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The Preliminary Study of Resources and Their Sufficiency for the Enforcement Program of EIA Project in Malaysia

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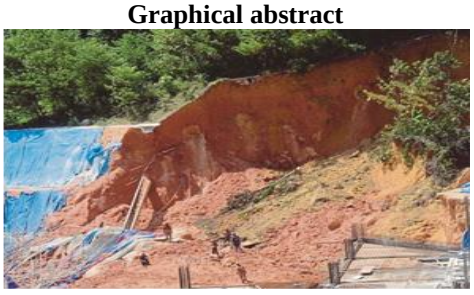
KEYWORDS

Malaysia, DOE, EIA, Condition of Approval, enforcement

ABSTRACT:

EIA reports approved by the Department of Environment (DOE) come with mandatory Conditions of Approval (COA) that the Project Proponent (PP) must adhere to. To ensure compliance with these COA, the DOE undertakes an enforcement program. Skilled DOE officers execute this enforcement following a Standard Operating Procedure (SOP). However, during the enforcement process, challenges are anticipated, especially during the developmental phase of any EIA project. In order to pinpoint the resources available and evaluate their adequacy in enforcing EIA COA, a pilot study was carried out before the actual study to evaluate the validity and reliability of the instrument. The instrument consists of 7 sections. Section A aims to identify the demography of the respondents while Section B aims to evaluate the importance of 12 background information for any project prior to EIA enforcement. Section C is about the importance of resources for EIA enforcement. Section D aims to determine the sufficiency of the required resources for EIA enforcement. Section E is about determining the problems faced by DOE officers during EIA enforcement. Section F of the survey attempts to understand the perception of DOE officers towards project proponent or EIA consultant during EIA enforcement. Lastly, Section G of the survey attempts to understand the evaluation of DOE officers towards a set of recommendation for improvement during EIA enforcement. It was found that the validity and reliability were at good level, and can be used at next actual study. Section B scores Cronbach's Alpha of 0.807 while Section and Section D each score 0.888 and 0.875, respectively. Section E scores the lowest i.e. 0.704 but this still falls within acceptable reliability. Section F and Section G each score 0.866 and 0.850 respectively. In addition, a normality test was also carried out for the responses. Each section was tested with three normality test namely statistical tests (Kolmogorov-Smirnov and Shapiro-Wilk), descriptive statistics (skewness and kurtosis), as well as eyeball tests (histogram and Q-Q plot, Except for Section B, others sections follow normal distribution. In conclusion, the instrument that have been developed here satisfy the standard necessary for the development of survey questionnaire. All the developed constructs have good internal consistency. While it is noteworthy to bear in mind that normality test is sensitive to sample size, this paper put forward the contention that this instrument can be utilized for actual study in the future.

Graphical abstract



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1. Introduction

In Malaysia, the Environmental Impact Assessment (EIA) was formally institutionalized as a compulsory legislative mandate in April 1988, pursuant to the Environmental Impact Assessment Order of 1987 (DOE, 1987) delineating prescribed activities. This framework was inspired by the United States' National Environmental Policy Act (NEPA) of 1969 [1]. The Department of Environment (DOE) Malaysia emerged as the inaugural legal entity entrusted with the responsibility of EIA enforcement. It is imperative to highlight that the inception of the DOE predates the EIA Order, tracing back to 1976. Before the promulgation of the EIA Order in 1987, EIAs for significant projects in Malaysia were undertaken on a discretionary basis [1]. Between the years 1982 and 1988, 34 EIA reports encompassing diverse undertakings such as wastewater management and water resources were presented to the DOE. Furthermore, from 1986 to 1988, an additional 32 EIA reports were submitted [1]. The EIA Order was officially enforced and fully operationalized on 1st April 1988, categorizing projects under the banner of Prescribed Activities. Consequently, Malaysia stands as one of the pioneering nations to integrate EIA into its policy framework, boasting a legacy spanning four decades. Nonetheless, certain critiques posit that, notwithstanding its early adoption, Malaysia's contemporary EIA practices remain in the shadows of those in more developed countries [2].

