UNIVERSITI PUTRA MALAYSIA

PUBLIC PARTICIPATION IN ENVIRONMENTAL IMPACT ASSESSMENT OF KLANG VALLEY MASS RAPID TRANSIT, SUNGAI BULOH-KAJANG LINE IN MALAYSIA

AIYEOLA ABIOLA WALIYU

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By

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Thesis submitted to the School of Graduate Studies, Universiti Putra Malaysia, In Fulfilment of the Requirement for the Degree of Doctor of Philosophy

November 2014

DEDICATION

This research work is dedicated to the memories of my late father Surajudeen Olaolorunkintan Aiyeola and my beloved late mother Madam Hafsat Adunni Aiyeola.

Abstract of thesis presented to the Senate of Universiti Putra Malaysia in Fulfilment of the requirement for the degree of Doctor of Philosophy

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Chairman: Ramdzani b Abdullah, PhD

Faculty: Environmental Studies

The purpose of this study was to assess the level of public participation within the context of Environmental Impacts Assessment (EIA) procedure using the Klang Valley rapid transits as a case study. The study examined the effect of public attitude, motivation, access to information, EIA policy, practice and performance on public participation. Based on the empirical study, the study used access to information as a mediating variable between other independent variables and the dependent variable.

A quantitative method was employed to collect data on the population of the people who are living along the receptive area of the project. A set of questionnaire was used to obtain information for this study. The content of the questionnaire was divided into four parts. Part A was for the demographic information on the respondents, part B was for the effect of attitude, access to information and motivation on public participation. Part C was to determine the effectiveness of EIA policy, practice and performance and its relationship with public participation. The last part of the questionnaire was to determine the awareness of the EIA of the project and level at which the public participate using sherry Arntein's ladder of public participation. In order to analyse the data collected, structural equation model (SEM) was used while descriptive statistics methods were used for Part A and Part D of the questionnaire.

The results showed that attitude, access to information and motivation have significant effect on public participation. The results also showed that access to information mediates significant positively between attitude, motivation and public participation. The results equally revealed the relationship between EIA policy, practice and public participation as mediated by access to information to be positive. On the other hand, EIA performance has direct relationship with public participation without any mediation and

it was significant whereas, when mediated with access to information it was not significant. Lastly, the result also showed that out of 304 respondents, 29.3 % (n=89) said they are aware about the EIA whereas 70.7 % (n=215) said they did not know about it. It was equally observed that 54% (N=164) among 304 respondents believed that their participation fell within the level of manipulation and therapy, while 34% (N=104) of the respondents believed their participation could be rated between information and placation. The last group of 12% (N=36) of the respondents believed that their participation could be rated within partnership and citizen control.

Going by the finding of this study, it was revealed that the public participation role in environmental management through EIA process still require an improvement. It was observed that access to information play a significant role on public participation in environmental management. It was equally revealed that the effectiveness of EIA policy, practice and performance can be measured through public participation because of the significant relationship that was established in the study. In conclusion, for improvement of public interest and participation, the study recommended an establishment of an integrated environmental information system awareness unit (IEISA) which will in turn manage a simplified information web based platform for the public, professional as well as consultants using the same database.

Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia
sebagai memenuhi keperluan untuk ijazah Doktor Falsafah

PENILAIAN PENYERTAAN AWAM TERHADAP KESAN KEPADA PERSEKITARAN DI TRANSIT LEMBAH KLANG DAN LALUAN KAJANG, SUNGAI BULOH DI MALAYSIA

Oleh

AIYEOLA ABIOLA WALIYU

November 2014

Pengerusi: Ramdzani b Abdullah, PhD

Fakulti: Pengajian Alam Sekitar

Tujuan kajian ini adalah untuk menentukan keberkesanan penglibatan orang awam dalam konteks tatacara Penilaian Kesan Alam Sekitar (EIA) dengan menjadikan kawasan Lembah Klang sebagai kajian kes. Kajian ini mengkaji kesan sikap orang awam, motivasi, akses kepada maklumat, dasar EIA, amalan dan prestasi penglibatan orang awam. Berdasarkan pemerhatian, kajian ini menggunakan akses kepada maklumat sebagai penghubung antara pembolehubah tidak bersandar dan pembolehubah bersandar.

