodlands of Northern Yobe. This is because plantation species are normally selected for their greater wood yields and quality attributes.

The provision of energy efficient stoves is one of the measures to ensure that less wood energy is consumed. The current three stone stove as well as the traditional coal pot used by most firewood and charcoal users is highly energy inefficient and efforts to develop energy efficient stoves and appliances will reduce wood consumption in both rural and urban areas.

Provision of alternative livelihood systems for rural people will reduce the dependence on the forest. Provision of irrigation facilities to facilitate dry season vegetable farming for instance will reduce women's participation in charcoal production. Credit facilities to the womenfolk who are the main producers of charcoal to start their own businesses will also help to reduce dependence on the forest resources.

Enforcement of byelaws on illegal logging and indiscriminate felling of trees will further help to reduce the rate of deforestation and forest tree removal. It was noted that forest reserves in the district were under the threat of exploitation from chain saw operators and loggers who cut down trees indiscriminately to produce charcoal. Enforcement of bye laws will strengthen efforts to sustainably manage the forest resources.

Finally, regulation of the charcoal trade in Yobe is needed to help manage the forest resources on a sustainable basis. The charcoal trade is an informal but very significant business in Northern Yobe. State regulation of the business in terms of granting of permits to charcoal merchants will regularize the market and bring some level of control into the charcoal trade.

CONCLUSION

Charcoal production though new in Northern Yobe is now an additional means of income for the low income and low education segment of the people of the area as shown in this study. However there is a poor knowledge of key environmental issues of degradation and pollution by chemical constituents of wood smoke already elaborated in literature. Though visit by Forestry officers who should be the basic educators is acknowledge, it appears their impact in educating the producers needs to be upgraded to fill the knowledge gap of the producers in other to optimize economic benefit with care to maintain a healthy environment and population for now and the future.

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A COMPARATIVE STUDY ON REFLECTIVE THINKING IN VARIOUS EFL CONTEXTS

Akın GÜRBÜZ

Gaziantep University, School of Foreign Languages, Turkey
+90 532 454 3294, E-mail: akingurbuz@gantep.edu.tr

ABSTRACT

Reflective thinking is described as active, persistent, and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it and the further conclusion to which it tends (Dewey, 1993). In this respect, the present study focuses on EFL teachers' reflective thinking skills at different institutions (*primary, secondary* and *university*). The study further investigates the issue in terms of genders and experience differences. To measure four major constructs of reflective thinking: (a) *ability to self-assess*, (b) *awareness of how one learns* and (c) *developing lifelong learning skills* and (d) *belief about self and self-efficacy*, a Reflective Thinking Questionnaire (Choy & Oo, 2012) has been conducted to fifty teachers from different institutions. In addition to the questionnaire, a semi-structured interview has been carried out with six participant teachers through email exchange to explore the issue in depth and enhance the reliability of the questionnaire. Although the study suggested no statistically significant disparity for institutional differences, it presented a significant difference between male and female teachers in terms of reflective thinking on their teaching practices.

Key words**:** Reflective thinking, self-assess, life-long learning, self-efficacy, teacher education.

A Comparative Study on Reflective Thinking in Various EFL Contexts

In one of his studies, Zeichner (2010) summarizes the recent changes and developments in teacher education as a shift from a focus on training teachers to perform certain behaviors, to more fully educating teachers, to understand the reasons and rationales associated with different practices and with developing teachers' capacities to make intelligent decisions about how to act based on their carefully developed educational goals, on the contexts in which they were working, and on the learning needs of their students. Richards & Lochkart (1996) assert that although language teaching has traditionally been described in terms of what teachers do, that is the actions and behaviors which teachers carry out in the classroom and the effects of these on learners, it involves also such multidimensional tasks as cognitive, affective and behavioral tasks. They further clam that what teachers do is a reflection of what they know and believe, and that teacher knowledge and *teacher thinking* provide the underlying framework or schema which guides the teacher's classroom actions.

Freeman (2002) places reflective practice into the central pillar of teacher education supposing that their mental lives are storied or narrative webs of past and present experience and their knowledge is reflective of their position in the activity of teaching. Borg (2003) states that teachers have cognition about all aspects of their works. The extent to which teachers can implement instruction corresponding with their cognitions is substantially determined by teacher cognitions and practices on a part informing and contextual factors. (Tabachnick & Zeichner 1986 cited in Zeichner, 1990).

According to Lucas & Tan (2006) there is an increasing emphasis on the need for reflection as an integral part of learning to learn within the undergraduate education of teachers. It is expected from students to reflect as a part of their subject-based studies, but also to reflect on their learning and development of skills, for example, through the maintenance of a personal development portfolio. When they graduate and enter professional and managerial life, they are supposed to act as reflective practitioners and to exercise professional judgment. The primary concern of this study is to investigate the utilization of reflective thinking by teachers practicing with different age groups at various institutions (*primary, secondary and university education*) in Turkey. To pursue the following research questions the reflective teaching questionnaire Choy & Oo (2012), the topics of which were created based on a study by Hamilton (2005) on the development of reflective thinking, was used and a semi-structured interview conducted:

(a) Do the teachers teaching at various institutions show significant difference in terms of reflective thinking?
(b) Is there a significance of reflective thinking in terms of gender difference?
(c) Does teaching experience play a significant role in reflective thinking?

LITERATURE REVIEW

Teacher's education has been into a transition phase since the 1970s' first realization of *teacher's mental lives* or as Freeman (2002) delineated as *the hidden side* of the work. Further, Borg (2003), defines a broader umbrella term for teacher belief and teacher perception terms as *teacher cognition*. Summarizing the studies carried out on in-service teacher cognitions, he comments on the diversity of the work and how it is based on different conceptual frameworks and states that these cognitions might be influenced by internal and external factors, as a relationship between teachers' cognitions and their practices (2006, pp. 106-107).

In the preface of their *Reflective Teaching in Second language Classrooms* books (Richards & Lockhart, 1996), Richards asserts that recently there has been a movement away from *methods* and other *external* or *top down* views of teaching toward an approach that seeks to understand teaching in its own terms in second language teaching. The instructors themselves and their actual teaching processes are the focus of such an approach and it seeks to gain a better understanding of these processes by exploring with teachers what they do and why they do it. Richards further claims that the result is the construction of an *internal* or *bottom up* view of teaching. The approach is often teacher initiated and directed because it involves instructors observing themselves, collecting data about their own classrooms and their roles within them, and using that data as a basis for self-evaluation, for change, and hence for professional growth.

Reflection is defined as careful consideration or thought by Minott (2009); a process of disciplined intellectual criticism combining research; knowledge of context, and balanced judgment (critical thinking) about previous, present, and future actions, events or decisions. In light of this, reflective teaching is an approach to teaching, learning and problem solving that uses reflection as the main tool. As Bengtsson (1993) outlines, it encourages teachers to create distance between themselves and their practice. Martin Jr. Wood & Stevens (1988) further claim that teachers are themselves involved in analyzing, discussing, evaluating, changing and developing their practices, by espousing an analytical approach to their work.

According to Boody (2008), teacher reflection can generally be characterized through the observation of past, problem-solving, critical analysis and putting thoughts into action. Therefore, the theoretical framework of the present study has been an integration of Boody (2008), Hamilton (2005) and Schon (1987) and the characteristics of reflective thinking have been based on *a) reflection as retrospective analysis*, *b) reflection as problem solving*, *c) critical reflection of self*, and *d) reflection on beliefs about self and self-efficacy*. The ability to self-assess takes reflection as a skill to think over prior experiences and use them as an impact on current practices. This retrospective analysis also includes the ability to self-assess. Boody (2008) describes reflection as taking necessary steps to analyze and articulate problems before taking action, which allows for a more constructive action. He further asserts that:

"…critical reflection can be thought of as the process of analyzing, reconsidering and questioning experiences within a broad context of issues like ethical practices, learning theories and use of technologies" (Boody, 2008, p.502).

According to Williams and Burden (1997 in Choy & Oo, 2012), teachers are highly influenced by their beliefs, which are closely linked to their values and these beliefs are found to be more effective than knowledge in influencing how individuals organize tasks and problems and are better predictors of how teachers behaved in the classroom (Pajares, 1992). Another important factor that determines the reflective practices of teachers is self-efficacy, which can also determine the effectiveness of teaching as an intrinsic motivation (Markley et al, 2009).

Methodology

The research questions led us to the use of both the interpretive approach as well as statistical analysis of the data obtained in order to provide richer answers to the research questions unpinning this study. In the interpretive approach, the individual constructs personal meaning when they grapple with the environment around them to make it meaningful (Radnor, 2002), implying the need for an in depth and insightful analysis of data. Statistical analysis was used in our attempt to get a more generalized understanding of the data obtained and to look for general trends (Cohen et al, 2000) among the participants.

DESIGN AND PROCEDURE

A questionnaire with a Likert-scale was used to collect data in this study. The questionnaire consists of 33 questions where participants were asked to rate on a scale of 1-5 (1=strongly disagree and 5=strongly agree). The obtained data were analyzed on SPSS Statistics 22.

The topics for the questionnaire were created by Choy & Oo (2012) based on research by Hamilton (2005) on the development of reflective thinking. The statements cover four major areas of development: (a) *ability to self-express*, (b) *awareness of how one learns* and (c) *developing lifelong learning skills* and (d) *belief about self and self-efficacy*. Each of the four areas of development was further broken down into sub-sections as *observing own performance, using feedback and evidence, finding and analyzing patterns, making judgments, concepts and misconceptions, knowledge construction, metacognition, developing identity as a learner, transferring learning to other contexts, learning as a lifelong process, and developing a personal belief system*.

The questionnaire was piloted on 10 volunteers and unclear statements were adjusted by Choy & Oo (2012) in their study.

In addition to the questionnaire, a semi-structured interview was conducted to 6 teachers through open ended questions via e-mail exchange. The open ended questions for the semi-structured interview were based on the sub-topics on the questionnaire. The interview was conducted to analyze the data obtained by the questionnaire for an in depth and insightful analysis.

PARTICIPANTS

The participants of this study are t teachers of English working with different age groups of learners at different institutions (primary, secondary and university) in Turkey. All the participants participated in the study voluntarily; in addition to this they were not asked to reveal any further information than gender and years of experience. They were asked to fill in the questionnaires through e-mail exchange. A total of 50 participants were asked to respond the questionnaire on a voluntary basis. All the teachers came from English Language Teaching (ELT), and English Language and Literature (ELL) disciplines, but working as instructors or teachers of English as a Foreign Language (EFL) at various institutions. Further, 6 participant teachers (two from each of primary, secondary and university) were asked to answer open ended questions for four major themes of reflective thinking on a semi-structured interview inquiry via email exchange.

DATA ANALYSIS AND FINDINGS

Analysis of the data was done using SPSS Statistics 22 for descriptive results of the questionnaires, and the semi-structured interviews were analyzed in terms of themes. A One-Way ANOVA test was used to analyze the institutional and years of experience differences; and an Independent-Samples T Test was used to analyze gender differences on responses to the questionnaire. The questionnaires were further analyzed in terms of frequency of responses to each of the 1-5 scale on the questionnaire.

Of all the participants, 40% work as instructors at university, 30% work as teachers at secondary and 30% work at primary school. Table 1 presents descriptive analysis of institutional differences among teachers. From the table it can be seen that there is no scientifically significant difference among institutional differences (p=0.31>0.05), so it can be assumed that teacher working at different stages of education with different age groups reflect on their teaching practices and themselves in a similar way.

Table 1. Descriptive results of institutional differences

Institutions	%	M	SD	SEM	P
Primary	30	3,92	9,86	2.55	
Secondary	30	4,06	10.37	2.68	0.31
University	40	3,93	9.32	1.77	

p>0.05

Table 2 introduces descriptive results for experience years of teachers as a whole. It can clearly be observed that 10% of the participants have 1-3 years of experience, 36% have 4-6 years of experience, 16% have 7-9 nine years of experience, 38% have ten or more years of experience and there is no scientifically significant differences in reflective thinking in terms of experience (p=0.11>0.05).

Table 2. Descriptive results for experience years

Experience	%	M	SD	SEM	P
1-3 years	10	4.03	10.44	4.67	
4-6 years	36	3.85	8.30	1.96	
7-9 years	16	3.93	8.52	3.01	0.11
10 or more years	38	4.07	9.51	2.18	

p>0.05

An independent-samples t-test was conducted to compare male and female participants' responses on reflective thinking questionnaire. The participants consisted of %56 male teachers and 44% female teachers. Table 3 indicates that there is a scientifically significant difference in males' (M=3.88, SD=8.29) and females' (M=4.08, SD=9.42) responses; t(48)=-2.60, p= 0.01. These results suggest that females' reflective thinking scores are higher males'.

Table 3. Descriptive results for gender differences

Experience	%	M	SD	SEM	T-value	P
Male	56	3.88	8.29	1.57		
Female	44	4.08	9.42	2.01	-2.60	0.01*

*p<0.05

The data collected through questionnaires were further analyzed in terms of four major areas of development: (a) *ability to self-express*, (b) *awareness of how one learns* and (c) *developing lifelong learning skills* and (d) *belief about self and self-efficacy* in percentage. A one-way ANOVA test was analyze institutional differences for each theme on the questionnaire. Table 4 points out that there is only a scientifically significant difference in life-long learning skills of participant groups (p= 0.03<0.05). These results indicate that primary, secondary and university teachers reflect on life-long learning skills differently. On the other hand, there can be observed no other scientifically significant difference among each group of institution in terms of ability to self-asses, awareness of how to learn and beliefs about self and self-reflection.

Table 4. Descriptive results for institutional differences on themes

Themes	Groups	%	M	SD	SEM	P
Ability to Self-Assess	Primary	21.33	3.93	4.20	1.08	
	Secondary	20.83	3.86	3.27	0.84	0.72
	University	28.50	3.85	4.09	0.92	
Awareness of how one learns	Primary	17.11	3.51	3.98	1.03	
	Secondary	18.67	3.59	3.22	0.83	0.51
	University	25.25	3.46	2.14	0.48	

Table 4. Descriptive results for institutional differences on themes (cont.)

Life-long learning skills	Primary	18.00	3.72	3.80	0.98	
	Secondary	22.89	4.06	4.61	1.19	0.03*
	University	26.89	3.73	2.44	0.55	
Belief about self and self-efficacy	Primary	18.00	3.80	2.06	0.53	
	Secondary	17.33	3.76	2.28	0.59	0.62
	University	33.33	3.97	1.77	0.40	

p<0.05

The results obtained from the questionnaires are further analyzed for teachers from each institution and their responses on four major themes. Only the responses with a rating of 4 (*agree*) or 5 (*strongly agree*) have been discussed. A similar analysis was conducted by Choy&Oo (2012) for categorized levels of items on the questionnaire as: *introductory*, *intermediate* and *advanced*. Such a categorization for each item have been neglected in the study, but a categorization for each theme has been piloted and the results are given below.

Table 5. Descriptive results for institutional differences on themes in percentage

Themes/ Groups	Primary %	Secondary %	University %
Ability to self-assess	74.44	69.44	71.25
Awareness of how one learns	60.00	62.22	56.11
Life-long learning skills	63.70	76.30	67.22
Belief about self and self-efficacy	68.89	57.78	83.33

The results on the table indicate that all the teachers from each institution have responded changeably on each theme. While the averages for *ability to self-assess* and and *awareness of how one learns* are close to each, a significant difference can be observed in terms of *life-long learning skills* and *belief about self and self-efficacy*. The primary school teachers either *agreed* or *strongly agreed* on life-long learning skills with an average of 63.70% and instructors at university rated closely with an average of 67.22; however, secondary school teachers rated significantly higher than the former groups with an average of 76.30%. On the other hand, a significant difference can also be observed on the item on *belief about self and self-efficacy*, too. While the primary school teachers rated this item either *agree* or *strongly agree* with 68.89, the secondary school teachers rated with only 57.78, and the instructors at university rated considerably higher with an average of 83.33%. From the results it can be indicated that although the rates for responses on each theme is changeable for all the institutional groups, a significant difference can be seen for the *life-long learning skills* and *belief about self and self-efficacy*. While the secondary school teachers rated the former theme highest and the instructors rated the latter theme highest.

Table 6. Descriptive results for gender differences on themes in percentage

Themes/ Groups	Male %	Female %
Ability to self-assess	68.16	76.14
Awareness of how one learns	54.76	64.65
Life-long learning skills	67.46	70.71
Belief about self and self-efficacy	65.48	78.79

Table 6 shows the descriptive results in percentage for gender differences in terms of four major themes on the questionnaire. Only the responses with a rating of 4 (*agree*) or 5 (*strongly agree*) have been discussed. The results clearly indicate that there is a significant difference between male and female participants

of the study on all the themes. These results are compatible with the results obtained from the independent-samples T-test on SPSS statistics.

The last of the qualitative data analysis was piloted on experience differences of the participant teachers for major themes on the questionnaire. In general, there is no significant difference among teachers with various experience years. The most significant difference can be seen on *beliefs about self and self-efficacy* item for which teachers with 1-3 years of experience rated the highest *agree/strongly agree,* an average of 86.67% while the closest was rated 7.5% lower by those 7-9 years of experience, an average of 79.17%. It can be concluded that teachers in first years of experience rated slightly higher on reflective thinking in general, but there is no significant difference among the teachers as a whole.

Table 7. Descriptive results for experience differences on themes in percentage

Themes/ Groups	1-3 years %	4-6 years %	7-9 years %	10/over %
Ability to self-assess	70.00	73.15	71.88	70.61
Awareness of how one learns	64.44	57.41	52.78	62.00
Life-long learning skills	71.11	66.04	58.33	75.44
Belief about self and self-efficacy	86.67	68.52	79.17	66.67

In addition to the quantitative analysis of the questionnaires, a qualitative analysis was conducted through a semi-structured interview based on four major themes on the questionnaire. The interview form was shared with 6 participant teachers via email exchange and their responses on each theme have been analyzed.

From the interview with teachers, it can be concluded that the teachers value the feedback from their students and they observe students' and their own performances during the class. By the feedback from the learners, the teachers are able to reflect on themselves and as Markley et al (2009) indicate, teachers attain an intrinsic motivation to be a good educators. Ball (2009) further notes that when teachers gain self-efficacy, they have high metacognitive awareness of themselves and they can change the strategies they are using to attain their intended goals.