In accordance with the EIA Prescribed Activities 2015, there are currently 38 delineated activities that necessitate the execution of an Environmental Impact Assessment (EIA). As stipulated in Section 34A(2C) of the Environmental Quality Act (AKAS) 1974, any project proponent intending to undertake activities encompassed within the Prescribed Activities is obligated to engage a qualified individual to oversee the EIA assessment. Subsequent to this, the resultant assessment report is mandated to be presented to the pertinent Head Director of the Department of Environment (DOE) for endorsement prior to the initiation of the project [3]. The EIA procedure in Malaysia is demarcated into three pivotal phases: the research phase, the evaluation phase, and the post-evaluation phase, as delineated in the ensuing process flow. The primary focus of this scholarly article will be centered on the Post Submission phase, wherein the enforcement mechanisms of the DOE are activated.

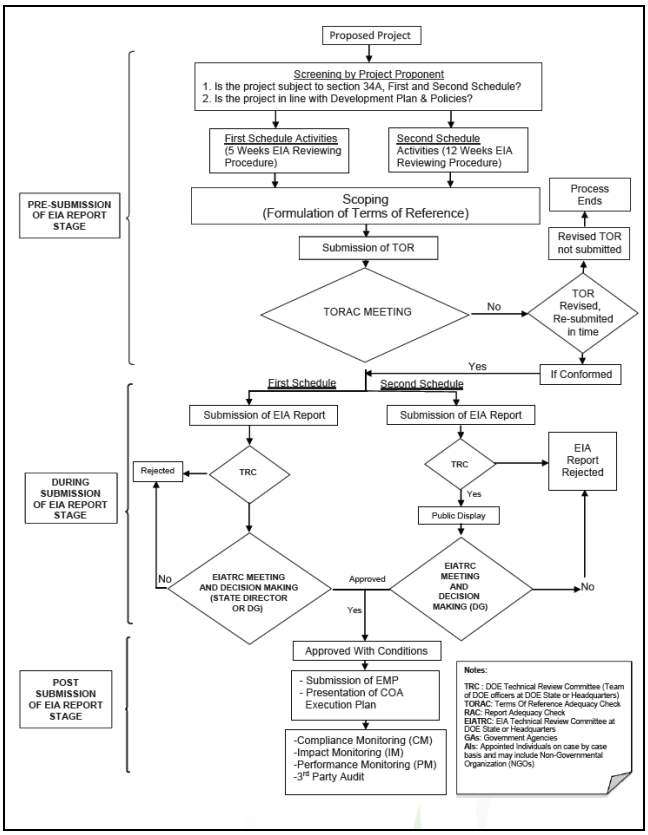

Figure 1 Flow Chart for EIA Approval Process in Malaysia

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1.1 Definition of Enforcement

Enforcement, in a broad context, pertains to the measures undertaken by governmental bodies to ensure adherence to legal stipulations. Such provisions typically empower a governmental agency to levy sanctions, either through administrative, judicial, or criminal channels, compelling the transgressor to rectify their non-compliance. Certain legal frameworks may obligate the offender to remediate the inflicted damages or authorize the government to undertake the restoration, subsequently recouping the expenses from the transgressors [4].

Administrative enforcement can be bifurcated into two primary categories: field citations and administrative orders. Field citations are dispensed by enforcement personnel at the location of the infraction, typically addressing overt, non-severe breaches with minimal environmental repercussions. This mechanism facilitates the expedient resolution of minor infringements, drawing parallels to traffic citations issued by law enforcement officers. Conversely, administrative orders are directives promulgated directly by enforcement authorities. These orders possess legal gravitas, are autonomously enforceable, and are adjudicated within their distinct administrative framework. Generally, disputes arising from administrative orders are settled promptly and with minimal complications.