Satu kaedah kuantitatif telah digunakan untuk mengumpul data mengenai populasi penduduk yang tinggal di sepanjang kawasan projek. Satu set soal selidik telah digunakan untuk mendapatkan maklumat yang diperlukan untuk kajian ini. Isi kandungan soal selidik tersebut telah dibahagikan kepada empat bahagian. Bahagian A adalah mengenai maklumat demografi terhadap responden, bahagian B pula adalah mengenai kesan sikap, pengaksesan kepada maklumat dan motivasi kepada penglibatan orang awam. Bahagian C adalah untuk menentukan keberkesanan dasar EIA, amalan dan prestasi serta hubungannya dengan penglibatan orang awam. Bahagian terakhir kaji selidik ini adalah kesedaran terhadap kesan penilaian alam sekitar projek berkenaan serta untuk menentukan tahap penglibatan orang awam dalam projek ini dengan menggunakan tangga Sherry Arntein. Untuk menganalisis data yang dikumpul, model persamaan struktur (SEM) telah digunakan manakala statistik penghuraian telah digunakan untuk Bahagian A dan Bahagian D dalam kaji selidik ini.

Hasil kajian menunjukkan bahawa sikap, akses kepada maklumat dan motivasi mempunyai kesan penting ke atas penyertaan orang. Analisis juga menunjukkan bahawa akses kepada maklumat telah menjadi pengantara secara positif ke atas sikap, motivasi

dan penglibatan orang awam. Keputusan yang diperoleh menunjukkan hubungan antara dasar EIA, amalan dan penglibatan orang awam dikenal pasti sebagai pengantara yang positif melalui dengan pengaksesan kepada maklumat. Sebaliknya, pencapaian EIA mempunyai hubungan secara langsung dengan penyertaan orang awam tanpa pengantaraan dan menunjukkan kesan yang jelas jika dibandingkan dengan pengaksesan kepada maklumat. Akhir sekali, hasil kajian menunjukkan bahawa di kalangan 304 responden, 29.3% (n=89) menyatakan bahawa mereka menyedari kewujudan EIA manakala 70.7% (n=215) menyatakan bahawa mereka tidak mengetahuinya. Oleh itu, secara kasarnya didapati bahawa 54 % (N=164) di kalangan 304 responden percaya bahawa penyertaan mereka termasuk dalam manipulasi dan terapi, manakala 34% (N=104) responden percaya penyertaan mereka termasuk di antara sumber maklumat dan "*placation*". Kumpulan terakhir, iaitu sebanyak 12% (N=36) dari responden berpendapat bahawa mereka termasuk dalam perkongsian dan kawalan penduduk.

Secara keseluruhanya, kajian telah menunjukkan bahawa peranan penyertaan orang awam dalam pengurusan alam Ssekitar melalui proses EIA masih memerlukan penambahbaikan. Akses kepada maklumat memainkan peranan penting dalam penglibatan orang awam terhadap pengurusan alam sekitar. Di samping itu, kajian ini juga mendapati bahawa keberkesanan dasar EIA, amalan dan prestasi boleh diukur melalui penyertaan orang awam kerana wujudnya hubungan yang penting dalam kajian ini. Kesimpulannya, untuk meningkatkan minat dan penyertaan orang awam, kajian ini mencadangkan untuk mewujudkan unit Kesedaran Sistem Maklumat Alam Sekitar Bersepadu (IEISA) yang seterusnya akan menguruskan platform maklumat ringkas berasaskan web untuk orang awam, golongan profesional serta juru runding dengan penggunaan pangkalan data yang sama.

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I wish to sincerely offer my appreciation to my employer, The Administrative staff college of Nigeria (ASCON) for the confidence reposed on me to purse this study particularly the Director General Mr A.A Peters and my mentor Mr B.O Eniaiyejuni and all the entire staff of the institutions for their support. I would like to express my deep appreciation to my friend, colleague Arit Uyouko for supporting me throughout my study I will forever be grateful to you. Equally my brother Kabiru Ishola Genty. To all my friends both in UPM and diaspora I thank you all for your support. To all my families members, thank you for supporting my family in my absent.