The open ended questions for the semi-structured interview and some of the responses from teachers are presented below.

A. ***I can observe my own performance by/from…***
(1) "…comparing my lessons in different classes, at different times and levels. I try and see what is available for me from materials and audiovisual aids, etc., and how I can best make use of these. I regularly ask my students about my lessons, usually half-way through the course. Their feedback gives me some insight into how successful or less successful I am as a teacher." (A…)
(2) "I value the feedback from my students very much, and I pay attention to in-class observations." (C…)
(3) "I usually observe my performance by looking at the climate of the class and assessing interest levels of students." (Y…)

On the awareness of their students' needs and how they learn, the teachers emphasized on students' ways of thinking and having discussions with them before, during or after certain phases of the course. By valuing the student expectations, the teachers tend to change their teaching methodologies, as well.

B. ***I'm aware of my students' needs and I know how they learn because…***
(1) …understanding their way of thinking and having an idea about their backgrounds, I can best understand how to teach and encourage them to learn even on their own when they are away from school." (A…)
 (2) "I hold a discussion at the beginning of the course with my students about their expectations of the course, and the methods and/or techniques they believe they can benefit most." (D…)

C. ***I can always develop myself as a teacher because…***
(1) "I have to adapt to, or at least, take into consideration the latest (trends) in terms of teaching methods, as well as educational theories."(A…)

D. ***I am aware of my own belief as a teacher because…***
(1) "...success is achieved by self-confidence, and a strong belief in one's ability as a teacher and educator when you believe that the education process is an issue of learning and teaching at the same time."(A…)
(2) "...through the process of language teaching, I always try to have an unprejudiced and universal attitude towards my students as a teacher. I also try to encourage my students to gain similar ethic values." (S...)

The teachers further indicated that the teaching is a process through which they learn and develop themselves, too. They also suggest that having self-confidence and strong beliefs about their own abilities, exploring the insights of their capabilities, and knowing their won ethic values should be the main concern of educational process they go through.

CONCLUSION

The present study mainly focused on the effect of three variables on reflective thinking: *at various institutions*, *gender difference*, and *years of experience*. The results were both analyzed quantitatively with statistical and frequency analysis and qualitatively through the content analysis of the semi-structured interview. First of all, differences among teachers from various institutions have been analyzed and both from the statistical analysis on one-way ANOVA test and the frequency analysis it is indicated that there is no statistically significant difference among teachers from various institutions (*primary, secondary, university*). It can be concluded that no matter what age groups teachers work with, they reflect on their own practice in a similar way.

Gender difference has been the second focus of the study and the only significant difference has been observed on male and female teachers. Through the independent-samples t-test results and the frequency analysis, it has been obtained that there is a scientifically significant difference between male and female teachers in terms of reflective thinking on their teaching practices. The frequency analysis on *agree/strongly agree* rates revealed that female teachers reflect on their practices with higher rates than their male colleagues. Thirdly, teachers' years of experience has been analyzed statistically and on a frequency analysis. The results show there is no scientifically significant difference among teachers with various years of experience although those at first years of their teaching practices rated slightly higher in general.

In addition to the quantitative analysis, a qualitative analysis was conducted through a semi-structured interview. Some of the teachers were asked to report on their reflective thinking through an inquiry form, which contained open ended questions on four major themes on the questionnaire, through email exchange. The interview inquiries reveal that teachers value feedback from their students, they do not consider their practice merely as teaching but also as a life-long learning, and they reflect on their own practices through several phases of the course According to Sezer (2008), in order to become reflective thinkers, the gap between learning situations can only be bridged through an awareness of what is known and what is needed. Unlike the results obtained by Choy and Oo (2012) with Malaysian teachers, who seemed to be more interested in maintaining their own perceived sense of self-worth and self-efficacy rather than using the comments by students as a means to help them improve, in the present study, teachers' statements on semi-structured interview form indicate that they have high metacognitive awareness of their own strengths and weaknesses, which according to Ball (2009) could help identify barriers to learning and changing strategies to attain goals. They even stated that they would change the way they teach in accordance with the feedback they obtain from their students.

DISCUSSION AND IMPLICATIONS

Despite the ambiguity in its definition, on which there has not been a clear consensus, as Zeichner (2010) points out, reflection has been an international movement that developed in teaching and teacher education against the view of teachers as technicians who merely carry out what others, removed from the classroom want them to do, and of top-down approaches to educational reform that only involve teachers as passive participants. It is evident that reflective thinking on their own practices will contribute teachers with their professional development and make them active learners rather than passive teachers. On the other hand, only observing their rates on reflective thinking does not necessarily make them good or bad teachers, pre and post studies upon teachers' reflection on their practices could be conducted to clearly observe the reasons and results of it on teaching. Also, students' feedback upon teacher's reflection can be included into the research design, as the effect on them behold the primary concern of teaching.

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MODERN IMPROVED TECHIQUES OF EDUCATIONAL PLANNING AND ROLE OF EDUCATIONAL ADMINISTRATORS TOWARDS ACHIEVING EDUCATIONAL OBJECTIVES IN TERTIARY INSTITUTIONS IN NIGERIA

UMAR MUHAMMAD*, BELLO MUSA**

DEPARTMENT OF EDUCATIONAL FOUNDATIONS
USMANU DANFODIYO UNIVERSITY, SOKOTO, NIGERIA
+2348037855482, +2348055075719, E-mail: umarmuhd619@yahoo.com*
DEPARTMENT OF EDUCATIONAL FOUNDATIONS
SOKOTO STATE UNIVERSITY, SOKOTO, NIGERIA,
+2347069799768, +234810651559, E-mail: bmusa35@gmail.com**

ABSTRACT

This study examined how educational administrators can utilize modern improved techniques of educational planning to achieve educational objectives in tertiary institutions in Nigeria. The paper highlighted issues such as educational planning in Nigeria, School administration, School administrator, specific duties of school administrator and purpose of educational planning. Lack of specific knowledge of the new improved modern techniques or approaches of educational planning by the majority of school administrators tends to complicate things let alone choosing the best approach out of the available ones. It was concluded that a school administration has a tremendous role to play in the realization of the overall educational goals and objectives in his/her school. It was recommended that, training and re-training of personnel charged with the responsibility of applying the models in educational institutions should be given priority and finally adequate and accurate data should be provided to educational planners and administrators at all levels of educational institutions in the country.

Keywords: Techniques, Education, Planning, Administration, Tertiary

INTRODUCTION

Planning is a rational and intelligent process of preparing and arranging a set of decisions for future actions directed at achieving goals and objectives by the best means (methods) possible. It is basically future and goal oriented. In general term, Planning is a process of establishing priorities for future actions in attempt to solve economic problems with stem from the existing scares resources. Planning thus, implies giving thoughts to the goals, aspirations and priorities of a nation (Okwori, 2011). To plan well, you must know the needs, the goals, desires and aspirations of the people you are planning for. For example, you must know the needs of Nigerians to plan for Nigerian Education. You need to be acquainted with the environment (Society) and know the demands of such society. People accepts things that are of positive value and benefit to them. If you intend to carry them along, then you must plan to meet such desires, hence the need to be conversant with every segment of the environment before planning. In Planning, there must be goals or objectives, which is the first step in the cycle to be set and met. Since developments takes place over a long period of time, planning is designed to achieve development in a continuous and spiral process, in this sense, therefore, planning is not only concerned with objectives but also how to achieve the objectives, that is implementation. The document called plan starts with a set of inter-related decisions that we refer to as plan. As efforts are made to carry out these decisions, we are involved in a feedback system of new information. That new information reveals information errors and unexpected events as well as new possibilities. This information calls for changes in the original decisions in order to achieve better results (Okwori, 2011).

Educational Planning in Nigeria

Educational Planning is the application to education itself of what real educators seek to instill in students- it is a rational scientific approach to problems in education. Such an approach involves identifying objectives and available resources, and also examining the implications of alternative courses of action and choosing wisely among them, deciding on specific targets to be met with the best means systematically (Okwori, 2011). According to Ovwigho (2004) Planning generally e ntails the identification of an organization and working out ways and means of

achieving them. Therefore, educational planning involves the process of identifying educational needs, the direction which education should take and how to implement the decision taken. He opined further by saying that, Educational Planning is the application of a rational and systematic analysis to the process of educational development with the aim of making education more effective and more efficient in responding to the needs and the goals of the students and the society. According to him, educational planning deals with the future of our educational system in relation to the past and present trends. As a result, it provides the basis for future decisions and actions on issues related to education.

Educational Planning is a continuous process. Therefore, it does not end when the plan is complete on paper and approved by the by the relevant authorities such as the State Executive Council or even the Ministry of Education. It is also concerned with the implementation of the plan, the progress made and problems encountered in the process. As a result, educational planning involves of a consideration of unforeseen obstacles and making provision for possible ways of overcoming them. This implies that educational planning calls for a constant evaluation and a modification, if necessary, of the related programmes until the anticipated goals are achieved (Ovwigho, 2004).

Educational Planning is process of analyzing the education needs of the society and be able to make economically viable allocation of the available scarce resources for their educational development. It could also be defined as a process of preparing a set of decisions for action in the future. It is believed that, the process dwells on the conscious attempt being made by Governments at any level, to link the development efforts to their educational system with the demand for educated manpower by the nations' economies. Since we know that, educational planning is the making use of the limited resources allocated to it to achieve educational objectives, the location of a particular institution will help the planner to know when and where to locate the next type of education institution (Olubadewo, 1992)

Moreover according to him, in every society, there are reasons advanced for planning of all other economic sectors of the society, Therefore we plan because:
a) Planning leads to education organization success
b) Planning leads to feelings of success and satisfaction by employees.
c) Planning helps the Managers to cope with changes
d) Planning is necessary for effective performance of other management functions
e) Education is planned to cater for the development of manpower requirements at various levels of the national economy.
f) Planning is done to avail the educational status of the society.
g) To know and plan for the statistics of books
h) To provide statistics of students
i) To know the statistics of teachers and non-teaching personnel
j) To know the statistics of facilities needed in the school system.
k) It provide avenue for projection and planning of schools and students enrolment.

According to Nwanko in Ogunu (2000), the most important characteristic of an effective and good educational plan is its pragmatism. That is, it will work, if only the plan the plan is good and effective. The pragmatic test of any educational plan is determined by how good the plan is and how well it is carried out.

Educational Planning is the process of applying scientific or rational procedures to the process of educational growth and development so as to ensure efficiency and effectiveness of educational system (Adesina, 1981)

Blaug (1970) sees educational planning as a process that involves making conscious decisions now that have further consequences for actions that have to be taken in future.

School Administration

Dare (2009) defined School Administration as a process concerned with identifying, maintaining, stimulating and unifying, formally and informally organized human and material energies within interpreted system to achieve educational goals. Similarly, School administration is specifically concerned with students, teachers, rules and regulations and policies that govern the school system. Therefore, school administration could be considered as a team in which the school head and staff work together for the growth and development of the child. According to him, School administrator fulfils such demands by developing specific plans and policies within a unified system related to the administrative task and it is through administration that the energies of people are brought together.

School Administrator

A School administrator could be defined in different ways defending on the opinion of the writer. Such definition include the headmaster, the executive head, the coordinator, a disciplinarian and so many others. The School administrator performs certain functions that are closely related to what managers in industrial organizations perform. These functions are similar in nature and purpose because they are being exercised in a complex human organizations. The school administrator can then be accorded with the title of Director and Coordinator of Educational Resources (human and methods) and utilizes wisely to achieve the stated goals of education (Olubadewo, 1992).

Specific Duties of School Administrator

Olubadewo (1992) stressed that, every school administrator has his specific duties to perform towards the achievement of the goals and objectives of the organization. These duties are Planning, Organizing, Commanding, Co-ordinating and Controlling. As the highest among equals in the immediate school organization, he has a wide range of duties to perform. He establishes relationship with other government agencies to whom is responsible and accountable in the general performance of his duties. In the first instance according to him, the school administrator must be conscious of the fact that, the Federal Ministry of Education has entrusted into his hands the most important educational document, within the realm of which he operates. The National Policy on Education is clear about the objectives of education. It gives brief plans and methods of achieving the general stated goals of education. It is his duty to observe these basic objectives and must be able to develop specific objectives from the general and stated objectives. On the whole, according to him, the school administrator is accountable to individuals, interest groups, parents and community. However, he does not see himself as above everybody

Dare (2009) maintained that, school administration should be guided by certain basic ideas, some of which are describe below:

 i. School administration must strive to create a community of learners who are physically and mentally healthy, efficient and responsible and whose behavior is acceptable to the society.

 ii. The School must be administered in such a way that all members of both teaching and non-teaching function as team. Each individual in the school should assist to develop his or her own talents and to contribute maximally to the progress of the school.

 iii. A good administration demands that both staff and students have a large part to play in decisions that determine the school rules, regulations and programmes. Through staff meetings, student's representatives, clubs, committees and organizational school administrators should involve everybody in the running of the school. Therefore, proper delegation of authority and responsibility must prevail in school administration.

 iv. School administration should encourage and provide for the professional growth of teachers through planned educational seminars conferences, workshops and in-service training.

The Office of a School Administrator is the central focus of the School organization. Major decisions emanate from this office. These decisions are then communicated to the individuals concerned about the school administration, the teachers, students and parents. It is the stock house of all records of all information entering and leaving the school. For example, admission register, Logbook, petty cash book, inventory book, attendance register etc, are kept for information purpose. He should maintain an open door policy but not too flexible to erode his authority and capability. He should be acceptable to the people he should inculcate the spirit of good supervision and constructive criticism. He should maintain the office as well as having periodic teachings in the classes of the school (Olubadewo, 1992).

The School Head performs a wide range of functions. The main task of the school head are interpreting policy, executing curriculum programme, seeing to student's welfare, physical facilities and finances, inducting and re-training staff, and finally maintaining school community relations (Mussazi, 1986).
In the National Policy on Education in Nigeria, the objectives has been broadly and generally defined. It is said in it that school administration should be concerned with:

    a) Setting specific educational goals and objectives
    b) Determining the approach by which the goals and objectives are to be achieved.

In essence, planning determines what direction a school should go and the approaches to adopt by the school administrators to get a better result. It is the first of all the managerial functions. A school administrator must be able to develop programmes and approaches for the use of the resources to achieve the stated or pre-determined objectives of the school. Being an important working tool, school administrator plans because:

    a) Planning to leads to organizational success
    b) Planning leads to feeling of success and satisfaction by employees
    c) Planning helps an administrator to cope with changes
    d) Planning is very essential for effective performance of the management function (Olubadewo, 1992)

Purpose of Educational Planning

According to Olubadewo (1992), the main purpose of educational planning is to change the present condition of things having in mind the future needs of the society. Since we know that planning takes into cognizance the *future needs*, therefore, educational planning is to create the necessary and sufficient manpower and material resources that will reinforce and strengthen the already existing major social policies that are for the attainment of the educational objectives. To attain the stated objectives, the planning pre-supposes that should be full participation of everyone involved in planning and implementation of the educational programs. The objectives of the plans should be broad enough for everyone to be aware of it should develop to the life style of the individuals in the educational system

Modern Improve Techniques of Educational Planning

According to Dare (2014) modern improve Techniques of Educational Planning is a process involving judgment and decision in determining plans, guarding, integrating, motivation and supervision of personnel in carrying out operations.

These Techniques are as follows:

1.PERT (Programme Evaluation Review Technique)

2.CPM (Critical Part Method)

3.PPBES (Planning, Programming, Budgeting, Evaluation System)

Programme Evaluation and Review Technique (PERT)

According to Ovwigho (2004) PERT was first developed and applied in defense projects but it is now used by managers in planning and controlling the various projects in their organizations. It is particularly used to calculate the total amount of time it will take to complete a project. It also highlights the critical or bottleneck activities in a project that require more attention in terms of allocating more resources to them or through constantly monitoring and evaluating the progress of such activities as the project is executed.

According to him in applying PERT, it is usually assumed that the time for the performance of each activity is uncertain. PERT is therefore, a probabilistic model. As a result of this, three estimates for the completion of each activity of a project are made. These are the optimistic time estimate, the pessimistic time estimate and the most likely time estimate. Statistical analysis is applied in determining the time estimates and the probable time for the completion of each activity and the entire project. For this reason, this model is very useful as an instrument of control. He further posited that, for an Educational system, PERT can be effectively used in the planning and organization of our record system. It can also be used to plan and control the process of budgeting in the school system. The model can equally be applied in the construction of buildings, the acquisition of facilities and for the scheduling of unusual activities in the Educational system. PERT can also be applied in the planning of the flow of students, staff and other resources. With the aid of this model other complex projects in the educational system can be carefully mapped out, analyzed and better implemented.

Some fundamental Concepts and Symbols that are used in the construction of PERT Network

Ovwigho (2004) goes further in stressing that, there are some fundamental Concepts and Symbols that are used in the construction of PERT Network. He suggested that, for a better understanding of network models it is important to discuss the following related terms and symbols.

An activity: This refers to the actual process of performing the work. It is therefore, denotes an essential components of the project, which is being undertaking. On this basis, an activity requires some effort and time for it to be accomplished. Any activity of a network therefore has a specific points where it begins and another where it ends.

A Network: This refers to a series of interrelated and interdependent activities and events which when performed will yield some products or services that invariably contribute to the attainment of the overalls goals of an organization. Projects such as the construction of workshops for the junior secondary schools in a state in state and the recruitment of teachers for the primary schools in a Local Government Area by the Primary Schools Management Board can therefore be carefully presented and analyzed with the aid of a network.

A Network Diagram: It is a pictorial presentation of the different events and the activities that are related to a project. Such Diagrams always have a beginning or source event and an ending terminal event.

Network Path: This consists of a set of activities that connect the network beginning event to its terminal event. Networks are made up of several paths.

Critical Path-Method (CPM)

This planning technique was developed in 1956 at the E.I du Pont Nemous & Co., USA, for the scheduling of routine plant. It was also designed to be used for the overhauling and maintenance of plant. Since then, it has been mainly applied in building construction and for large projects particularly by projects planners and controllers (Ovwigho, 2004).