Distinct from the aforementioned is judicial enforcement, which entails formal litigation overseen by the judiciary. This mode of enforcement, while potent, is less favored due to its intricate nature and potential for protracted legal proceedings. Nevertheless, the judiciary wields considerable authority and can establish legal precedents, particularly for egregious violations that may recur in disparate locales or future scenarios.

Lastly, criminal enforcement is invoked in instances where individuals or entities deliberately perpetrate severe infractions or engage in actions deemed reprehensible by societal standards. While this enforcement modality demands substantial financial and human resources, its deterrent effect is unparalleled.

1.2 Role of Project Proponent in Post EIA

Upon the approval of the Environmental Impact Assessment (EIA) reports, the onus of responsibility is shared between the Project Proponent (PP) and the Department of Environment (DOE). It is paramount to underscore that the PP holds the primary responsibility for overseeing the monitoring and implementation of the stipulated control measures. EIA approvals are concomitantly granted with Conditions of Approval (COAs), and it is incumbent upon the PP to ensure adherence to these conditions throughout the project's lifecycle.

The PP's compliance with the COA can be demarcated into two distinct phases: pre-project execution and during project execution. In the pre-project execution phase, the PP is obligated to: a) Formulate the Environmental Management Plan (EMP). b) Draft the LD-P2M2/ESCP plan, contingent upon its applicability. c) Designate a qualified environmental officer. d) Organize presentations of the aforementioned plans for the DOE's perusal. Conversely, during the project's execution, the PP's responsibilities encompass: (a) Continual reporting through a designated online system, (b) Implementation of mitigation strategies as delineated in the COA, with adherence verified through Compliance Monitoring (CM), (c) Periodic submission of environmental reports via Impact Monitoring (IM), (d) Execution of Performance Monitoring (PM) and (e) Commissioning of third-party audits to ensure unbiased evaluations [5].

1.3 Role of DOE in EIA Enforcement

The Department of Environment (DOE) is mandated to commence the enforcement of the Conditions of Approval (COA) immediately subsequent to the formal endorsement of the Environmental Impact Assessment (EIA) report and the issuance of the COA to the Project Proponent (PP). Pertaining to the domains of sedimentation and erosion, there are several cardinal objectives delineated by the Department of Environment [6] that the DOE must rigorously address:

i. To determine the compliance towards the COA
ii. To ensure that all Best Mangament Practice (BMP) that were recommended in EMP and LDP2M2 have been implemented or have been installed.
iii. To ensure all implemented BMPs are maintained properly
iv. To verify the monitoring records at site, as well as verifying that the appointed Environmental Officer (EO) was doing the work correctly
v. To verify the corrective actions after notice have been issued to PP
vi. To investigate all the reports that was submitted to DOE.

In 2006, an initiative was undertaken to formulate a Standard Operating Procedure (SOP) to streamline the enforcement mechanisms of the Department of Environment (DOE). This endeavor was initially championed by the Environmental Institute of Malaysia and Sustainability (EiMAS). The inaugural session culminated in the constitution of a dedicated working committee in early 2007, entrusted with the

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meticulous task of SOP preparation. Following this, a provisional draft was disseminated to each state for solicitation of feedback. By mid-2008, the first edition of the SOP was formally institutionalized [7]. The overarching objectives underpinning the establishment of this SOP are threefold:

1. To delineate the essential steps encompassed within the multifaceted enforcement program.
2. To homogenize the procedures, encapsulating legal measures, documentation, and communication protocols.
3. To fortify the extant enforcement framework, ensuring that deviations from the Conditions of Approval (COA) are promptly addressed and rectified.

1.4 Factors Affecting Effectiveness of Enforcement Program

Enforcement stands as a cornerstone, if not the keystone, of any robust compliance program. It synergizes with other facets such as education, surveillance, inspections, and incentives, functioning as a potent deterrent. The ripple effect of efficacious enforcement actions can serve as a cautionary tale for potential transgressors, prompting them to refine their operations in adherence to the law. The reverse i.e. lax enforcement is devastating to the environmental management [8]. Yet, the efficacy of enforcement regimes remains a perennial topic of discourse for regulatory bodies globally. The challenges and capacities to enforce environmental statutes vary considerably across nations, each grappling with its distinct set of impediments.