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Thank you.

I certify that a Thesis Examination Committee has met on 24 November 2014 to conduct the final examination of Aiyeola Abiola Waliyu on his thesis entitled "Public Participation in Environmental Impact Assessment of Klang Valley Mass Rapid Transit, Sungai Buloh-Kajang Line in Malaysia" in accordance with the Universities and University Colleges Act 1971 and the Constitution of the Universiti Putra Malaysia [P.U.(A) 106] 15 March 1998. The Committee recommends that the student be awarded the Doctor of Philosophy.

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This thesis submitted to the Senate of Universiti Putra Malaysia and has been accepted as fulfilment of the requirement for the degree of Doctor of Philosophy. The members of the Supervisory Committee were as follows:

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Declaration by graduate student

I hereby confirm that:

- this thesis is my original work
- quotations, illustrations and citations have been duly referenced
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Declaration by Members of Supervisory Committee

This is to confirm that:

- the research conducted and the writing of this thesis was under our supervision;
- supervision responsibilities as stated in the Universiti Putra Malaysia (Graduate Studies) Rules 2003 (Revision 2012-2013) were adhered to.

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CHAPTER 1

INTRODUCTION

This first chapter provide general overview of the research work. It gives an insight into the challenges and problems facing the environment as a result of development that countries are going through with particular interest on Malaysia. The chapter also gives a brief background on the study area i.e. the Klang Valley mass rapid transit (MRT) that stretches from Sungai Buloh to Kajang, the statement of problems, objectives of the study, significance of the study and definition of terms. The chapter also encompassed structure of the thesis.

1.1 Background of Study

Environmental management has become a global issue that requires all nations' attention. Realizing the importance of collective responsibilities, the United Nations in 1972 came up with a conference on Human and Environment and this gave birth to United Nations Environmental Program (UNEP) in Stockholm, Sweden (Corbett & Kirsch, 2001). In 1992, United Nation had a major earth summit titled "United Nation Conference on Environment and Development (UNCED) which was held in Rio De Jeneiro, Brazil. At the Rio convention issues of climate change took a centre stage and the outcome was what is known today as the Kiyoto Protocol. As part of the agreement at the conference, government are to refrain from degrading the indigenous peoples' land and cultural values by any of its environmental activities (Janerio, 1992). Subsequently, in 2002, the United Nations converged in Johannesburg to reappraise and review the 10 year comprehensive report on the outcome of Rio convention among nations. The convention was titled World Summit on Sustainable Development.

However, human quest to change the environment in order to suite his needs has affected the natural ecosystem of the world. The rush for urbanization and industrialization by nations for economic growth and development is having an impact on the global environment (Shafik, 1994). Part of the problems associated with industrialization and urbanization is the increase in the amount of greenhouse gases in the atmosphere particularly carbon dioxide. This increased global warming in the present day. In fact, the activities of human have successfully destroyed the diversity in our environment and equally affected the planet stability therefore putting the future generation at risk.

Development is a continuing process particularly among nations with transitional agenda like Malaysia. A growing economy is dependent on the level of socio-economic development and all variables that enhanced quality of life among the population of the nation. However, despite the challenges associated with developing a better society, a good nation does not lose sight of these challenges as they are associated with

environmental degradation that may result from developmental activities across its domain, hence the importance of Environmental Impact Assessment (EIA). Since development and sustaining the environment is the hallmark of any good government, risk assessment therefore is an important procedure that government use to curtail environmental degradation.

The introduction of National Environmental Policy Act (NEPA) in 1969 by the United State of America (USA) which dwells on assessing the environmental impact of a project on human lives across the USA has greatly influenced countries across the world. Many countries have legislated EIA and make it a compulsory procedure in assessing project implementations. Gilpin (1994) defines EIA as "the official appraisal of the likely effect of a proposed policy, program, or project on environment; alternatives to the proposal; and measures to be adopted to protect the environment". Since the purpose of development is to make life better for the public, the EIA policies are to regulate the judicious utilization of resources at the same time sustaining the environment for the future use. In this direction, the role of public cannot be underestimated.