According to him, the main analytical focus of the CPM is on the determination of the appropriate programming strategies that would satisfy the needs of an organization particularly in terms of scheduling its programmes at minimum cost. Planners, in adopting this technique therefore, have to determine and follow the paths of the CPM network in order to ascertain the shortest or the minimum time required for the completion of each activity or job associated with a given project. Though this, according to him, the maximum cost and critical-path of the entire project are established. The Critical-Path Method therefore helps in determining the ranges of time, the cost of a specific project and related critical-path. It enables the planner to determine the cost of reducing the time of accomplishing a project. It is on this basis that Candoli et al (1978), regard the CPM as a very effective technique for planning, scheduling and coordination of the overall development projects of any organization.

Ovwigho (2004) pointed out that, in applying the CPM, a distinction has to be made between planning and scheduling. Through planning, the various activities that must be accomplished and the order in which they should be done in order to attain the objectives of the project are determine. Scheduling, on the other hand, relates to the establishment of a timetable for the accomplishment of the various activities that constitute the project.

The construction of CPM Networks: According to Ovwigho (2004) CPM network is deterministic. Therefore, it is more useful when it can be assumed that both the time and the cost of completing the various activities of a project are certainly known. In designing and applying the CPM, planners use two sets of time and cost estimates or figures for each activity. One set is for the normal time and normal cost required to complete each activity under normal conditions. The second set of estimate provides the crash time needed to complete each activity under conditions that lead to reduction in the time of completing the project by spending more money. These two estimates enable the planner to have a clearer picture of the cost that are associated with a deliberate decision to increase the pace of a project. As a result of this, CPM makes it possible for the planner to design a programme that can minimize the project completion period with the increase in the cost and the projected normal cost.

Examples of a CPM Network: Ovwigho (2004) posited that, in constructing a CPM Network, the planner needs to have information related to the normal time estimates for the various activities. The normal costs and the crash costs could also be presented in order to determine the associated change in cost per a given unit of time. In constructing the CPM network, the normal time and the crash time for each activity are presented along each activity of the project. In constructing a CPM network, the major steps that are to be followed for designing PERT network are also applied. According to him it is important to observe that CPM and PERT are similar in terms of their basic structure, their rationale and method of analyzing the models. With the CPM, it is normally assured that the activity durations are determined under specific conditions and a single estimate is made for each activity while with PERT, three different time estimates, on the basis of the probability of completing the activity. Moreover, while CPM makes rooms for explicit estimates of activity costs of any project, PERT does not specifically provide for such costs. Generally, CPM enables the planner or administrator to estimate the normal time and the normal cost needed to complete each activity under normal conditions. It also makes it possible for the crash time and the crash cost that might be required to accomplish each of the activity to be estimated.

Table 1: The activities, Duration and the Cost of Building a Classroom in a School

Activity	Description	Time	(days)	Cost	(Naira)	
		Normal	Crash	Normal	Crash	Change in cost/day
1-2	Choice of site	10	7	500	800	300
1-3	Drawing of Plan	12	10	1,600	2,000	400
1-4	Approval of Plan	15	6	1,200	1,800	600
2-5	Purchase of Required Equipment and Materials	20	12	2,000	2,300	300
3-5	Laying of Foundation	30	14	4,500	4,900	400
4-6	Fitting doors and Windows	25	18	6,000	6,700	700
5-6	Completion of building	40	32	3,800	4,200	400

Source: Ovwigho, 2004

The above table is an example of how Critical Path- Method one of the Modern improved technique is applied in Educational Planning in Nigeria. The table shows both time and cost of building a classroom in a school. It shows activity, description and normal and crash for both time and cost of building the classroom. It shows right from the choice of site, drawing of Plan, Approval of Plan, Purchase of Required Equipment and Materials, Laying of Foundation, Fitting Doors and Windows and lastly Completion of Building.

Planning. Programming, Budgeting, Evaluation System (PPBES)

As the Secretary of Defense for the United States of America in 1961, Robert McNamara introduced some elements of systems analysis in an effort to resolve some of the problems confronting the Department. The aim was to enhance a more deliberate determination of the goals of the department. One of the concepts introduced during the period 1961-1965, was Planning Programming and Budgeting System (PPBS). Later the element of 'evaluation' was included to make it become Planning Programming, Budgeting and Evaluation System (PPBES). The usefulness of applying this type of Budgeting to the Nigerian Public Sector has been recognized. As a result, in the Report of the Public Service Review Commission (generally referred to as the Udoji Commission Report), it was recommended that the programme and performance budgeting should be adopted to the country. The application of this type of Budgeting whenever possible has been accepted by the Federal Government (Ovwigho, 2004).

The concept of PPBES

According to Ovwigho (2004) PPBES is integrated system devised to provide school heads and their staff members better and more reliable information with which to plan the programmes of their institutions. It is also a device for making choice among the various ways of spending the limited funds to attain the goals of these institutions. According to him this technique involves a set of techniques applied for the management and evaluation of programmes and the activities of an organization through identification of objectives.

The PPBES is therefore, a technique that calls for the formulation of alternative programs, the identification of resource requirements and accountability for programme results. It is on this basis According to him that this technique focusses the attention of educational administrators and planners on the purposes or objectives of education, the programmes to be implemented with the associated costs and the potential programme results.

Therefore, PPBES involves a cycle of planning that relates to:

a. the establishment of the objectives or the goals of the institutions
b. determination of the alternative programmes that could be used to attain these goals
c. the determination of financial cost of each of the programmes
d. evaluating the results of the programmes and objectives and
e. devising additional plans for improving the existing programmes so as to the revised objectives

The PPBES emphasizes the need for accountability in the educational system. He goes further to posited that, it stresses the need for a close observation of the relationship between the input and output with a lot of importance attached to the quality of the product of the school system so as to justify the expenditure on education. On this basis, the PPBES serves as an instrument for allocation of scarce resources among the various sectors or types of education within the system. Therefore, a part from being a tool for the identification of the products and services required by educational institutions and the society, this planning and budgeting model directs the attention of educational administrators and planners on the alternative programmes that could ensure a judicious use of available resources.

Procedures of Designing PPBES

Ovwigho (2004) suggested that, the following procedures could be followed in applying the PPBES in educational institutions in Nigeria:

1) Specify the appropriate authority or body that should be responsible for the development of a given programme, for instance, the Ministry of Education, the Schools Management Boards, the School authority or the combination of these bodies.

2) Clear statement of the measurable objectives of the educational programmes for which money has to be spent.

3) Determine the activities that are related to the objectives and such activities should be presented as comprehensive programmes which when implemented could foster the attainment of the overall goals of the institution. The programme so designed should be realistic and capable of being controlled.

4) Collect data that are related to the programmes already designed. Such information could be on the criteria for programme evaluation, personnel data on staff and students, data on facilities, on finance, for instance, those on accounting procedures and other financial records.

5) Money estimates are assigned to the various programmes on the basis of inputs and the related procedures for the planning period.

6) Analyze the alternative programmes in relation to the projected cost-effectiveness. This aids in eliminating or improving some of them and in selecting the most beneficial programmes.

7) The new programmes that emerge are further analyze to determine how effective they may be in attaining the goals of the institution.

8) Select, within the available resources, the alternative programmes that are most likely to enhance efficient and effective attainment of the predetermine goals.

9) Set the system or the budget into operation by applying the inputs and the processes that have been determined.

10) Constantly evaluate the programmes being implemented and the output of the institution or the educational system. On the basis of the evaluation, there may be the need to change the inputs and/or the processes during the next budgeting period for improved results.

11) Review the objectives as stated in step (2). This could lead to a continuation or a modification of those objectives and as a result of the continuous evaluation.

12) Prepare alternatives plans to obtain a more efficient means of achieving the goals and objectives of the institution or the educational system.

Ovwigho (2004) noted that, it is important to note that the process of evaluation is an integral part of the PPBES. Such an analysis enables the planner or administrator to carefully examine the alternative courses of action in relation to costs and benefits thereby arriving at rational decisions. With the PPBES, both the quantitative tools of analysis, the initiatives and judgment of the planner are applied. It also essential for adequate control to be exercised over the programmes being implemented while progress reports should be frequently made.

Udoh and Akpa (2007) assume that, the traditional line-item budget is now under serious attack by planners and Administrators all over the world. Planning-Programming-Budgeting-System (PPBS). This according to them attempts to answer the question of allocation of resources among competing claims in a way which best meets educational objectives. The PPBS was invented to overcome deficiencies inherit in the line-item budget. It improves operational efficiency that is, progress in institutional planning. Udoh and Akpa submitted that, PPBS is designed to accomplish the stated objectives of the institution through enabling its management to compare the cost of programmes, relates this to current activities, evaluate them to ensure maximum effectiveness and efficiency.

Udoh and Akpa Submitted that. it may be summarized that the strength of the PPBS include among others, helping the administrator to:

a) Identify goals and objectives;
b) design activities and programmes to achieve these objectives;
c) analyze systematically the available alternatives;
d) obtain more and better data;
e) evaluate cost and effectiveness of educational programmes;
f) extend time-spam in planning
g) allocate on a rational basis financial resources to instructional programmes;
h) identify priorities in the programme;
i) promote innovative programme and methods; and
j) Increase public understanding of, and support for the system.

Problems Associated with the Application of the PPBES

Ovwigho (2004) lamented that, the main problem in the application of the PPBES to the Planning of Education in Nigeria emanates from the fact that most school administrators lack specific knowledge of the approach, the associated techniques and the potential benefits to be derived from its application. Most of the educational institutions lack qualified analyst and adequately trained personnel who could design, implement or operate a successful PPBES.

Moreover, the educational programmes and policies of less developed countries are relatively unstable to establish a strong basis for projection. Apart from the frequent interference on the activities of Planners and administrators by too many parties who are interested in the business of education in developing nations, financial constraints are also some of the main obstacles that could be encountered by the administrator in his effort to apply the PPBES.

CONCLUSIONS

It could be concluded that, a school administrator has a tremendous role to play in the realization of the overall educational goals and objectives in his/her institution. This can only be achieved via selecting the appropriate technique that suits the environment this is because every technique has its own merits and demerits   Lack of specific knowledge of the new improved modern techniques or approaches of educational planning by the majority of school administrators tends to complicate things let alone choosing the best approach out of the available ones. Moreover, inadequate funding which makes education sector in the country incapacitated as well as educational planners and administrators. Some educational projects do not have specific beginning and terminal periods and this make it difficult for the techniques to be applied. The requirement of the models for constant evaluation of projects may be difficult especially when the educational system lacks well trained administrators and planners who can

design, analyze and effectively apply the models. The CPM, for instance, requires that a project should be reappraised whenever changes are introduced. This cannot be strictly and effectively done in our educational system particularly when it is realized that most of the educational projects are usually influenced by rapid changes in the political system of the country and are therefore unstable. In adequate and inaccurate data, under such situation applying network model such as PERT may produce unreliable results since the time estimates that emerge from the computation may not reflects the reality of these programmes. This problem can invariably reduce the usefulness of the network diagram and the associated critical path. The computation of probabilities under the PERT is based on the assumption that most of the activities operate on critical path and as a result, the distribution of the total time is normal. However, this cannot always to be in real life situation and this sometimes reduces the usefulness of the probabilities. It is difficult to prepare educational objectives into cost-related terms. In view of the long processes that should be followed in applying the PPBES, this approach to budgeting is likely to waste time and energy.

RECOMMENDATIONS

1. Training and re-training of personnel in charge of designing, analyzing and applying the models in educational institutions throughout at all levels of educational system in the country.

2. Provision of adequate and accurate data to educational planners and administrators at all levels of educational institutions in the country.

3. Organizing on the job-training such as, Seminars, workshops etc in order to make school administrators conversant with the new improved modern techniques of educational planning.

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IMPACT OF EXHIBITIONS ON TOURISM DESTINATION IMAGE AND TRAVEL INTENTIONS: A CASE OF DYNAMIC MACAO PROMOTION WEEK

Jinquan Zhou

Associate Professor, Gaming Teaching and Research Centre, Macau polytechnic institute,

Macau, China, Email: jqzhou@ipm.edu.mo

ABSTRACT

Abstract--Most of the previous studies focused on tourist destinations after the tour and revisit and less on willingness to tourism destination before traveling. In this paper, we try to find the relationship between exhibitions and tourism destination image before traveling and the intention to travel. A case of Dynamic Macao Promotion Week-the exhibition of tourism destination of Macau was use to analyze the effect of image and intention to travel. Investigation and a non-random questionnaire survey ware employed on Dynamic Macao Promotion Week – Xian. A total of 393 valid questionnaires are used to find that exhibition on tourism destination image and travel intention have significant positive effects on tourist destinations image and travel intention, and exhibition of tourist destination image has mediate impact between travel willingness and destination image. An implication is that exhibition can be one of the variables effect the tourist cognition to tourism destination image, showing an important role for destination tourism image and tourism in future.

Keywords--exhibitions; travel intention; tourism destination image

INTRODUCTION

Travelers' behavior can usually be predicted by their intention. Intention is sometimes considered more effective than behavior to comprehend the human mind. As Day (1969) explained, intentional measure is more effective in many cases than behavioral measure in capturing consumers' mindset because customers may make purchases because of constraints instead of real preference, such as time convenience, lack of substitutes, and monetary rewards. Tourism destination image is an attitude to destination, for a destination as a whole or individual ideas and concepts, which will affect tourism decision-making and selection process before.

In this paper, Dynamic Macao promotion week - Xian station, was selected as a research sample to investigate those exhibition attendances, which is a multiple display for Macao's economy, tourism development and cultural vitality of the city, promoting the Macau small and medium enterprises to develop in the mainland market, hosted by the Macau S.A.R. Government Economic Services Bureau, Macau S.A.R. Government Tourist Office, Macau trade and investment promotion Institute and other agencies to support. This promotional activity launched in 2009, have been held in 14 regions, respectively, in major Chinese cities such as Shanghai, Beijing, Chongqing, Henan, Changchun and Nanjing so that local people's awareness and understanding of Macao's industry, which brought new impact on Macao's economy and tourism. A positive destination image of Macao make people more aware of a desirable destination for tourists.

In this sense, the purpose of this present study is to examine exhibition as intermediary variable to attract people on tourism destination produced basic of cognitive and interest for destination image and intention to travel. A model was built to examine how an exhibition effects on pre-tourism destination image and travel intention, considered the factors such as promotion and attraction of exhibition, and emotional image, and cognitive image of based environment image and humanities environment image to find structure and formed mechanism of travel intention.

LITERATURE REVIEWS

2. 1. Tourism attraction of the exhibition

Exhibition is an activity provided products, equipment and services of owner for the exhibitors, to display and promote their products in certain markets (Davidson, 1994, Goldblatt, 1997, Lumsdon, 1997), can also take an opportunity for exchange and cooperation in the field of the products (Peter Neven, Sylvia Kaitz, 2005). Peter and Weiermair(2000) explained that attraction is an artificial creation to attract tourists through management and creativity, together with construction and successful strategies. That most attraction for tourist attention is the promotion activity compare with tourism resources attraction, Godfrey &Clarke (2000) believe that promotion is the best way to create desire and action.

The attraction of the exhibition include images to attract, promotions attract attracted, attract, service, atmosphere, and facilities, which most directly promotion is the Exhibitor including both exhibitors and visitors by the organizer of the exhibition. Professional exhibitors and audience is an exhibition of high quality can be an important factor in a successful, both inextricably linked, directly reflect the levels and effects of exhibitions (Jim Blythe, 2002). Donald Getz (1991) considered the festivals and events sustainable develop the relations between organizers and visitors. People get involved in the exhibition focused on the recreational benefits, rather than separate facilities, activities, or services. Exhibitions has quickly feedback, high efficient and effective of dissemination and far-reaching characteristics compare with other promotional medium.

2.2. Exhibition and travel intentions

Rabheb (1980) Defined travel intention is the individuals engage in tourism activities of tourism frequency and types of tourism activities. Folkes (1998) defined the intention as a person's subjective judgment of its possible future action. Boulding, Kalra, Staelin& Zeithaml (1993) measure consumers' travel intention in two ways that are re-travel intention and recommend to others. Xu Shi et al (2009) integrated researches questionnaires of Bansal and Voyer(2000), Dodds, Monroe and Grewal (1991), Grewal, Monroe and Krishnan (1988) on behavioral intention to build a nine dimensions of travel intention concept referring Zeitham (1988) studies.

Saleh and Ryah(1993) considered that the characteristic elements could be the main driving factor to attract travelers to participate in activities including the program features and the content itself and the surrounding environment. William (1997) pointed out that when organizing a festival, the main elements to attract tourists to the program including the significance itself, the environment, relationship between activities and social culture, providing visitors to understand traditional culture, the activity and specialty itself, and

reflect community values and other factors. Characteristic of tourist destinations is one of the characteristic factors to attract people to participate in activities.

2. 3. Tourism destination image and travel intentions

Beerli & Martin(2004) analyzed individual tourism destination image is simple cumulative impression formed on different media or information source Tasci, et al (2007) concluded the tourism destination image was an interactive system composed of thought, ideas, perspectives, formed by the feelings and wishes. Furthermore, Tasci (2007) enlarged destination image research from visitors inner pychologic activity extends to the travel behavior. Cognitive and emotional images together constitute the comprehensive image of tourist destinations (Baloglu, 1999; Pike & Ryan, 2004)。Martin & Bosque (2008) studied the psychological factors in the formation of destination image and proposed values and motives and other psychological factors can significantly affect the formation of destination image.

Passengers' cognitive or emotional on the tourist attractions affect their travel intentions. Court & Lupton (1997) presented that there are many selected factors influence passenger, the destinations image has a decisive impact on travel intentions . Ahmed (1991) also considered that when people think of a tourist product is very important, which is people thinking rather than facts, therefore, it may be a tourist destination image instead of the actual information that affect the visitors choice to visit a tourist destination.