As part of the requirements and procedure in Malaysia, just like any other nations, public participation plays a key role in the preparation of EIA process. It is required under section 34A, of the environmental Quality Act 1974 as a legal requirement for prescribed activities. The Act empowers the Minister of Natural, Resources and the Environment to prescribe any activities which have environmental impact on the environment. This he does after consultations with the body that have the responsibilities for regulating activities on environment. The Act also recognized two types of EIA procedure. The first is the preliminary EIA while the second one is the detailed EIA. The activities being proposed determine which procedure should be followed in preparing EIA for submission to the Department of Environment (DOE) Malaysia.

The role of public participation is clearly stated in the detailed EIA, though consultation may also take place in the preliminary EIA as well. However, the Sungai Buloh-Kajang line of Klang Valley mass rapid transit project fell within project that is classified to have major/significant environmental impact therefore detailed EIA is required and the role of public participation on the project is compulsory and important.

1.2 Klang Valley Mass Rapid Transit, Sungai Buloh–Kajang Line

The Sungai Buloh-Kajang line is one of the transformational revolutions that are going to change the face of mass rapid transit in Malaysia, a country that is working towards being one of the best economy come 2020 (Marzuki, 2009). The RM 23billion (£4.6 billion or $7.6 billion) project involves the construction of a mass rapid transit line connecting Sungai Buloh to Kajang. The length of the project is 51km and it is presented in Figure 1.1. The line will go through Kuala Lumpur (KL) and link up with existing KTM Komuter, Ampang LRT line and Kelana Jaya LRT. The mass transits will transvers five local authorities' area namely; Dewan Bandaraya Kuala Lumpur (DBKL), Majlis Perbandaran Kajang (MPKJ), Majlis Bandaraya Petaling Jaya (MBPJ) Majlis

Bandaraya Shah Alam (MBSA) and Majlis Perbandaran Selayang (MPS). The train will have 9.5km of its line goes underground and also has 31 stations along its route as shown in Figure 1.1.

It is strongly believed that the project will enhance movement within the city and at the same time reduce the amount of carbon dioxide that is being released into the atmosphere within the city through vehicular emission. The project is also expected to create direct and indirect employment to the people of Malaysia.

However the chief executive of the corporation Datuk Azhar Abudul Hamid while giving progress report during a press briefing on 20th December, 2012 said that the project will not exceed RM23billion and will be completed by July 2017. He went further to explain the challenges the corporation were facing through litigations instituted by the public living along the corridors of the project. The litigation experienced by the proponents of this project underscores the importance of public consultation in EIA of the project.

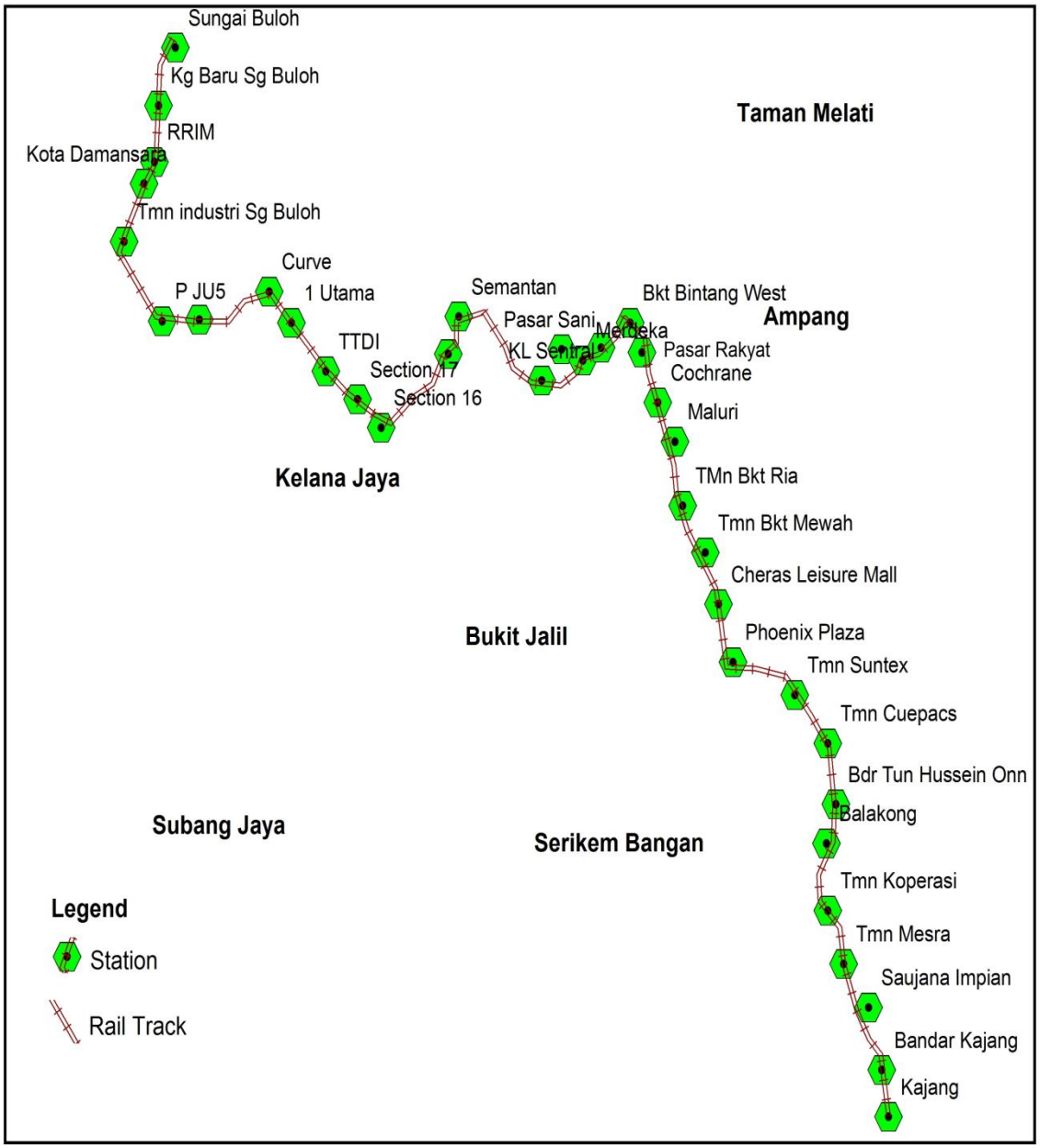

Figure 1.1: The Proposed Length and Stations of the MRT Project
Source :MYMRT | MRT Corp.

1.3 Statement of Problem

The flexibility and dynamic nature of the environment requires decisions that are transparent and also flexible (Reed, 2008). The world recognised the right of the public by allowing their voices to be heard when issues that are important to their environment are taken (Slocum & Thomas-Slayter, 1995). Scholars in the field of the environment and management have severally re-emphasized the importance of public participations in environmental impact assessment (EIA) as well as decision making tools for managing the environment. In order to meet the global practices and procedure in

environmental management, department of environment (DOE) in Malaysia, in the environmental impact assessment procedure and requirement handbook recognised the important role the public plays in sustaining the environment and included participation in the procedure of the EIA process. The policy proposed two types of EIA, preliminary and detailed. The documents made public participation compulsory in detailed EIA but not in preliminary EIA (DOE, 2007) which by operational, professionals and the proponents of the project determine the effects of the project on the environment with little or no contributions from the public who may have the ancestral knowledge about the environment.

The exclusion of the public in some stages of the assessment negates the environmental management treaty sign at the international convention in Kyoto. Results based on findings from 1988 to 1999 showed that most of the reports submitted to DOE were preliminary assessment (Leong & Kiew, 1991) and this implies that public participation roles are not included in the report. Though the DOE being an agent of government, encouraged public participation in detailed EIA but reports also shows that in 1999 out of 8 detailed EIA reports submitted 57 written comments were received on only three (3) while four (4) of the reports did not have any comment from the public, Lee 2000a cited in (Briffett et al., 2004) posited that the low comments was attributed to the low level of awareness, attitude of the public as well as public apathy on some of the projects and its importance to the environment.