RESEARCH MODEL BUILDING

3.1. Research model

Research model was described the relationship among destination image, exhibition and travel intention (see Figure 1). Exhibition has the exhibition promotion and attraction of the exhibition two variables; Destination image includes the affection image cognitive image of environmental and humanities three variables.
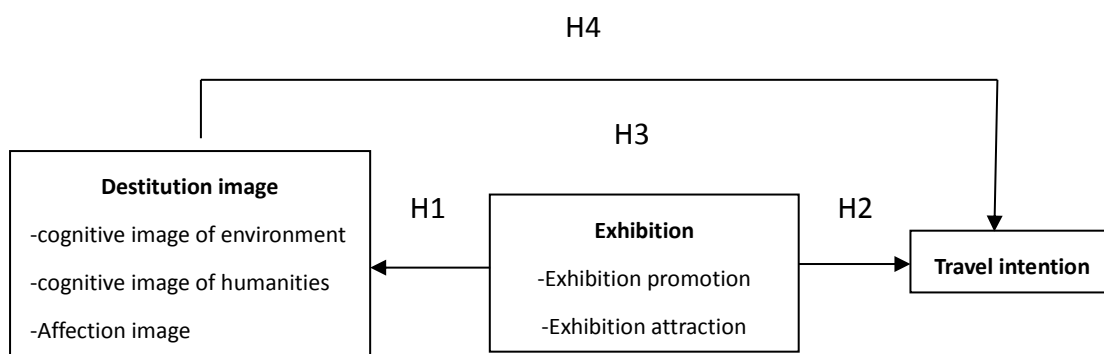

Figure1 Research model

3.2. Research hypotheses

3.2.1 Exhibitions and tourism destination image

H1: Exhibitions have a positive effect on tourism destination image

H1-1: Exhibition promotion has positive impact on tourism destination image

3.2.2 Exhibitions and travel intentions

H2: Exhibitions have a positive effect on travel intentions

H2-1: Exhibition attractions have a positively impact on travel intentions

3.2.3 Travel intentions and tourism destination image

H3: Tourism destination image has positive impact on travel intentions

H3-1: Cognitive image of the environment has a positive impact on travel intentions

H3-2: Cognitive image of the humanities has positive impact on travel intentions

H3-3: affection image of tourist has positive impact on travel intentions

3.2.4 The mediation of exhibition

H4: exhibitions has intermediary impact between tourism destination image and travel intentions

METHODOLOGIES

4. 1.   Questionnaire design

The questionnaire was designed as the survey instrument including all constructs of the proposed model to investigate the hypotheses of interest. The questions in the questionnaire are based on a review of the literature and specific destination characteristics.

The questionnaire consists of three parts. Part 1 of the questionnaire deals with the measurement of destination image with14 attributes extracted from previous studies. Part 2 deals with the measurement of exhibition with 20 items, and Part 3 deals with the measurement of travel intentions with 13 items.

4.2. Sample design and data collection

Pre-test to measure 47 Macao tourists in case to avoid missing in the questionnaire ensure the Cronbach's Alpha coefficients of validated questionnaires reliability and measurement reliability, stability and internal consistence. Cronbach's Alpha data for the tourism destination image, exhibition and travel intention are respectively 0.724, 0.761 and 0.916, showed that the reliability of the scale of this study is quite high.

Investigator ware the visitors participate in the dynamic Macao promotion week in Qujiang International Convention Center venue in Xi 'an from December 13 to 15 in 2013. Applying the convenient sampling technique, a total number of 450 questionnaires were delivered and 393 usable samples were obtained, resulting in a response rate of 87.33%.

EMPIRICAL RESULTS

The data analysis was conducted in two stages. First, exploratory factor analyses using principal component method with varix rotation were conducted on destination image, exhibition and travel intention to examine their dimensionalities and psychometric properties. On that basis, the relationships of destination

image, exhibition and travel intentions were empirically tested using IBM SPSS Statistics 20 Statistical software in the second stage.

Table 1 Facets of the hypothesis test

Hypothesis	β	R²	F	Results
H1. Exhibition → Destination image	0.527 ***	0.278	150.374	Accept
H1-1. Exhibition promotion → Destination image	0.445***	0.198	98.582	Accept
H2.Exhibnition → Travel intentions	0.489***	0.240	123.144	Accept
H2-1. Exhibition attraction → Travel intention	0.429***	0.184	88.337	Accept
H3. Destination image → Travel intentions	0.339***	0.115	50.639	Accept
H3-1. Environment image→ Travel intentions	0.185***	0.034	13.840	Accept
H3-2. Humanities image → Travel intentions	0.281***	0.079	33.449	Accept
H3-3. Affection → Travel intentions	0.407***	0.166	77.647	Accept

*p<0.05, **p<0.01, ***p<0.001

Table 2 Tourist destination image intermediate effects between travel intentions and exhibitions

Model	Model 1		Model 2	Model 3
Dimensions	Exhibition	Travel intentions	Travel intentions	Travel intentions
Tourism destination image	0.527***	0.339***	————	0.112*
Exhibition	————	————	0.489***	0.431***
R²	0.278	0.115	0.240	0.249
Adj. R²	0.276	0.112	0.238	0.245
F	150.374	50.639	123.144	64.491

Table 3 Travel intentions intermediate effects between tourist destination image and exhibitions

Dimensions	Type III Sum of Squares	df	Mean Square	F	Sig.
Tourism destination image	14.351	29	0.495	8.336	***
Exhibition	23.017	26	0.885	14.913	***
Tourism destination image-exhibitions	35.978	98	0.367	6.184	***

CONCLUSIONS

This study investigate the relationship among exhibition, tourism destination image and travel intentions. Exhibition has a significant positive effects on tourism destination image is consistent with Gouveia (2007). The exhibition has a significant positive impact on travel intentions is consistent with Wang Wenzong, Zhu Ying Qian (2011) And Liu Yonglun (2011). Tourist destination image has a significant positive impact on travel intentions. This find is consistent with Zheng Zhong (2006) And Yi Xiaoshi (2012). Exhibition has a positive intermediary impact on the tourism destination image and travel intention.

Dynamic Macao promotion week activities only has three day activities, around supporting of activities and promotion of packaging should strengthening, or although activities content rich in different city, so publicity benefits from related media reported and displayed shown that the activities only attract near residents participate in, cannot expanded for a hall city event.

Hosted Organize can address the needs of different ethnic groups, design different and kind of activity, so as to enhance people's perceived value, not only can increase the degree of people's affection for the exhibition, can also increase their travel intentions to destinations and the word of mouth publicity effects.

Tourism destination image is attracting people to a direct source of tourism, is a key factor in people's choice of a tourism destination, which they will choose a destination depends on the tourism destination image in their minds, so tourism destination image are established in the minds of people, to make them more attractive.

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IRANIAN IDENTITY IN LOGOTYPE DESIGN

Maryam Lari*, **Yasaman Yazdi***

Maryam Lari, Assist. Prof. Dr., Islamic Azad University, Islamshahr Branch,
Tehran, Iran, E-Mail: lari_maryam@yahoo.com*
Yasaman Yazdi, Ph.D. student, Department of Art and Architecture, Islamic Azad University,
Science and Research Branch, Tehran, Iran, E-Mail: yazdiyasaman@yahoo.com**

ABSTRACT

Abstract — In psychology and sociology, identity is a person's conception of his own or group affiliations. Group identity can be gained from nationality, ethnicity, religion or locality. Culture is an important factor in shaping identity and one of the main characteristics of cultural heritage is its "pictorial reservoir". Increasing interconnectedness among cultures may suppress "Third World" identities. Some artists, among them graphic designers, try to vivify traditional elements and techniques. They combine the intelligence raised from international knowledge with their native self-awareness and expand the domains of their relations with addressed people. The success of a graphic design, in its modern application, is measured by how well a specific message is conveyed to particular groups of people; that is why it is important for a graphic designer to know about visual elements which possess symbolic meanings. The meaningful forms and images acquire their significance from various domains such as ancient myths, religious notions and folklore tales. Through ages, figurative concepts have never remained fixed and permanent; and their essence changed according to historical and cultural events. For instance, many 19th century newspaper logos not only mirror symbolic contents but also represent historical events of the time. For designing logotypes, graphic designers profit from Persian heritage as an important part of collective identity and consider direct implications as well as oblique ones. This article surveys about 300 logos containing cultural references. Human, animal, vegetal, and geometrical elements, as well as Persian calligraphy and architectural schemas, have been excellent inspiration sources for designers. Semiology is the main approach of this article and semiotic codes, containing cultural hints, have been studied. As a conclusion, it is remarkable that graphic designers tried to pass from overt implications to more cryptic semantic layers and expand the limits of their visual expression.

Keywords — Iranian Identity, Logotype Design, Sign.

INTRODUCTION

Cultural identity, as part of the self-conception and self-perception, is feeling of belonging to nationality, ethnicity, religion, social class, generation, locality, and any kind of social group that have its own distinct culture; in this way, cultural identity is both characteristic of the individual but also to the culturally identical group that has its members sharing the same cultural identity [2]. According to Shindler, Since one of the main characteristics of a culture is its "historical reservoir," many if not all groups entertain revisions, either consciously or unconsciously, in their historical record in order to either bolster the strength of their cultural identity or to forge one which gives them precedent for actual reform or change [1]. Cultural globalization involves the formation of shared norms with which people associate their individual and collective cultural identities. This Phenomenon also occasions transmission of ideas and values and common consumption of cultures diffusing by popular media and international travel. As the result of globalization, some artists are more engaged to their own cultural identity; Graphic designers try to vivify historical elements and techniques and stick to their own figurative tradition. Graphic designers profit from Persian heritage as an important part of collective identity. They combine the intelligence raised from international knowledge with their native self-awareness and expand the domains of their relations with particular addressed people. Charles Sanders Peirce (1839-1914), American philosopher, proposes three main definitions of the signs. This is the typology of the sign as distinguished by phenomenological category of its way of

denoting the object. This typology emphasizes the different ways in which the sign refers to its object: An *icon* which also called likeness and semblance is a sign that denotes its object by virtue of a quality. The *icon* (for instance, a portrait or a diagram) resembles or imitates its object. An index is a sign that denotes its object by virtue of an actual connection involving them, one that he also calls a real relation in virtue of its being irrespective of interpretation. It is in any case a relation which is in fact, in contrast to the icon, which has only a ground for denotation of its object, and in contrast to the symbol, which denotes by an interpretive habit or law. A symbol is a sign that denotes its object solely by virtue of the fact that it will be interpreted to do so. The symbol consists in a natural, conventional, or logical rule, norm, or habit; thus, a symbol denotes by virtue of its interpretant. To know what a given sign denotes, the mind needs some experience of that sign's object. In that context Peirce speaks of collateral experience, collateral observation, collateral acquaintance, all in much the same terms.

HUMAN ELEMENTS

For designing logos[1], Iranian graphic designers benefit from meaningful elements taken from Persian "pictorial reservoir" which may be divided into some basic categories such as Human, animal, vegetal, or geometric elements. The use of human elements in newspaper logos comes back to 19th century in Iran. Constitutional movements in that era were supported by intellectuals who spread their ideas by printing them in countless newspapers. They encouraged people to riot against dictatorship led by the king himself (Shah). Pioneers of graphic designers illustrated epic and mythical heroes as well as ordinary people in the logos of some van printed matters. As a good example, "Kaveh" was a revolutionary newspaper whose name was taken from a national hero; it is narrated in epic texts and poems that Kaveh, a blacksmith, raised his apron as a flag and led people to overthrow the cruel ruler. The frame of the logo is pierced by the flag, indicating the deconstruction aspect of the movement. The angles were also illustrated as winged human beings; the most popular example of this kind belongs to a newspaper called *Soor Esrafil* (Seraph Horn). It is mentioned in religious texts that in the doomsday, Seraph will blow in his horn and revive all dead mankind. Considering the rebellious atmosphere of the time, the logo indicates the necessity of raising awareness and uprising against autocracy. Ordinary people, and representatives of different classes, such as poor peasants, were also illustrated in newspapers logos (fig.1). As the result of constitutional movement, demons appeared in newspapers as political symbols, and animal-like horned men with a long tail symbolize despotism, particularly dictators.

Figure 1 Newspaper Logos in 19th Century

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[1] -A logo or logotype (Greek: λόγος logos "word" and τύπος typos "imprint") is a graphic mark, emblem, or symbol commonly used by commercial enterprises, organizations and even individuals to aid and promote instant public recognition. Logos are either purely graphic (symbols/icons) or are composed of the name of the organization.

ANIMAL ELEMENTS

Images of animals were demonstrated in various Persian art works and handicrafts during long periods of time; Animals and birds such as lions, antelopes, cows, eagles and pigeons symbolize multifarious concepts. Antelope as an index, as well as a mythical symbol (rain Goddess) appears in the logo of "Iranian Environmental Protection Agency". Accompanied by patterns of "sun" and "water", the logo not only generally represents "nature" but also embodies rich cultural background. Homa and phoenix have nearly the same notions; it is quoted in epic poems, like "Shah-nameh", that both of them bring happiness to people. Homa (birds' king), with countless ancient implications in mythical texts, has been manifested in the logo of "Iran Air" The main image has been taken from a statue in Persepolis which is very famous in the world; that is why it can be a suitable choice for an international aviation. In Mithraism, image of lion symbolizes Mithra, power and light. The lion-and-Sun image has been an allegory for powerful cohesion of kingdom and religion, so the combination of this icon with sword appeared on many Persian flags (presenting kingship dynasties), as well as logos of state newspapers in 19th century (fig. 2).

Figure 2 Logos Inspired from Animal Symbols

VEGETAL PATTETNS

The word" Eslimi" which is also known as Arabesque, defines some simplified vegetal forms with very fine curves. This word is derived from "Islam" and sometimes called "Islami" too. In Persian art, these decorative forms were frequently used in paintings, book illustrations, inscriptions and architecture; and somehow they represent traditional art; that is why Iranian graphic designers are so fond of Eslimi forms. Eslimi forms arise from the Islamic view of the world. To Muslims, these forms constitute an infinite pattern that extends beyond the visible material world; they concretely symbolize the infinite nature of the creation of Allah and convey spirituality the art of other religions. The Eslimi patterns in Islamic art are often used to symbolize the transcendent, indivisible and infinite nature of God. On the other hand, Eslimi shapes are symbol of "life tree" which attributes various notions. Eslimi forms appear in their iconic meanings generally displaying plants and flowers, but their usage for revealing symbolic significance is more dominant; for instance they exist in the logos of many cultural centers (fig. 3).
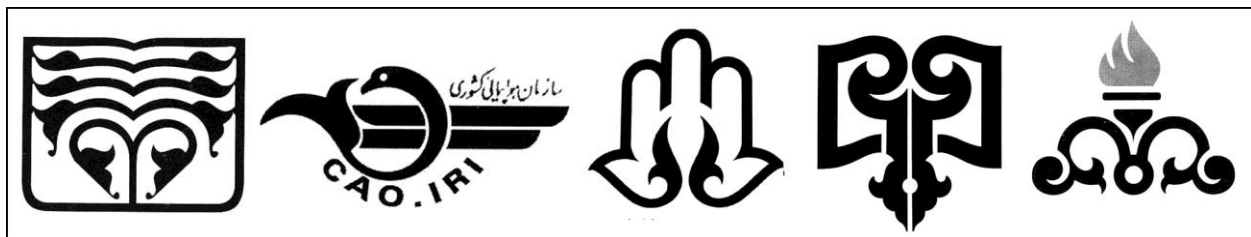

Figure 3 Logos Inspired from Eslimi Forms

The Persian word "Laleh" (Tulip in English) derived from Sanskrit, means "red". The image has been illustrated many times; for instance, it was illustrated on a stone seal in 20th century BC. In Sassanid era; some icons of tulip were carved on seals as well as silver dishes. In Persian literature and poems, tulip is generally a symbol for

"love" but in revolutionary texts, it is a metaphor for martyrdom and it is believed that red tulips grow whenever the martyrs blood pour down the soil; so the tulips images were main parts of the logos of constitutionalist newspapers in 19th century. After Islamic revolution and especially during Iran-Iraq war, the image of tulip was vastly used in posters, illustrations, murals as well as logos. In Zoroastrian myths, cypress was descended from heaven to be planted in front of a temple. In Persian texts and poems, cypress has been always a symbolic sign for "liberality". By repeating the image of this tree in the signs, the graphic designers evoke the notion of "Persian Garden". In the logos of the organizations attached to Iran-Iraq war, the images of cypress symbolize martyrdom (figs. 4 & 5).
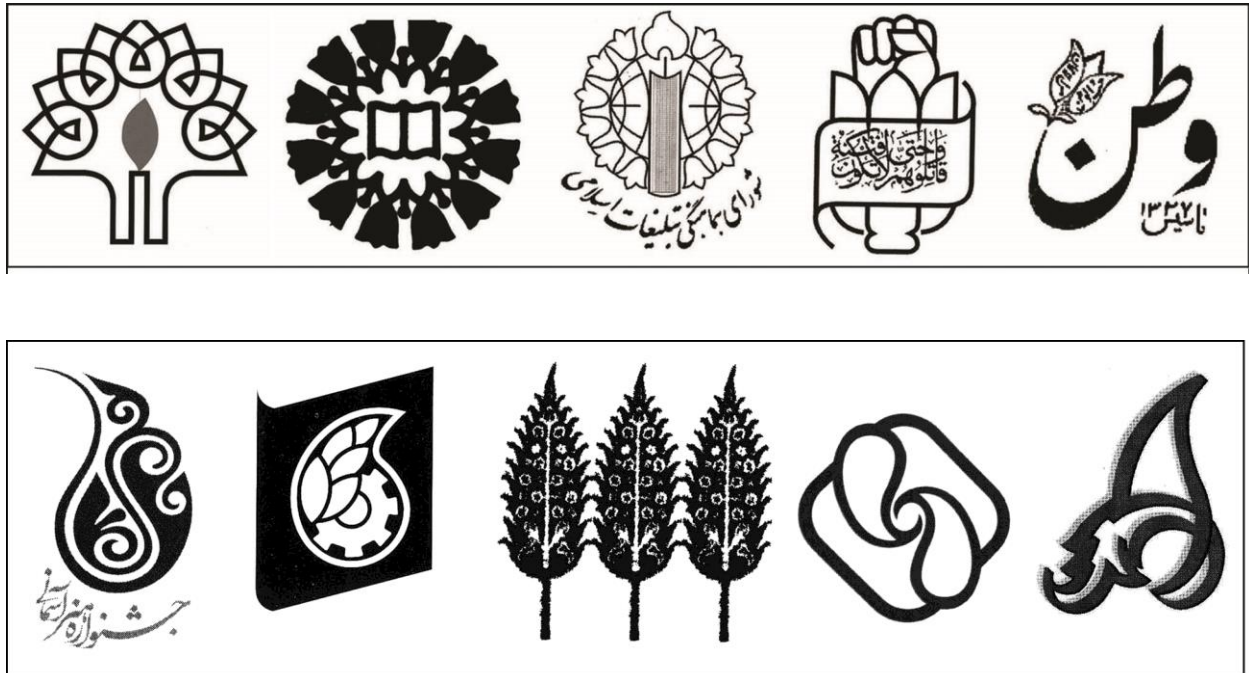
Figures 4 & 5 Logos with Symbolic Tulips and Cypress