The Aarhus Convention on public ability to access information and justice matters underscores challenges faced by the public. The challenges identified as constrains to public participation are lack of proper information as well as the attitude of the public toward the EIA process (Marzuki, 2009). While the study of public attitude towards participation is very important, it is important to appraise the level of information shared by the government as well as the proponents of the project. According to Sadler (1996) effectiveness of participation is based on the policy, practices and performance that are within the context of the rules and regulations of the government. All these attributes contributed toward proper participation and implementation of environmental impact assessment report.

Addressing these challenges requires constant understanding by the public and important role they play in sustainability of the environment. Part of the reason for EIA is to integrate the public into the project by making sure that their voice is heard by considering their observations when decisions are to be made on the project. When this awareness and contributions are lacking there is tendency that policy issues and decision may attract litigation (which the MRT project is facing in some areas presently) and may prevent the project from achieving its purpose.

The researcher is therefore interested in examining the effect of these variables that is attitude, motivation, and access to information on public participation in EIA process, the effectiveness of the EIA based on the existing policy, present practices and performance of the EIA process in Malaysia using the MRT project as a case study.

However, the project EIA report was prepared by ERE consultant and it will be used in this research work.

1.4 Objectives of the Study

The general objective of this study is to assess the public participation role in environmental impact assessment process of the Klang Valley Mass Rapid Transit, Sungai Buloh–Kajang line. The specific objectives are:

a. To examine the effect of access to information, attitude, motivation on public participation in the EIA process of the MRT project;
b. To determine the relationship between effectiveness of EIA policy, practice, performance and public participations in the EIA process of the MRT project;
c. To examine the significance of access to information as a mediator between attitude, motivation and public participation ; EIA policy, practice, performance and public participation in the EIA process of the MRT project; and
d. To determine the awareness of EIA of the Klang Valley mass rapid transit, Sungai Buloh –Kajang line project and the level of public participation

1.5 Hypotheses of the Study

The objectives of this study were achieved by answering the following hypotheses:

$H_{1:}$ there is no significant effect of access to information on public participation in the EIA process of the MRT project

H_2: there is no significant effect of attitude on public participation in the EIA process of the MRT project

$H_{3:}$ there is no significant effect of motivation on public participation in the EIA Process of the MRT project

$H_{4:}$ access to information does not significantly mediates positively between attitude and public participation in EIA process of the MRT project

H_5: access to information does not significantly mediates positively between motivation and public participation in the EIA process of the MRT project

$H_{6:}$ there is no significant positive relationship between effectiveness of EIA policy and public participation in the EIA process of the MRT project

$H_{7:}$ there is no significant positive relationship between effectiveness of the EIA practices and Public participation in the EIA process of the MRT project

$H_{8:}$ there is no significant positive relationship between effectiveness of EIA performance and Public participation in the EIA process of the MRT project

$H_{9:}$ access to information does not significantly mediates positively between EIA policy and public participation in EIA process of the MRT project

H_{10}: access to information does not significantly mediates positively between EIA practice and public participation in the EIA process of the MRT project

H_{11}: access to information does not significantly mediates positively between EIA performance and public participation in the EIA process of the MRT project

1.6 Significance of the Study

The research topic was conceived from literature reviews on the important role the public play in environmental impact assessment (EIA) process as reported by the Malaysian Act. The environmental Quality ACT of 1974 of Malaysia which articulates the direction at which resources should be utilised and sustained with consideration and contributions of the public. The country is endowed with rare plants and animals that may go into extinction if not manage properly. The quest to be one of the best economy come year 2020 has made the country to witness unprecedented developmental project.

The Klang Valley mass rapid transit (MRT) Sungai Buloh–Kajang line is one of such project and no doubt the project will improve mass transit within the metropolises, it will also distorts the Environmental configuration of the area that the line will pass through. The significant importance of this research therefore is to assess the role that the public play on the project within the context of the EIA rules and regulations. The outcome will also help the policy makers to have good first-hand information on the role the public play in monitoring and managing the environment so as for them to make good judgment on the project as well as the EIA policy.

1.7 Definition of Terms

As a guide to conduct data collection, data analysis and interpretations of the results the terms used in this research work are clearly defined conceptually and operationally. The definitions of terms help to expatiate on the variables that are used in the research work. The key terms in this research work are public participations, effectiveness of public participation, adequacy of information, sustainable development and project monitoring.