ARCHITECTURAL ELEMENTS

Architectural elements are also used in some cultural logos. The main part of the logo of "Iranian National Museum" is taken from its façade. The building completed in 1936, was conceived as a modern building with a traditional façade. It is inspired by the pre-Islamic architecture of the Sasanian period as favored by the Pahlavi state. Being inspired from the famous arch of Ayvān (or Ṭāq)-e Kesrā, André Godard (1881−1965), specialist in Middle Eastern archaeology, designed Iran's first modern archeological museum. Graphic designers apply some elements of mosque, as the most manifest phenomenon of pious identity. The domes, often placed directly above the main prayer hall, may signify the vaults of heaven, and a common feature in mosques is the minaret, the tall tower that usually is situated at one of the corners of the mosque structure. These key elements not only represent direct religious inherence but also the cultural centers located in holy cities. The logo of a university in Mashhad composed of a book (symbol of awareness), and a dome as the symbol of the 8th Imam' shrine, placed in Mashhad (fig. 6).
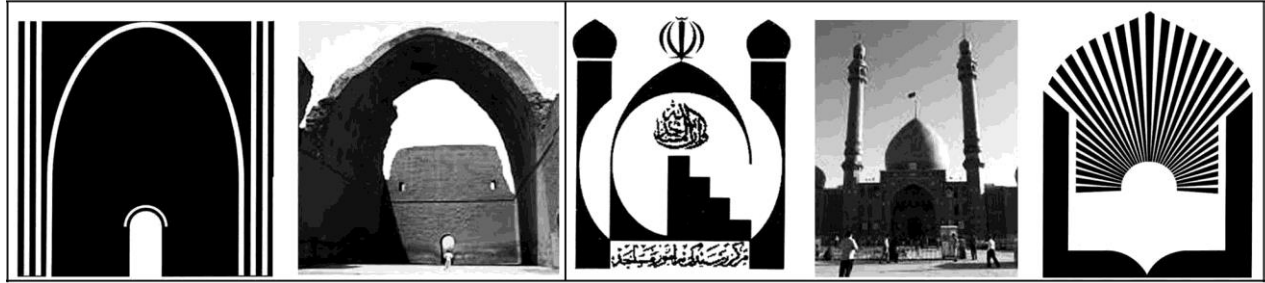
Figure 6 Logos with Architectural Elements

GEOMETRIC PATTERNS

In Islamic art, geometric patterns make up one of the most important non-figural types of decoration. They also include calligraphy and vegetal patterns and have been appeared in combination with non-figural or figural representation. Geometric patterns are popularly associated with Islamic art, largely due to their aniconic quality. They not only adorn the surfaces of monumental architecture but also function as the major decorative elements on all types of handicrafts. The most well-known geometric form called "Sun Carrousel" is in direct connection with "Swastika". According to Reza Assasi, Swastika is a geometric pattern in the sky representing the north ecliptic pole centered to Zeta Draconis. He argues that this primitive astrological symbol was later called the four-horse chariot of Mithra in ancient Iran and represented the center of Ecliptic in the star map and also demonstrates that in Iranian mythology, the cosmos was believed to be pulled by four heavenly horses revolving around a fixed center on clockwise direction possibly because of a geocentric understanding of an astronomical phenomenon called axial precession. He suggests that this notion was transmitted to the west and flourished in Roman Mithraism in which this symbol appears in Mithraic iconography and astrological representations [6].

In Islamic art, the symbolic notions of "Sun" are presented with a geometric shape called "Shamseh". This word comes from the Arabic word "Shams" means Sun. Representations of "Shamseh" appear with numerous shapes in decorative arts, such as religious architecture, book illustrations, and painted tiles. This motif has been also the principal part of the logos of various organizations.

"Shamseh" usually symbolizes "light of God", "multiplicity in unity", and "oneness in plurality". "Shamseh" is generally the major part of the logos of some publishers, cultural institutions, and Islamic foundations. In some cases, symbols of national identity have been added to this shape; the logo of "Persian booth" in an international fair is a combination of this motif with a simplified lineal map of Iran (fig. 7).

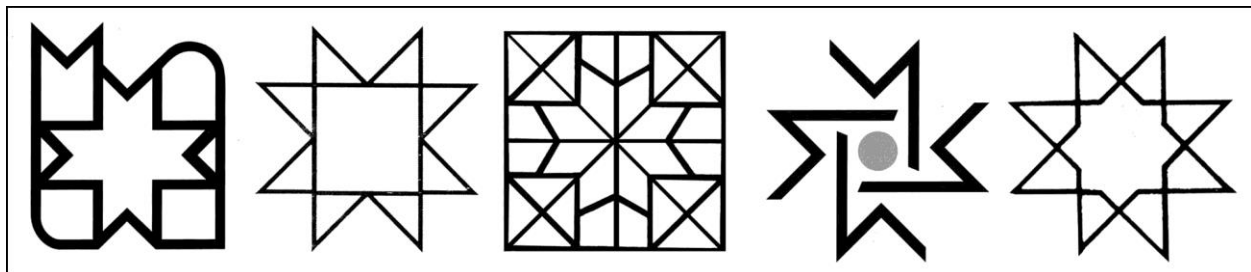Figure 7 Logos with Geometric Patterns

CALLIGRAPHIC ELEMENTS

Calligraphic design is omnipresent in Islamic art. Apart from Qur'anic verses written in Arabic, various calligraphic elements in Persian, may be served as decorations included in secular objects like coins, tiles and miniatures. Graphic designers used calligraphic elements as a base for creating the logotypes. Kufic is the oldest

form of the Arabic script whose style emphasizes rigid and angular strokes and later developed into several varieties, including floral, foliated, plaited or interlaced, and bordered Kufic. The common feature in using the Kufic script is the angular, linear shapes of the characters which range from very square forms to flowery and decorative ones; so it is a favorite base for designing logotypes.

Nasta'liq is a cursive style originally devised to write the Persian language for literary and non-Qur'anic works. Nasta'liq is thought to be a latter development of the naskh and the earlier ta'liq script used in Iran. The nameta'liq means 'hanging', and refers to the slightly steeped lines of which words run in, giving the script a hanging appearance. Letters have short vertical strokes with broad and sweeping horizontal strokes [4]. The shapes are deep, hook-like, and have high contrast [5]. Being called "Calligraphic Bride", Nasta'liq is believed to be in perfect harmony with Iranian literature and poetry; so its usage for creating logotypes is numerous (fig. 8). Apart from Kufic and Nasta'liq , different forms driven from other calligraphic elements, have been prevalently used by Iranian graphic designers.
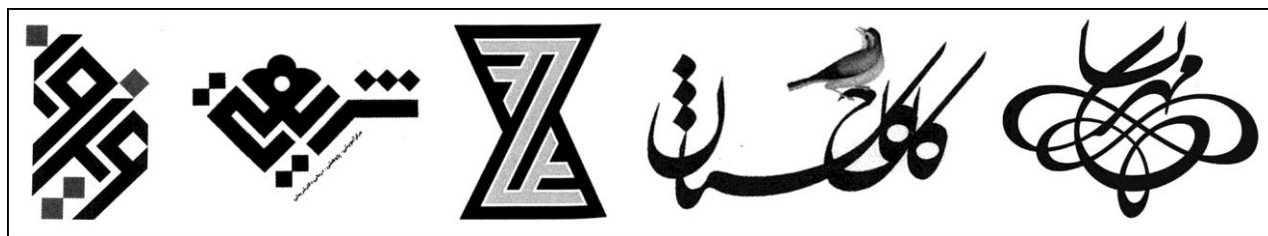

Figure 8 Logos Inspired from Traditional Calligraphic Elements

CONCLUSION

It is usually mentioned that globalization helps developing nations to industrialize much faster through increased technological advances, which may seem quite evident in new methods of visual communications like graphic design. On the other hand, cultural globalization involves the formation of shared norms and knowledge with which people associate their individual and collective cultural identities. This process may weaken national sovereignty and identity; that is why artists, among them graphic designers, feel the jeopardy of losing self-identities and try to use some elements of "pictorial reservoir" in their works. Charles Peirce proposes three main definitions of the "sign" according to the ways it refers to its object: An icon that resembles or imitates its object, an index that denotes its object by virtue of an actual connection and a symbol that denotes by virtue of its interpretant, and therefore acts as a cultural norm. Logos (or Logotypes) are graphic marks or symbols commonly used by organizations or even individuals to aid instant public recognition. Logos are either purely pictographic or a composition of the name of the organization and an image. In 19th century, new tendencies of designing logos (in its modern concept) commenced by photography and printing industry, and were simultaneous with constitutional movements in Iran. The logos of revolutionary newspapers were usually compositions of complex pictographic signs with the terms expressing particular purports.

Human, animal, vegetal, geometric, calligraphic and architectural elements were vastly used as thematic sources for designing logos. Human elements in the form of mythical characters and also ordinary people were frequently applied in 19th century newspaper logos. Epic personalities like "Kaveh" who generally symbolized heroism, turned up as the national revolutionary characters of the time. On the other hand, human-animal creatures such as angles and demons were illustrated in the logos, possessing up-to-date notions. As the result of the rebellious atmosphere of the time, some religious implications of human elements were also substituted by novel concepts.

The images of animals and birds in logotypes represent distinct senses and act as indexes, as well as mythical symbols. As an index, the effigy of animals appears in the logos of institutions related to real animals, like zoological gardens, protected areas or wildlife parks. In some logos, mythic creatures like "Homa" and phoenix which were often quoted in epic poems, present with their symbolic implications; this is the same about "lion" which is an allegory for cohesion of kingdom and religion.

Vegetal elements are also major parts of logos. "Eslimi" (a simplified vegetal form) is a symbol for infinite nature of the creation of Allah and its usage for revealing symbolic significance is very dominant. "Eslimi" forms also appear in their iconic meanings, generally displaying plants and flowers. Image of tulip has been also a symbol for "love" and the notion of "Persian Garden". Its significances were altered in the logos of constitutionalist newspapers as well as Iran-Iraq war illustrations; this image became a metaphor for martyrdom in some revolutionary texts. This is the same about the image of cypress which has been evermore a symbol for "liberality", but in the logos of the organizations attached to Iran-Iraq war, this tree symbolized "martyrdom".

Even though the architectural elements are frequently applied as icons in the logos of some concrete locations like museums and religious sites, but in many cases they are very much inspired from ancient monuments and cultural heritages conveying symbolic notions. Geometric patterns like "Sun Carrousel", "Swastika", and "Shamseh" with their countless significations are very much associated with Islamic art. These motifs repeatedly exist in the logos of publishing companies, cultural institutions, and Islamic foundations; they symbolize some notions like "light of God", "multiplicity in unity", and "oneness in plurality". It may be deduced that the symbolic implications of geometric patterns in logos are more dominant.

Calligraphic elements of Kufic, naskh, Nasta'liq, and… are also regularly used by artists. Kufic script with its angular shapes and decorative details is a favorite base for designing logotypes. On the other hand, it is believed that cursive style and short vertical strokes of Nasta'liq is in perfect harmony with Iranian literature and poetry; that is why it is prevalently used by Iranian graphic designers. As a conclusion, it is remarkable that graphic designers tried to pass from overt implications to more cryptic layers and expand the semantic limits of their visual expressions; they also improved the process of their communications with particular groups of people.

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THE EMPHASIS OF SOCIAL WORK
IN DEVELOPMENT PLANS

Nihat Murat BARTAN[*] Beraat AKPINAR[**] Yücel DUMAN[***]

Selçuk University Department of Social Work, Selçuk University Campus Health Sciences Faculty, Konya, 42250, Turkey,*
Selçuk University Department of Social Work, Selçuk University Campus Health Sciences Faculty, Konya, 42250, Turkey,**
Selçuk University Department of Social Work, Selçuk University Campus Health Sciences Faculty, Konya, 42250, Turkey,***
Tel: +90 5512486620, Fax: +90 3322400056, Email: nihatbartan@selcuk.edu.tr

INTRODUCTION

The concepts of social work and social assistance are often confused with each other and can be used interchangeably. Although it is claimed that social assistance is a concept that encompasses social work, it is an issue on which there have been discussions and disputes so far. While some experts accept social assistance as a tool of social security, the others claim that it is an application area of social work. Social assistance, in broader terms, includes social work, public assistance and all that are required to perform them. It seems not written in the implementation of those plans when we look overall. The first democratic development plans in the world were introduced in Turkey in 1931. Turkey, while entering the planned period in 1963, felt the need to prepare a 15-year perspective plan which determined the priority of goals to evaluate the socio-economic potential of the country and to be able to steer this potential in the best possible way with plans in the medium term.

In the very beginning when welfare state principle was adopted in 1960 there was more developments. Even if applications were increased, the facts of an increased income gap, unemployment and an increased number of the poor should not be overlooked.

Keywords: social services, social work, development plans,

1 ile başlayan bir şey yazmak lazım
1.1 Social Work

The concepts of social work and social assistance are often confused with each other and can be used interchangeably. Although it is claimed that social assistance is a concept that encompasses social work, it is an issue on which there have been discussions and disputes so far. While some experts accept social assistance as a tool of social security, the others claim that it is an application area of social work. Social assistance, in broader terms, includes social work, public assistance and all that are required to perform them.

Both social work and social assistance are based on the belief that every individual should equally benefit from services and facilities provided for a society. Both concepts embody the essence to avoid social unrest, to reduce social and economic inequities between the people and to bring prosperity to the people within the bounds of possibilities.

In social work, empowering the people is the process of helping individuals, families,, groups, organizations and communities increase their power and influence on personal, interpersonal, socio-economic and political aspects by improving their conditions [Zastrow, 2014].

social work is a job that is based on the principles of human rights and social justice; supports social change, enables problem solving in human relationships to improve people's well-being, aims to empower and liberate and thus interferes people's interaction with their environment by making use of the theories on human behavior and social systems [Duyan, 2012].

1.2 Development Plans

The first democratic development plans in the world were introduced in Turkey in 1931. These plans are an important economic reform which Atatürk gave as a gift to the Turkish nation. These development plans were prepared in order to meet the needs of the people ideally despite the scarce resources at hand. Ataturk prepared First Development Plan in 1933-1938 while the second Development Plan was prepared in 1938-1944 The main objective

of both plans was to ensure that the products whose raw materials could be found in Turkey would not be imported and be produced in Turkey.

Turkey, while entering the planned period in 1963, felt the need to prepare a 15-year perspective plan which determined the priority of goals to evaluate the socio-economic potential of the country and to be able to steer this potential in the best possible way with plans in the medium term.

Since the establishment of State Planning Organization, 9 Five-Year Development Plans have been put into practice. Within the scope of economic philosophies and approaches of the plan; pre-1960 plans were statist, partial, 1960-1980 plans were holistic and based on mixed economy, 1980-2000 plans were liberal, and strategic. Before 1980,in industrialization, "import substitution policies" were routing while after 1980 the policies of "transition to an open economy" were routing.

First and Second Five-Year Development Plans was prepared in accordance with the 1963-1977 perspective plan . While First Five-Year Development Plan focused on the basic infrastructure investments, employment issues and reorganization matters, Second Five-Year Development Plan adopted in particular the principle that the industry sector should have an immersive nature in economy.

As a result of the changing world conditions and Turkey's relations with the European Economic Community, a new perspective plan covering the period of 1973-1995 was prepared. The new perspective plan projected the desired income level by 1995 and the structure of production and aimed to evaluate the existing potential at the highest level.

According to the new perspective, Third Five-Year Development Plan aimed to increase the income level, to speed up industrialization especially in sectors producing intermediate and investment goods and to reduce the dependence on external sources.

Forth Five-Year Development Plan aimed at improving the balance of payments based on mainly public sector-targeted industrialization strategy and making the economy self-sufficient.

Fifth Five-Year Development Plan mainly focused on the development policies that favored the outreach of the Turkish economy and exports.It stipulated the minimization of public intervention in the economy, the implementation of a liberal foreign trade and foreign investment policies, the enhancement of the investments in infrastructure and housing and the reduction of the international differences related to development levels.

The main priorities of Sixth Five Year Development Plan can be divided into three: to gradually reduce inflation, to direct resources to the manufacturing industry at an increasing rate and to give more weight to social policies.

Seventh Five-Year Development Plan, which was prepared to create the necessary infrastructure for 2000 and was put in practice in 1996, put forward the perspective as to taking into account the changing economic and social development of the era in terms of priorities and policies.

Since the mid-1970s, in most of the developed countries, especially where the technological development got slower, there had been some blockages leading to the questioning of interventionist and welfare state policies, which monitored that concrete fact. Now, It is clear that it is not possible to maintain these policies in a competitive world which the globalization accelerates, it is essential to take part in regional integration and the economies of the countries which cannot keep pace with this developments will be marginalized and shrink

In this context, Seventh Five-Year Development Plan was prepared to take structural and institutional precautions to overcome adversity during adaptation to the integration with the European Union and the whole world by force of changing world conditions, anticipating and avoiding a bottleneck.

Eigth Five-Year Development Plan (2001-2005) was put into force with Parliamentary approval and besides ensuring economic stability, was prepared to make structural and institutional arrangements, to increase competitiveness - and harmonization with the EU, to begin the creation of the infrastructure for the information age, to improve technology production and to grant priority to regional and provincial planning in reducing disparities in income distribution. VIII. Five-Year Development Plan is a dynamic and evolving plan encompassing medium and long term strategies globally and at country level.

Eigtht Five-Year Development Plan period was a period when the society increased the quality of life, a continuous and consistent period of growth started, the fundamental transformation for the European Union accession process was realized, Turkey was integrated with the world and attained a powerful, effective and respected position both in the region and the world.

Ninth Development Plan (2007-2013) coincided with a period when there was a rapid, multi-dimensional change and the competition intensified and the uncertainties increased. In this period when globalization is effective in all areas; individuals, institutions and nations have more opportunities and risks, the plan was a fundamental policy document that set forth the transformations to be realized with a holistic approach in Turkey's economic, social and cultural areas. In this context, Ninth Development Plan was prepared within the framework of the vision

of " a Turkey growing in stability, sharing income equally , having competitive power on a global scale, transforming into an information society, and which completed the adaptation process for the EU membership" and Long-Term Strategy Plan (2001- 2023).

METHODS

2.1 The Objective

The objective of this research is to evaluate the development plans made so far using qualitative research design in terms of social work. In this overall objective, the questions to which answers are seeked to be found at the end of the research are as follows:

1. What transformation has the perspective on social work in development plans undrgone?
2. To what extent aims for social work in the development plans have been carried out ?
3. What are the main highlights for social work in development plans?

2.2 Research Design

This study was designed based on qualitative research methods. Qualitative research can be defined as *"developing theories by evaluating the social phenomena in the environment in which they take place with the natural appearance based on observations, information or documents, interviews and by analyzing the acquired information"* [İslamoğlu, 2009: 180].Qualitative research is a method in which qualitative data collection methods such as observation, interviews and document analysis are used and a process that allows perceptions and events to reveal in a natural environment in a realistic and integrated manner is followed [Yıldırım and Şimşek, 2013: 45].

2.3 Collection and Evaluation of Data

In this research, the development plans were used for the collection of data. There have been ten development plans the first being in 1963. Firstly, the relevant parts about social work in the development plans were picked out by the researchers and were subjected to content analysis by two researchers. As a result of the content analysis, the researchers found particular themes. The common or similar themes determined by both researchers were accepted and those which were incommon were involved in the third research. Thus, the themes were agreed up on ensuring consensus. Accordingly, the data obtained from the development plans was divided into three main themes. In order to increase internal reliability and validity of the research findings quotations from the development plans were frequently made . The created themes were grouped as "social work" integrity-clutter " and " social justice "

During the evaluation of the data in the study, document analysis was made. *"Document analysis comprises the analysis of the written materials containing information about the fact/s to be researched. In qualitative research, in addition to methods of interviews and observations, written and visual materials related to the research problem may also be included in the study "[Yıldırım and Şimşek, 2013: 217].Document technique is a data collection tool used in the analysis and evaluation of specific records. Document technique provides convenience for researchers. The researcher finishes the research in a short time and cheaply. It also allows the researchers to focus on the issue directly (Ekiz, 2009). The most important factor to consider in document research is that documents must be impartial and objective. That is why, the consistency of various documents related to the same issues and areas should be determined by examining and comparing them [İslamoğlu, 2009: 188].*

FINDINGS

3.1 Social work

The purpose of the social work program is to eliminate social disorders appearing in various circles. This objective will be achieved through the work of the Government and various collaborating volunteer organizations (SPO, 1963: 423)

Medical social work, services related to mental health, social work in family planning field, school services, social counseling service, legal aid, social assistance to criminals can not go beyond the services by some relevant organizations in an uncertain order [SPO, 1967].

Social insurance and social work must take part in a social security system so that these two types of services can be complementary and supportive [SPO, 1967].

Social work will be carried out in integration under the control and supervision of the Government by ensuring voluntary contributions by the people of t [SPO, 1984]

Improving environmental health conditions and public education on health will be provided. In order to have a strong population structure, child health and the elderly care will be achieved through the elimination of various social disorders personal protection and social work programs [SPO, 1967].

The opportunities for «Legal aid» which is implemented to facilitate the protection of the rights of underprivileged people will be developed according to today's social work understanding [SPO, 1967]

However, as a result of industrialization and urbanization and thus traditional structure changes, there has been a growing need for social work such as day care centers and institutions to serve the children of working mothers [SPO, 1979].

In social work, it is essential to eliminate material, spiritual and social problems and meet the needs, to help preventing and solving social problems and to improve living standards [SPO, 1984]

Social issues such as assisting the implementation of population planning programs, helping to resolve issues out in poor neighborhoods of cities, elderly care, the adaptation of the disabled to work, the evictors' adaptation to work will be addressed in order to ensure the welfare of communities and people [SPO, 1963]

The care and raising of the children in need of protection, the prevention of juvenile delinquency, the solution of maladjusted and retarded children problems, preventing the abuse of child labor and ensuring the welfare of children will be the objectives [SPO, 1963]

As there is no trained staff in the field of social work, more staff will be trained and the existing School of Social Work will be developed [SPO, 1963]

As a result of industrialization, along with economic and social developments, women's active participation in working life and the demand for kindergartens and day care centers for the care and education of their children especially in big cities, has greatly increased. Today, there has been a growing trend in this field. During the planning period, there will be efforts to increase the capacity and the service efficiency of kindergartens and day care centers and to increase their level of qualifications and number to meet needs [SPO, 1984]

The private sector will encourage the opening of kindergarten, day care centers, nursing homes and other social facilities as a result of rapidly growing need for them [SPO, 1984]

The services will be organized to target care in family rather than in institutions. In cases where the care will be given in institutions, social integration will be given importance [SPO, 1989]

Foundations and private initiatives will be encouraged for the construction of the day care centers, kindergartens and dormitories, rehabilitation centers for the disabled, nursing homes and other social facilities [SPO, 1989].

Private sector initiatives in the field of social work will be promoted considering the effectiveness of the services [SPO, 1989]

It is essential to ensure poverty alleviation and effective social protection for the vulnerable persons and groups and delivering social work to those in need in an effective and consistent manner [SPO, 2000]

Activities by the private sector and voluntary organizations in social work will be supported [SPO, 2000]

In social projects about education, health, social work and sports, NGOs will be helped to act in cooperation with local authorities and private sector [SPO, 2000]

The main objective of the policies in human development and social cohesion is to raise the quality of life and welfare by providing basic public services to all segments of society and making them benefit sufficiently from a multidimensional network of social protection. The education and health care in the provision of basic public services; inclusive and sustainable health and social security systems in the development of the social protection network; effective social work, improving income distribution, social inclusion and poverty alleviation, protection and empowerment of culture, and the development of social dialogue policies will be the main priority areas [SPO, 2006]

Activities by local governments and non-governmental organizations in the field of social work will be supported [SPO, 2006]

In developed countries, the population of the elderly is increasing. Accordingly, problems such as the decrease in production and tax revenues, increase in health spending and social security imbalances will be obvious. These developments may further increase the pressure on how the public institutions provide social work [SPO, 2013]

The establishment of service standards in the field of social work and benefits, qualified personnel employment and the development of control, developing alternative models other than institutional care for children in need of protection, improving physical environmental conditions for the disabled, increasing the disabled's participation in education and the labor market, upgrading care services, diversifying the services for the increasing elderly population are still an important need [SPO, 2013]

The lack of qualified staff in social work and assistance will be eliminated, family care models will be developed and the standard and the quality of institutional care services will be improved [SPO, 2013].

3.2 Integrity –Disorganization

Social work which are to be carried out mainly with voluntary associations "Coordination Committees" will be established to ensure cooperation with public authorities at provincial level. Instead of using public resources with the organizations working in this field, the necessary measures will be taken to maximize their savings and use them in the most appropriate way. Public funding will be given to those who applies to voluntary savings. (SPO, 1963: 423). "social work Agency" will be established to carry out collaboration and employ a single source of funding for social work [SPO, 1963] social work in Turkey was carried out in accordance with the religious traditions and charitable efforts since the ancient times. Civil Law, the Turkish Penal Code, The Law of Protection of Children From Obscene Publication, Public Health Act, Municipal Law, Business Law, Physical Education Law, the Law of Protection of Children in Need, Regulations on the Working Conditions of Pregnant and Breastfeeding Women, Declaration of Legitimation Code, the Law on the Establishment of social work General Directorate, Guardian, Ward and Inheritance Regulation help officials realize the activities and distribute tasks to different organization on this issue.

Social Security and Labor Act and the Civil Servants Law brought new opportunities to public employees and workers in terms of social work [SPO, 1967]

As a national institution in Turkish society with the characteristics of social work and aid, foundations will be encouraged in accordance with the culture and without a distortion in the characteristics of these foundations [SPO, 1984]

Social welfare services in Turkey are carried out in a dispersed order by various public and private organizations. A certain level of services for large groups which do not have a certain standard and are therefore not effective will be incorporated within "social work Agency" if they can be managed from one place.

These institutions will also provide collaboration among the activities in the field of social work. Before the establishment of the institution and among the organizations working on the same subject, cooperation will be held via "Coordination Boards". Local authorities and central government services will work together in unity of services. (DPT, 1967: 232) social work legislation which is prepared in detail to respond to various social questions will provide a whole benefit and will be evaluated in the way that will allow influence, restrictive legislation will be abolished and new provisions for the gaps will be brought [SPO, 1967].

Ensuring a coordinated manner in dealing with numerous and dispersed services in the area of social assistance and welfare in the Third Plan period is essential to the integrity of service, saving, personnel, employment and social security policies [SPO, 1972].

In the period of III. Plan, the State institutions, semi-official and voluntary organizations in Turkey provide services with the aim of social work and welfare, but these services seem to be disorganized in present circumstances and disconnected from each other. When applications are considered in general, the services of the State and voluntary organizations appear to be far from meeting the requirements in terms of both quantity and quality (DPT, 1979: 143) Apart from the dissemination of the social security system, elderly, disabled, orphans, vulnerable children, young people with social problems, retarded and other disabled groups need to have social work and aid, which can be realized through nursing home, kindergarten, rehabilitation center and other social work facilities. These all will be realized with the establishment of social work institution that will gather all the services under itself [SPO, 1979].

A coordination will be established among the state owned social work providers and voluntary organizations to ensure the optimum use of available resources [SPO, 1984].

social work and assistance is not only given to the people in need. In order to use it as a tool in the distribution of growing prosperity all the related regulations and planning tasks will be completed in the plan period. [SPO, 1984]

To provide the maximum assistance from the traditional social welfare institutions, information, guidance and incentive system will be activated [SPO, 1984].

In meeting the growing needs of the family from growing social work and assistance, standardization will be given priority and voluntary cooperation will be encouraged in this field (6th Development Plan)

The protective and preventive applications will be given priority in social work and assistance programs. (6th Development Plan)

Inadequacy and clutter is continuing in social work and assistance, the importance of the need to create a nationwide common and effective social work network has increased [SPO, 1995]

In the implementation of social work, cluttered organizational and financial structure, the problems emerging due to lack of coordination and cooperation between institutions remain important [SPO, 2000].

A common criteria and standard of service has not been established among the institutions and organizations engaged in providing public relief and cash benefits for groups in economic deprivation or in need of social assistance [SPO, 2000].

In order to reduce poverty and provide effective social protection to the needy individuals and groups, social work and aid system will be restructured. In this context, cooperation will be provided between public institutions and organizations that provide social work and support local authorities and voluntary organizations [SPO, 2000]

To determine the individuals and groups that will get benefit from social work and support, a study has been started to create criteria. However, for the lack of cooperation between institutions in the system and the shortage of qualified staff, a service at the desired level cannot be provided for the ones really in the need. Furthermore, there is still the need to enhance cooperation with voluntary organizations in social work and assistance [SPO, 2006].

For the removal of clutter and ensuring the integrity of services in the field of social work and support, institutions operating in this field have been restructured under the Ministry of Family and Social Policies [SPO, 2013].

Social work is carried out by various public bodies and volunteer organizations unscheduled and diffusely. The number of trained personnel in this regard is inadequate [SPO, 1963].

Social assistance and welfare services in Turkey are carried out by (151) various organizations uncoordinatedly. The establishment of social work Authority that will ensure to carry out these activities in a scheduled way has not been actualized. Therefore, there are dilemmas between the services, intricacies, gaps and mismatch of work of the services presented. Concordantly, the level of protected and raised children is far lower children in the need of protection in the total [SPO, 1972].

Increasing productive employment and people's starting their own businesses will be supported. Direct aid system to improve the welfare of low-income groups will be developed and education, health and other social work that this group get benefit from will be supported. In this context, the Social Assistance and Solidarity Fund, in order to increase the welfare of social groups below the poverty line, with a new organization an effective system will be built [SPO, 1995].

In order to develop social work and aid for the poor and other risk groups- children, elderly, disabled, and special interest groups; a new enterprise responsible for the management and coordination organization structure of all kinds of social work and welfare programs of the government will be created [SPO, 2000]

Establishing common criteria and standards in the social work and assistance, legislative efforts to ensure efficient use of resources will be made [SPO, 2000]

Social Assistance Basic Law, governing the social assistance programs and determining the basic principles of social assistance will be adopted [SPO, 2000]

Public institutions and organizations that provide social work and assistance will be in co-operation with local authorities and voluntary organizations [SPO, 2000]

In order to provide more effective service to the target groups; Social assistance and services will be restructured. [SPO, 2000]

Within the framework of the criteria to be determined assistance to poor families will be made, in this context, existing applications will be reconsidered [SPO, 2000]

Social protection information system will be created, beneficiaries of social assistance and services sector will be determined in an objective manner and the results of the implementation will be monitored [SPO, 2000]

In the social work and aid system, equality, social justice, the principles of efficiency and effectiveness will form a basis. To determine the people who will benefit from the system, a common database will be created an identification mechanism will be established by objective criteria [SPO, 2006]

Objective criteria in the determination of the people and groups to take advantage of social work and benefits have been created, increased communication and cooperation between institutions and organizations operating in the field of social assistance and welfare work and the strengthening of the relationship of social aid and employment is maintained. For children in need of protection love homes and children's homes have been established, at the homes for the disabled the scope of home care and training support has been expanded and employment incentives have been introduced [SPO, 2013]

To provide holistic services in the field of social work and benefits Family Social Support Program (FSSP) model will be applied [SPO, 2013]

In social work and welfare, a holistic approach to the needs of the family and employment-oriented system is essential to be established [SPO, 2013]

3.3 Social Justice

The main purpose of economic development is to ensure a fair distribution of income to a higher income level than today's large mass. For this policy to be followed within the terms and as a whole, it will be capable of harmonizing the conditions of access to a fair distribution of income [SPO, 1963]

With the income distribution policy will be implemented, tax burden social work will be provided among people in a fair way [SPO, 1963]

The scope of social work and social assistance programs for those who get old age, retirement, disability, widow, orphan's pensions and others and social work to be given to those under care by taking advantage of various social insurance and social work program is very limited with regard to social security schemes. The number of benefitters is so small since active service programs have not become countrywide yet. As Government's constitutional duty, funds to be allocated from public resources remain insufficient to effectively cover the special interest groups [SPO, 1979]

It is essential to strengthen the family business in all aspects as an essential element for the consolidation of national unity and solidarity and the protection and development of national and spiritual values and to take measures to help them adapt to social and economic changes and developments , and to ensure a balanced share taken from the social welfare for families [SPO, 1989].

Despite the continuous total revenue growth in the world, inequalities both nationally and internationally have tended to grow [SPO, 1995]

To reduce inter-regional disparities, as well as economic investments, education, there will be more investments in health and social work [SPO, 2000]

Wide public spending on social work such as education, health, social insurance not only helps a fair distribution of income and to achieve other social objectives but also helps to reach the economic purposes of the development by increasing economic efficiency [SPO, 1963]

Achieving social justice goals of the plan depends on various income groups' participation in development initiatives. To implement this condition, trends against income distribution must be prevented, extreme inequalities must be eased and measures must be taken to achieve a more fair income distribution [DPT, 1963]

With a widely distributing fiscal policy, the tax burden will be equal and social work will expand to the required areas directly and more effectively {SPO, 1963]

In our county, there are great imbalances in terms of economic activities, income distribution, social work and facilities in the broadest sense. The second major social objective of our planned development is to reduce the imbalance and to ensure a balanced development between the regions [SPO, 1963].

It is the main objective to improve Income distribution steadily, to promote and widen social welfare. Reducing poverty, eliminating the imbalances in income distribution and increasing the welfare issues will be given priority in economic and social policies taking into account the economic efficiency criteria [SPO, 1995].

There has been an increasing need for social work and assistance as a result of increasing urbanization, migration, high inflation, the deterioration of income distribution, poverty and family structure changes [SPO, 2000]. Important steps have been taken to combat poverty, to improve income distribution, to take care of the disadvantaged groups and to prevent the inequality of opportunity from affecting future generations [SPO, 2013]

It is the main objective to enhance the participation of those at risk of poverty and social exclusion by easy access to economic and social opportunities, to improve their quality of life, to reduce poverty and to improve income distribution [SPO, 2013].

RESULTS

Many decisions have been taken as to the development of social work and the increase of social welfare in development plans and the solution of social problems. However, goals have not been able to be achieved all the time. There has been even a fallback in terms of social justice.

In the very beginning when welfare state principle was adopted in 1960 there was more developments. Even if applications were increased, the facts of an increased income gap, unemployment and an increased number of the poor should not be overlooked.

After 1980, welfare state approach has been sustained. The privatizations increased unemployment, there became a reduction in wages in the private sector, formalism could not be avoided in terms of workers' health and safety. In the late 90's, although with the EU acquis, there was an acceleration in the social work, this did not go beyond formalism.

Despite all these, significant developments such as gathering social aids under one roof, law made for the assistance for the disabled, improvements in health structures, arrangements made for homeless children, the increase in the number of social workers have been experienced. In addition, the law enacted in 2008 to prevent unemployment is significant to take concrete decisions. However, it was not put in practice.