1.7.1 Public Participation

According to Rowe & Frewer (2000) public participation is define as " the practices of consulting and involving members of the public in the agenda-setting, decision making and policy-forming activities of organisations or institution responsible for policy development". The International Association for Public Participation, (IAP_2) also defines public participation as "a process that involves the public in problems solving or decision making in order to come up with acceptable solutions". It is included in all the process and aspect of identifying problems as well as opportunities in solving problems using the contribution of the public who may generally be affected by the problems. In order to determine stages at which public participate this research work used Arnstein (1969) eight rungs ladder of citizen participations. The model is discussed in detailed in literature review.

1.7.2 Effectiveness of Public Participations

Elling (2010) defines effectiveness as the potential outcome of a goal-directed process. Effectiveness is equally seen as the degree to which objectives are achieved and the extent to which targeted problems are solved. In this study however, effectiveness is operationally defined as the degree of public evaluation of impact of MRT project on the environment as highlighted by DOE procedure. The DOE procedure is discussed in the literature review.

1.7.3 Adequacy of Information

Spiker & Daniels (1981) defines information adequacy as a discrepancy measure of how much information is received and how much information is desired. Communication is a vital tool in environmental management. The availability of information affects the degree of acceptance of expected outcome of a decision. When the public have adequate information on a project and its effect on the environment acceptability of process will have a smooth experience.
For the purpose of this research, adequacy of information is defined operationally as the degree at which individual or group of people report a discrepancy between received and desired information on a phenomena (Trombetta & Rogers, 1988).

1.7.4 Environmental Sustainable Development

The word sustainable development, just like any other academic discourse provokes several issues and challenges on its definition. In general terms, it is about a range of environmental and socio-economic issues as its affect human existence (Hopwood et al., 2005). The idea and interest of sustainable development is basically about managing environmental resources to improve the present generation without any jeopardy to the future generation. The report of the world committee on environment and development: our common goal chair by Brundtland (1987) suggest this definition of sustainable development and since then it has form the basis for its concepts Agenda 21 of the Rio Earth Summit recognised that there must be an indicators to measure sustainable development as a bases for decision making process (George, 1999; Palmer Cooper et al., 1997; Schneider, 1989). Based on George (1999) assessment criteria for environmental sustainable development and in-line with section 1.4:5 sub section v of the DOE guidelines which require public participation procedure as a way of monitoring changing environmental values in the community, the Brundtland definition of sustainable development was used as operational definition for this study.

1.7.5 Project Monitoring

Gudda (2011) defines monitoring as an act of collecting the necessary information with minimum effort in order to make a steering decision at the right time. (Dickinson et al.,

1998) defined project monitoring as a process that involves balancing demand for efficiency and effectiveness.

The handbook of environmental impact assessment guidelines published by DOE in Malaysia section 1:4:7 sub section (i) and (h) emphasised the importance of compliance and monitoring of a project, this form part of the requirement in EIA process and also supported section 1:4:5 sub section (i) and (iv) where the role of public is made compulsory. The operational definition of public participation on project monitoring for this research work is therefore refer to as the role public plays in supervising/examine the progress of work so as to ensure that they are on-course and in-line with the objectives and agreement on the project and also as a responsibilities within the act of the government policy.

1.8 Thesis Structure

This research work is divided into five chapters. The first chapter, which is chapter 1, includes background of the study which led to the identification of statement of problems. The chapter includes the objectives and the significance of the study. The chapter also includes an insight into the project that was used as a case study.
The second chapter dwells on the concepts and literatures review that form the keywords of the research topic. In the second chapter also, relationship that exist between public participations, environmental impact assessment and environmental sustainability were discussed. The importance of public participation on environmental management within the study area was equally discussed in this chapter.
Chapter 3 focuses on the methodology. The chapter gives full description of the study area where data was collected and also explain the statistical tools and analysis that was used for the research work.
Chapter 4 deals with the discussion of the results generated from data used in the research work. Specifically data collection through the use of questionnaire were analysis and results were presented in this chapter
Chapter 5 is the concluding chapter of the research work. The chapter includes recommendations generated from the analysis. The also include limitations of the research work. The chapter also elaborates on some policy implementation and future research work in the study area.

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