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MODELING IMPACTS OF NETWORK CHARACTERISTICS ON MAXIMUM ACCEPTABLE TIME FOR CYCLING, CASE OF WORK AND STUDY TRIPS

Amir Reza Mamdoohi*, Vajihe Amini**

Assis. Professor, Faculty of Civil & Environmental Engineering, Tarbiat Modares University, Tehran, Iran
Email: armamdoohi@modares.ac.ir*
MSc, Faculty of Civil & Environmental Engineering, Tarbiat Modares University, Tehran, Iran
Email: v.amini@modares.ac.ir**

Abstract- Today, excessive increase in number of cars and urban trips has caused problems such as traffic congestion and air pollution leading to lower quality of life in metropolises. In such circumstances, using traditional systems such as cycling can be of high value. Previous international studies about cycling have shown that maximum acceptable time for cycling has received little attention. Considering this research gap, this paper aims to investigate impacts of different factors such as individual characteristic, land-use and built environment, on maximum acceptable time for cycling. Based on a field survey of 473 Tehran citizens conducted in one of the twenty two Tehran municipality districts, mixed logit models were calibrated, validated and interpreted. Results indicate that people traveling through mixed land-use tend to use bicycle for thirty minute-trips more than the other land-use types. Also access to bicycle lane causes more tendency for thirty minute trips by bicycle. Results also indicate that access to secure parking in destination and increasing number of intersection on the origin-destination routes increase travellers' tendency for cycling about fifty minutes.

Keywords: cycling, maximum acceptable time, environmental impacts, mixed logit.

INTRODUCTION

Nowadays, traffic congestion and air pollution are major problems in metropolises. This problems in Tehran is so serious. Tehran is capital of Iran; daylight population of this city goes to more than twelve million people, which makes the traffic situation much more complicated including more than fifteen million trips a day. Daily, more than four million vehicles are travelling through Tehran roads network. In this situation, promotion of cycling as a green, safe and cost effective mode of transportation can have a bold role.

To date, impacts of different factors such as socio-economic, travel and cycling facility have been examined on cycling. For example Ortuzar, Iacobelli, and Valeze [1] studied the use of bicycle as an alternative mode of transportation, their results indicate trip length is a fundamental variable and increasing trip length can decrease bicycle demand. Rodriguez and Joo [2] examined the relationship between travel mode choice and attributes of the local physical environment. They showed that local topography and sidewalk availability are significantly associated with the attractiveness of non-motorized modes.

Hunt and Abraham [3] surveyed the nature of various influences on bicycle use and observed that time spent cycling in mixed traffic is more onerous than time spent cycling on bike lanes or bike paths; and the secure parking is more important than showers at the destination. Parkin, Wardman, and Page [4] investigated the proportion of bicycle journeys to work for English and Welsh electoral wards to relevant socio-economic, transport and physical variables. They showed car ownership has a significant effect on bicycle use, and the physical condition of the highway, rainfall and temperature each have an effect on the proportion that cycles to work.

Sener, Eluru, and Bhat [5] evaluated the importance of attributes influencing bicyclists' route choice preferences. Their studies indicate all bicyclists prefer no parking to any form of parking (angled and parallel parking) on their route, also all bicyclists except young adults (18–24 years of age) prefer angled parking to parallel parking. Jain and Tiwari [6] estimated riders' perception of route choice and observed that cyclists prefer wider arterial roads against narrow roads.

Also Winters et al. [7] evaluated 73 motivators and deterrents of cycling and found that routes away from traffic noise and pollution, routes with beautiful scenery, and routes separated from traffic are top motivators. Also ice and snow, streets with a lot of traffic, streets with glass/debris, streets with high speed traffic, and risk from motorists are top deterrents.

Buehler and Pucher [8] analyzed the variation in bike commuting in large American cities with a focus on assessing the influence of bike paths and lanes. Analysis revealed that cities with safer cycling, lower auto ownership, more students, less sprawl, and higher gasoline prices had more cycling to work. Heinen, Maat, and Wee

[9] studied the effect of work-related factors on bicycle commuting. The results suggested that the following factors such as: having a positive attitude towards cycling, the presence of bicycle storage inside and having access to clothes changing facilities increase the likelihood of being a commuter cyclist.

Related literature review about cycling show, most studies examined impact of socio-economic and cycling facility factors on cycling, whereas maximum time that individual accept to cycle have received little attention. Today due to the expansion of the cities (high travel time and long travel distance) it is less possible to travel by bike from origin (home) to destination (work or study location). So this question is considered that "how many minutes do people tend to cycle and which factors influence it? So this paper aims to investigate demographic, built environment and land-use impacts on maximum acceptable time for cycling in work and study trips.

The rest of the paper is structured as follows. In the next sections, the research design and process of data collection are described. Then the research results are provided. The last section presents conclusions and suggestions.

METHODOLOGY

In this paper, we formulate a mixed logit (ML) model for the maximum acceptable time for cycling. Mixed logit probabilities are the integrals of standard logit probabilities over a density of parameters.

The mixed logit probability can be derived from utility-maximizing behavior in several ways that are formally equivalent but provide different interpretations. The most straightforward derivation, and most widely used in recent applications, is based on random coefficients. The decision maker faces a choice among J alternatives. The utility of person n from alternative i is specified as [10]:

$$U_{ni} = \beta'_n x_{ni} + \varepsilon_{ni} \quad (1)$$

where x_{ni} are observed variables that relate to the alternative and decision maker, β_n is a vector of coefficients of these variables for person n representing that person's tastes, and ε_{ni} is a random term that is IID extreme value. The coefficients vary over decision makers in the population with density $f(\beta)$. This density is a function of parameters θ that represent, for example, the mean and covariance of the β's in the population.

The decision maker knows the value of his own β_n and ε_{ni}'s for all J alternative and chooses i if and only if [10]:

$$U_{ni} > U_{nj} \quad \forall \ i \neq j \quad (2)$$

The researcher observes the x_{ni}'s but not β_n or the ε_{ni}'s. If the researcher observed β_n, then the choice probability would be standard logit, since the ε_{ni}'s are IID extreme value. The probability conditional on β_n is [10]:

$$L_{ni}(\beta) = \frac{e^{\beta' x_{ni}}}{\sum_{J=1}^{J} e^{\beta' x_{nj}}} \quad (3)$$

The unconditional choice probability is therefore the integral of $L_{ni}(\beta)$ over all possible variables of β_n [10]:

$$P_{ni} = \int \frac{e^{\beta' x_{ni}}}{\sum_{J=1}^{J} e^{\beta' x_{nj}}} f(\beta) d(\beta) \quad (4)$$

The researcher specifies a distribution for the coefficients and estimates the parameters of that distribution.

The probabilities are approximated through simulation for any given value of θ. The simulated likelihood function and simulated log-likelihood function are [10]:

$$SL(\beta) = \prod_{n=1}^{N} \prod_i (\check{P}_{ni})^{y_{ni}} \quad (5)$$
$$SLL(\beta) = \sum_{n=1}^{N} \sum_i y_{ni} \ ln(\check{P}_{ni}) \quad (6)$$

where y_{ni} =1 if n choose i and zero otherwise. The maximum simulated likelihood estimator (MSLE) is the value of θ that maximizes SLL.

We apply quasi-Monte Carlo simulation techniques [11] to approximate the integrals in the likelihood function and maximize the logarithm of the resulting simulated likelihood function across all individuals with respect to the parameters β and σ.

In the current paper, we use Halton sequences [12] to draw realizations (1000 Halton draw). The possibility of different distributional assumptions for each attribute should also be investigated, so we examined normal, lognormal, uniform and triangular distribution for each attribute.

CASE STUDY CHARACTERISTICS AND DATA

The mixed logit model for maximum acceptable time for cycling was implemented for a real case of Tehran municipal district. The interview questionnaire survey was carried out in Tehran municipality district number eight, where bicycling network has already been implemented. This district is located in East Tehran with a gentle slope, making cycling fairly feasible. Fifty percent of land-use in this region is residential (Fig. 1).

The field survey was conducted in March 2013, based on a random sample of Tehran citizens stratified by employment status (employee, teacher, high schools and universities students). The sample included people either working or studying in this district, whether they used bicycle or not. Data items include demographic, environmental, land-use and travel information. The survey included the question, "how many minutes do you tend to cycle for work or study trips?" as the dependent (response) variable for modeling purposes. Choice responses include six alternatives: never, 10, 20, 30, 40 and 50 minutes, coded respectively from 0 to 5 [13].
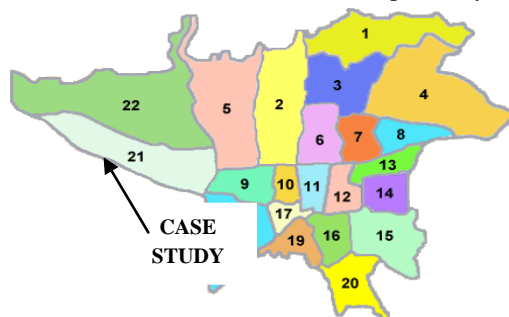

Figure 1 Twenty two municipality districts of Tehran and the study district

A total of 528 questionnaires were completed whose data were coded for data entry. Due to missing values or validation problems, 55 cases were excluded, leaving a final 473-case data base. A descriptive statistics summary of this final data used for model calibration is presented in Table 1. As observed, for example, age distribution includes 63.6% in the 15–30 year range and 14.6% in the upper 45 year range.

Environmental factors including access traveller's to public transportation stations in origin, bike parking in destination, bicycle lane from origin to destination and number of intersections from origin to destination is measured on a Likert type scale from 'not access at all' (0) to 'very much' (5), but this variables (except number of intersections) used in modeling as binary variables that described in table 1.

Results indicate that about 40% of individuals traveling through residential land-use and approximately 56% of respondents travel through mixed land-use.

Data about travel characteristics showed that approximately 69% of travel time for work or study trips is lower than thirty minute and 80% of travel distance is less than ten kilometer.

As observed, 22% of travellers do not have tendency to cycle in work or study trips. Also, the most time that travellers accept to cycle is thirty minute (21.1%) whereas minimum is fifty minutes (8%).

MIXED LOGIT MODEL RESULTS

Based on the questionnaire raw data and for more precision, six alternatives were provided for maximum acceptable time for cycling namely 0, 10, 20, 30, 40 and 50, which regarding their frequency and market share (table 1) needs aggregation. Further frequency analysis revealed that an aggregation to 3 alternatives of never, maximum thirty minute cycling (10, 20 and 30 minute) and maximum fifty minute cycling (40 and 50 minute) would be better choice.

From among more than 300 mixed logit models calibrated on the 473 observations, to analyze the effect of demographic, environmental, land-use and travel impacts on maximum acceptable time for cycling the final model was selected (Table 2).

As observe, employees, teachers and high school students have important and significance role on utility of never alternative. This shows they have lower tendency (versus university students) to cycle for work and study trips.

Results suggest that "Tibet" variable (travel time ≤ 15 min or travel time ≥ 70 min) have important and significance role on utility of never alternative. Maybe respondents with lesser fifteen minute travel time prefer to use previous transportation mode (frequently walking). Also, cycling for travellers with upper seventy minute travel time is tiring, so they have little tendency to cycle.

The findings indicate that respondents with high education (postgraduate) tend to use bicycle less than others. Perhaps they imagine, cycling lessen their social situation.

Access to public transportation in origin, is produces a random parameter with a mean of 0.762 and a standard deviation of 2.857, in utility of thirty minute cycling. This means, the impact of this variable for travelers is difference and can be described with uniform distribution.

As observed, people traveling through mixed land-use tend to use bicycle for thirty minute-trips more than the other land-use types. Because these areas are busy and congested, so cycling is proper mode to get away traffic. But it seems use bicycle for fifty minute in mixed land-use is tiring for users.

Access to bicycle lane from origin to destination has important (0.787) and significant role on thirty minute cycling utility, namely if there is bicycle lane, travelers have more tendency for cycling.

The dummy variable indicating a distance of less than ten kilometer (Dist) is significant in thirty minute cycling utility and shows respondents with less than ten kilometer travel distance (versus over ten kilometers) are more willing to use bicycle for thirty minute.

Variable of travel time less than 30 minute has a significant role (0.765) on utility of maximum thirty minutes cycling. Namely with increasing travel time over 30 minutes, due to fatigue and reduced physical abilities of cyclists, cycling decrease.

Results indicates, respondents upper than 45 years old tend to cycle 50 minute, maybe this groups have more time and are usually more important to health, so they want to travel by bicycle more time.

Access to secure bike parking in destination has important and significance role (0.561) on utility of fifty minute cycling. This shows that if there is secure parking in destination, travellers tend to use bicycle for more time, which shows the importance of secure parking for cyclists.

Observe that with increasing numbers of intersection on the origin-destination route, increase travellers' tendency for cycling about fifty minute. Perhaps with increasing numbers of intersection, travellers spends more time at red light, so bicycle usage can decrease time loss.

Table 1- Descriptive statistics analysis results of survey data

Category	Variable	Parameter	Description variable	Mean	Std.dev
Demographic	Age	un30	if (15≤age≤30)=1, ow=0	0.636	0.482
		Betw	if (30<age<45)=1, ow=0	0.218	0.413
		Up45	if (45≤age≤65)=1, ow=0	0.146	0.353
	Job	Emp	if (job=employee=1), ow=0	0.218	0.413
		Tea	if (job=teacher=1), ow=0	0.135	0.342
		Uni	if (job=university students =1), ow=0	0.224	0.417
		Stu	if (job=high school students=1), ow=0	0.366	0.482
	Education	School	if (education=high school=1), ow=0	0.423	0.495
		College	if (education=college=1), ow=0	0.423	0.495
		Pgra	if (education=postgraduate=1), ow=0	0.154	0.362
Environmental	Environment	Dastr	if (there is access to public transportation in origin=1), ow=0	0.901	0.299
		Lane	if (there is access to bike lane from origin to destination=1), ow=0	0.131	0.338
		Park	if (there is access to bike parking in destination=1), ow=0	0.569	0.495
		Inters	if (numbers of intersections from origin to destination =1), ow=0	2.463	1.364
	Land use	Resid	if (land use=residential=1), ow=0	0.402	0.491
		Admin	if (land use=administrative=2), ow=0	0.015	0.121

		Comer	if (land use=commercial=3), ow=0	0.021	0.144
		Mixed	if (land use=mixed=1), ow=0	0.562	0.497
Travel	Travel time	Tiun30	if (travel time ≤ 30 minutes)=1, ow=0	0.693	0.462
		Tibet	if (travel time ≤ 15 min or travel time ≥ 70 min)=1, ow=0	0.436	0.496
	Travel distance	Dist	if (travel distance ≤ 10 kilometers)=1, ow=0	0.797	0.403
Max time	Max acceptable time for cycling	Zemin	if (max time for cycling= 0 minutes), ow=0	0.222	0.416
		Tenmin	if (max time for cycling= 10 minutes), ow=0	0.197	0.398
		Twmin	if (max time for cycling= 20 minutes), ow=0	0.184	0.388
		Thimin	if (max time for cycling= 30 minutes), ow=0	0.211	0.409
		Foumin	if (max time for cycling= 40 minutes), ow=0	0.106	0.308
		Fifmin	if (max time for cycling= 50 minutes), ow=0	0.080	0.272

Table 2 Results of mix logit model for maximum acceptable time for cycling

Alternative (Max acceptable time for cycling)	Parameter	Coefficients	
		Value	P-value
Zero minute (never)	Emp	1.259	0.0007
	Tea	1.550	0.0004
	Stu	1.747	0.0000
	Pgra	1.117	0.0057
	Tibet	0.581	0.0333
Thirty minute	Dastr	0.762 (2.857)[*]	0.0144 (0.0098)[*]
	Lane	0.787	0.0725
	Mixed	0.722	0.0084
	Tiun30	0.765	0.0518
	Dist	1.444	0.0013
Fifty minute	Up45	0.868	0.0233
	Park	0.561	0.0453
	Inters	0.331	0.0001

LL(0)= -519.644   LL(C)= -452.840   LL(β)= -408.600

ρ^2 = 0.21 ρ_c^2 = 0.098

$-2[LL(0) - LL(\beta)]$ =222.1 $\chi_{14}^2(0.01 \text{ d.f})$ =29.14

$-2[LL(C) - LL(\beta)]$ =88.5 $\chi_{14}^2(0.01 \text{ d.f})$ =29.14

Num. observations=473   Num. coefficients =13   Num. random parameter=1

[*] Value and p-value of standard deviation of parameter with uniform distribution

CONCLUSIONS AND SUGGESTIONS

Today, duo to traffic congestion and air pollution in metropolises, promotion of cycling as a green, safe and cost effective mode of transportation can have a bold role. International studies show, most studies examined impacts of socio-economic, travel and cycling facility on cycling whereas maximum time that individual accept to cycle have received little attention. So this paper by using the results of the 473 Tehran citizens in one of twenty two Tehran municipality districts and mixed logit model investigated demographic, built environment and land-use impacts on maximum acceptable time for cycling in work and study trips and has taken the following conclusions and suggestions.

Results suggested that employees, teachers and high school students have little tendency (versus university students) to cycle for work and study trips. Also travellers with travel time less than fifteen minute or upper seventy minute and respondents with high education (postgraduate) have lower tendency for cycling.

As observed, people traveling through mixed land-use tend to use bicycle for thirty minute-trips more than the other land-use types. Also access to bicycle lane causes more tendency for thirty minute trips by bicycle.

Results showed that respondents with less than ten kilometer travel distance (versus over ten kilometers) or less than thirty minute travel time are more willing to use bicycle for thirty minute.

Results indicated that access to secure parking in destination and increasing number of intersection on the origin-destination routes increase travellers' tendency for cycling about fifty minutes. It is recommended to construct secure bike parking controlled by guards or CCTV.

Our research focused on only one district of Tehran municipality due to the limited spread of cycling network in Tehran and our emphasis on revealed preference data. Considering this limitation, it is suggested to collect a larger revealed preference data or design and gather stated preference type data for modeling, for further research.

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Amir Reza Mamdoohi was born in Tehran, Iran in 1965. He received his PhD in Transportation Planning and Engineering from Sharif University of Technology, Tehran, Iran, in 2005. His major field of study includes Transportation Planning and Modeling and Transportation Demand Management.
He is currently an assistant professor of Civil and Environmental Engineering Faculty at Tarbiat Modares University.

Vajihe Amini was born in Iran, in 1988. She has Master of Science in Transportation Planning and Engineering from Faculty of Civil & Environmental Engineering from Tarbiat Modares University, Tehran, Iran, in 2013.
She is currently an expert in transportation planning department of Tarahan Parse Research Institute.

DISTANCE ESTIMATION BASED FILTER RSSI FOR INDOOR WIRELESS SENOR NETWORKS

SALLAMA RESEN*, CELAL OZTURK**

Directorate General of Vocabulary, Iraqi Ministry of Education
Department of Computer Engineering
Erciyes University , Faculty of Engineering
AL-Askan Baghdad, Bilgisayr Kayseri
IRAQ, TURKEY
E-mail:sallamazoiny@erciyes.edu.tr*, E-mail: celal@erciyes.edu.tr**

ABSTRACT

Abstract: - Location estimation of distributed sensors has been taken great importance in Wireless Sensors Network (WSN) applications. In this paper, the sensor location is predicted based on distance estimation of two sensors by using Radio Signal Strength Indictor (RSSI). However, RSSI is low cost and energy consumption, the main reductions suffered by signal are due to fading, multipath , shadowing and path loss. Path loss Exponential module calculated previously and fixed along processing time without take environment change into consideration. To deal with this problem, a simple method is presented based on the Weight Median Filter (WMF) clarified RSSI sample to overcome attenuation effect periodically, in this paper. Various RSSI methods such as exponential module, mean, WMF are applied to estimate distance in two scenarios having different areas, interval time and sensors numbers. Processing time and accurate distance measurements are given to demonstrate the obtained results. Mean square error is applied between estimated and real locations of sensors. Comparisons show higher location accuracy obtained by WMF-RSSI filters than other techniques with slightly rise time.

Key-Words: - WSN, RSSI, Path loss, WMF, distance estimation, Exp. module

INTRODUCTION

Distance estimation between tow sensor nodes has wide scope of applications in Wireless Sensor Network (WSN) such as surveillance, detection and tracking. Most monitoring, tracking systems designed to work with Global Positioning System (GPS). The sensors are equipped with a GPS module which cannot reliably be used for indoor localization due to walls and furniture that weaken the signal [1]. Several researches have been employed WSN in indoor environment where GPS is not effective. WSN have limited ability of processing information seems need to intelligent operation to distance estimation. RSSI method for target positioning in WSN is widely-used in distance estimation because it is a cheap localization method in indoor environments [2]. RSSI based algorithms are preferred as they require minimum hardware and software without the need for synchronization as in Time of Arrival (TOA) and Time Different of Arrival (TDOA) [3]. RSSI drawback arises when errors for the distance estimation occur due to fading, multipath or path loss errors. Predefined path loss value without considering environment changes along time important recourse of errors. The common solutions in accurate distance estimation problems cost additional hardware requirement and power consumption. The sensor nodes should avoid complex and time consuming computations, which would exhaust its energy supply rapidly. This paper improved RSSI algorithms to achieve accurate distance estimation. Weight Median Filter (WMF) is used to remove unwanted signal on RSSI sample instead of constant path loss value. In order to achieve a precise distance measurement with RSSI, a spatial weight RSSI-filter is applied in this paper. WMF removing noise filter ensures that a large difference between RSSI values will be smoothed, so peak values or noise can be suppressed.

The paper is organized as follows: Section 2 reviews the related research studies in RSSI, with particular attention to the indoor environment considered. Section 3 focuses on the RSSI module propagation properties. The core of the paper is Section 4 which presents the WMF method used in RSSI measurement distance. Section 5 analyzes the experimental comparison results and the conclusion and future plans are given in Section 6.paper section 4 where present method to WMF in RSSI measurement distance . Section 5 analyzed the experimental comparison result . short conclusion and future work in section 6 .

RELATED WORK

In recent years, there has been a growing interest to use spectral analysis techniques for multiple sensor localization. However, some of the developed solutions aim to achieve accurate on indoor localization systems with low cost. RSSI position estimation technique has been used to determine the target location. In WiFi

environment RSSI positioning method is a very popular, because it is simple implementation and a cheap localization method in indoor environments. It is difficult to achieve an accurate positioning with RSSI due to the signal damping and reflection and one of the main error resources in RSSI precision in measurements is path loss. Practically accurate results can only be obtained through use some of parameters tune environment.

Localization techniques based on Received Signal Strength Indication (RSSI) algorithms are used in [4]. Control parameters for the k - nearest signal match algorithm for location estimation, to achieve finer precise estimates. In [5], a robust and simple path loss model, based on Least Median Square (LMS) value is proposed to overcome NLOS errors. This model does not require any prior statistical knowledge or error models. In [6], based on RSSI solutions for indoor localization, Kalman filtering and its variants have been applied to overcome Non-Line-of-Sight (NLOS) errors. This filtering is based on partial derivatives of the process and measurement function. These methods require previous information about the error model or statistical knowledge which is complex and computationally expensive. The Low Pass Filter (LPF) used for reducing the measurement errors rates on indoor environment, in [7] where the RSSI value is calculated as average distance from 1 to 10 m without obstacle. Statistical mean and variance value approximation method are applied with dynamic calibration methods which mean that environment can change its properties, in [3].

DISTANCE ESTIMATION BASED RSSI

The propagation speed of signal through a medium is constant; signal waves have inverse-square relationship between received power and distance [8], which is given in equation (1):

$$RSS_r \propto \frac{1}{d^2} \qquad d = d_0\, exp^{\frac{RSS_{r(d_0)} - RSS_{r(d)}}{10n}} \tag{1}$$

where RSSr is the received power at a distance d from transmitter. The strength of received power from a signal can be used to estimate distance by comparing the difference between transmission and received power which is called path loss. Path loss is one of the most important parameters for environmental characterization when distance increases value of path loss exponential n would be larger. Path loss exponential n expression is shown as in the equation (2):

$$RSS_r = \frac{RSS(d_o)}{(d/d_o)^n} \tag{2}$$

where RSS(d0), which is the received power measured at distance d0 generally fixed as a constant, is collected from the reference sensor nodes. Path loss error can be modeled Gaussian distribution or exponential [8]. Exponential module expresses the relationship between received power and the corresponding distance is calculated as in equation (3):

$$n = \frac{RSS_{r(d_0)} - RSS_{r(d)}}{10 log_{10}(d|d_0)}$$

where RSS(d0)is the received power of the receiver measured at a distance d to the transmitter, which is expressed in DB. Path loss parameters (n) which is obtained as in equation 3 does not change along processing time without consideration environment change. The next step is to obtain continuous RSSI values from the reference nodes. When both RSSI values and environmental parameters are calculated, RSSI values can be converted into distance. The distance d between transmitter and receiver is estimated by equation (4):

DISTANCE ESTIMATION BASED FILTER RSSI

Distance estimation based on RSSI in indoor environment is very challenging because path loss error grows into small area. It is important to reduce error rate from raw RSSI data without additional cost. This paper suggests improvements using WMF on raw RSSI data where path loss errors are weighted to reduce the effect on RSSI value which is collected from sensors that filtered before distance estimation step. There is no

weighting mechanism in traditional median calculation. All signal values are sorted in numerical order and then the middle signal value is taken as the signal being considered.

WMF is used to reduce noise in signal which also preserves useful detail in the signal, is more reliable than mean filter. WMF does not create new unrealistic values when the filter straddles an edge. For this reason the WMF is preferred at preserving piercing signal. WMF considered neighborhood values decide the characteristic of the median signal. The functional dependence between the successions received RSSI sample from neighborhood sensors is achieved by WMF as in equation (5):

$$y_s = \arg \min Fs(\theta)$$

where

$$Fs(\theta) \triangleq \sum_{RSS \in w} a_r |\theta - x_{s+RSS}|$$

where W is filter size or window size, RSS values of all in W. Let $x(1) \leq x(2) \leq \cdots \leq x(p)$ be the sorted values as order statistics and Let $a(1), a(2), \ldots, a(p)$ are the corresponding weights. Weights may be adjusted to yield the "best" filter while largest and smallest values are ignored, i.e. the outlier values are completely removed from gathered RSSI samples to eliminate path loss error. To adjust the minimum path loss error, the weight median filter is used as in equation (6):

(6)

$$RSS_{wmf} = \omega RSS_{wmf-1} + (1 - \omega)RSSI_r$$

where ω is a constant value in ($0<\omega<1$). The received signal strength RSSIr is the RSSI value receiving from the surrounding sensors at time t and the value RSSwmf is the signal value affected by environment. By converting RSSwmf signal value, the distance from the specific sensors to nearest reference point is calculated.

EXPERIMENTAL RESULTS

In the experiments, the distance precision which is affected by WMF on RSSI is test. RSS measurement is done between reference points and each deployed sensors. Experiment results evaluate distance accuracy by mean square error (MSE) and processing time criteria. Two scenario conditions have been executed to evaluate the effectiveness of the proposed techniques. Both scenarios results are obtained from homogeneous sensors. The reference nodes cover whole area and they are more capable than the other sensors in terms of range. Number of reference nodes correlated with area in each scenario. Reference point position is chosen carefully to make sure that each sensor range falls into at least two reference nodes range. Interval time to gather RSSI samples vary for 2, 4 and 8 seconds, respectively.

5.1 Scenario - 1

50 sensors are deployed randomly for 20 times in corridor area 10m x 20m vacate from furniture. The sensors are placed on a grid cells dimensions at approximately 1m x 2m as shown in Fig. 1
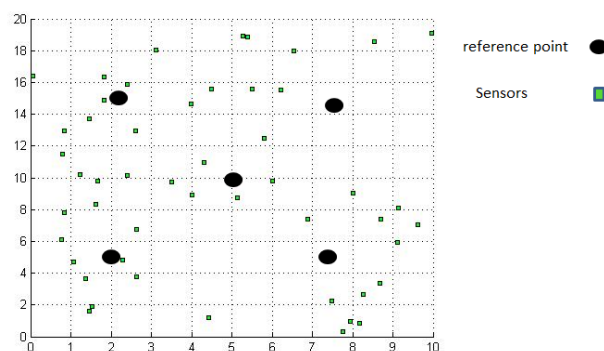

Fig. 1 corridor area

5.2 Scenario - 2

100 sensors are deploy randomly in the second scenario which is in a hall room area 50m x50 m with static furniture. The sensors are placed on a grid cells dimensions at approximately 5 x 5 m as shown in Fig. 2.
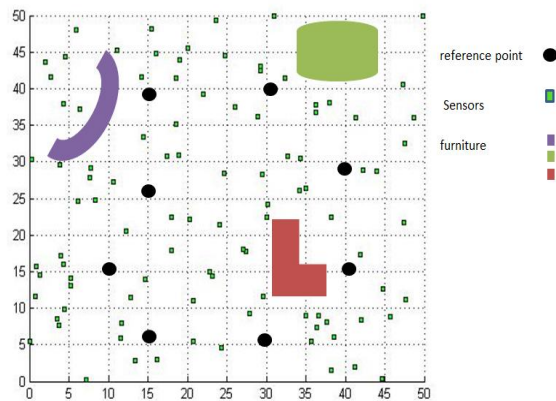
Fig. 2 hall room

Laptop device (Core i5, 6.00 GB, 64 bit OS) is used to process RSSI and evaluate the time processing. Exponential module and WMF on RSSI are simulated 20 times, of which have randomly sensors disruption. Distance obtained from RSSI mean, exponential module and WMF are given in Table 1for two scenarios where MSE is used to match estimated distance and real distance.

Table 1 Distance Accuracy in m.

	Exp.-RSSI Distance	Mean-RSSI Distance	WMF-RSSI Distance
Senario1	4.25	3.85	0.96
Senario2	6.91	4.49	1.32

Table 1 shows that filtered RSSI with WMF estimates distance 4-5 times better than the unfiltered RSSI values obtained by RSSI mean and exponential module. On the other hand, scenario-1 is closer than that achieved in senarion-2 which easy to see the effect of obstacles, i.e. the presence of furniture.Table 2 and Table3 show the cumulative localization error obtained for scenario-1 and scenario-2, respectively. RSSI measured from 20 random distributed with different time interval 2, 4 and 8 seconds have been performed to evaluate the accumulative error of the proposed method.

Table 2 MSE Error in time intervals for scenario-1.

	Exp.-RSSI	Mean-RSSI	WMF-RSSI
2 Sec.	0.33	0. 34	0.34
4 Sec.	0.45	0.44	0.39
8 Sec.	0.58	0.49	0.41

Table 2 displays the accumulative error schemes with scenario-1. It should be noticed that the error value grows more smoothly while time interval increase.

Table 3 MSE Error in time intervals for scenario-2

	Exp.-RSSI	Mean-RSSI	WMF-RSSI
2 Sec.	0.39	0.43	0.34
4 Sec.	0.47	0.47	0.40
8 Sec.	0.63	0.49	0.42

From Table3, it can be observed that WMF performs much better than mean and Exponational module. The accumulative errors of Mean and Exp. Module increase proportionally with the interval time. MSE of the WMF is measured almost same for all time cases. WMF error is close to half error of the Exp. Module in the time interval of 8 sec. When considering Table 2 and 3 together, the localization errors obtained by WMF method are smaller in scenario – 1 which is small area.MSE average given in Figure 3. As it can be seen from Figure 3, WMF effect on distance estimation accurate in comparison with the others.
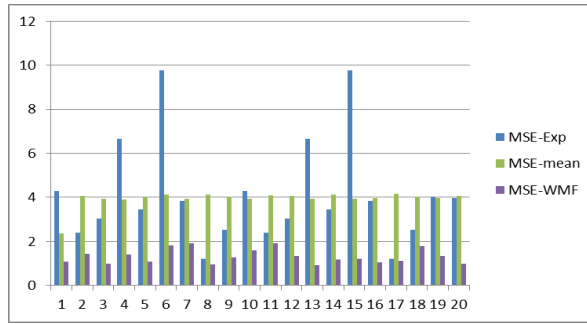
Fig.3 MSE criteria

Distance estimation error in WMF about 1.1 m increase error when cell contain one or double sensors and become approximately same as mean or exponential value. Exponential module distance error is better than mean but sensors in cells receiving RSSI value affected by obstacles (furniture) in hall room. Figures 4 and 5 show real and predicted distances for scenario-1 and senarion-2, respectively.
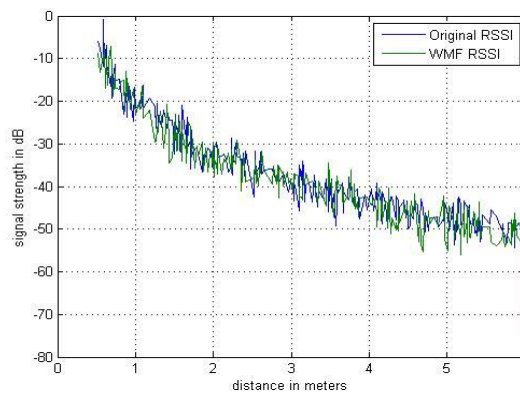

Fig. 4 Distances of WMF-RSSI, Scenario – 1

Result more accurate in small area environments . The estimation performance is much better in a small area conditions as corridor
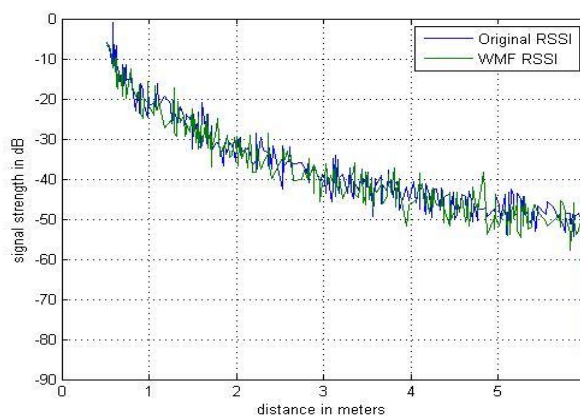

Fig. 5 Distances of WMF-RSSI, Scenario - 2

Besides the distance accuracy, the computation time required is an important point to consider. Fig. 6 shows computational times to evaluate and compared proposed method.
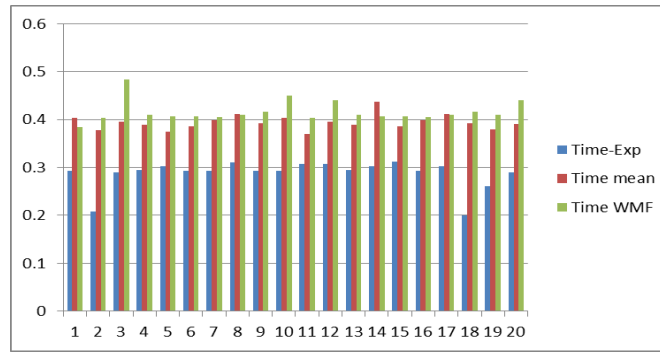
Figure-6 processing time
Fig. Fig. 6 Processing times of methods

Fig. 6 displays that WMF consumes time spatially when cell crowed with sensors where the amount of data is small show as in corridor scenario. WMF is proper to us in application essential accurate distance measurement more than speed processing. Finally, Table 4 reports the average localization time, rate using the different methods in the first and the second scenario, respectively.

Table 4 Average localization time

Time	Exp.-RSSI	Mean-RSSI	WMF-RSSI
Senario1	0.13	0.18	0.21
Senario2	0.14	0.25	0.26

It is obvious that Exponational module is the fastest method, requiring less time than the mean and WMF methods. WMF requires the greatest computational power. The WMF smoothest the outliers and the filtered RSSI by weighs all the signals in cell to selects the best receiver moves to or departs from an reference points with more reference points computation become complex. Hence, WMF limitation could be the expensive time.

CONCLUSION

Surveillance and monitoring applications cooperate with GPS in outdoor area and Wi-Fi in indoor area. GPS can't be used in indoor environment. Low cost and simple implement of RSSI, it is widely used for localization; however, main RSSI limitation is inaccurate result causes path loss. This paper suggests RSSI localization method improved by WMF to solve noise, dynamic situation problems. A simple method is presented based on the Weight Median Filter (WMF) and the results are compared with the results of exponential module and mean methods in two scenarios having different areas, interval time and sensors numbers. Comparisons show higher location accuracy obtained by filtered –RSSI through WMF than other techniques with slightly rise time.

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