In the context of Nigeria, the execution of Environmental Impact Assessment (EIA) projects has been observed to exhibit deficiencies, particularly in the realms of vigilant monitoring and stringent enforcement by the Federal Ministry of the Environment. Several lacunae have been identified, including the absence of a uniform guideline, a dearth of feedback mechanisms during the project's developmental phase, and ambiguities surrounding the scope of the environmental management plan. While EIA reports receive endorsements accompanied by mitigation recommendations, such approvals do not inherently ensure the actualization of these suggestions. Intriguingly, certain case studies have highlighted instances where the proposed mitigation measures fell outside the purview of the Project Proponent (PP). The crux of Nigeria's challenges in this domain can be attributed to constraints in human resources, infrastructural deficits, and logistical inadequacies [9].

In Georgia, it has been found that the national environmental enforcement program is outdated. The instruments used to evaluate the performance and effectiveness also were found to be impractical. Similar to Nigeria, lack of manpower as well as funding was the main stumbling block for the Ministry of Natural Resources and Environment Protection (DOSEPA) to operate effectively. The problem is evident at working level, where the number of qualified personnel as well as the adequateness of training program was found to be way below the sufficient level [10].

China on the other hand, because of its vast population, opted to decentralize their institutional arrangement for compliance enforcement. The responsibility for standardization then basically lies with each local jurisdiction. In 2004, it was reported that there were 3,000 environmental agencies with about 50,000 inspectors. These people operates as if they are part of Environmental Protection Bureau (EPB), the central governing body. However, they are monitored by each local authorities which results in compromise on the stringency and standardization [11].

In Malaysia, In Malaysia Abdullah, Wan Abd Ghafar [12] have identified several factors that were hindering the effectiveness of DOE enforcement program. They are – listed in descending importance – lack of manpower, unsuitable department-in-charge for enforcement, loose legal provisions, absence of guidelines for enforcement, poor cooperation between agencies, limited fund, and lack of expertise. Lack of manpower, especially those with the right expertise, as well as lack of equipment and experience was identified as the most common factor. In fact, they were glaringly present especially in states that were experiencing high development, where the pace is fast and the activities are wide-ranging. It was also recognized - at that time - that the law doesn't specifically mention the need for enforcement by DOE. PP only need to show proof of his compliance on pieces of paper in order to show compliance with COA, which is not necessarily double-checked by DOE, owing to the fact that there is no requirement to do so. This has since been rectified.

Furthermore, a more recent study by [13] highlighted issues related to the quality of EIA reports in Malaysia. The study identified key factors influencing the quality of EIA reports, such as the cost of EIA preparation, sufficient time to conduct EIA study, skills and expertise, and adequate training of consultants and DOE officers. The study also emphasized the need for improvements in training, strengthening the EIA database system, and increasing the understanding of project developers regarding EIA procedures and regulation.

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2. Methodology

2.1 Study Design

Survey is one of the popular instruments in research. According to [14], the development of survey can be carried out via three methods namely, (a) by modifying existing survey questionnaire, (b) by developing your own survey questionnaire and (c) by utilizing all the findings in literature review. In the context of this study, a combination of the first method and the last method is chose. All the information gathered in literature review phase and all the inputs from the guidelines related to enforcement, sedimentation and soil erosion, are combined with a set of past surveys that have been modified ensure consistency and validity. The past survey questionnaire were originally adapted and modified from [5].

Literature review shows that an online questionnaire is one of the best methods to gain information from the respondents. Google Forms, an online survey toolkit, was used to design the questionnaire and circulate it among the survey participants. Likert Scale approach was used for the Questionnaire survey. The figure below shows the study design used in this paper.

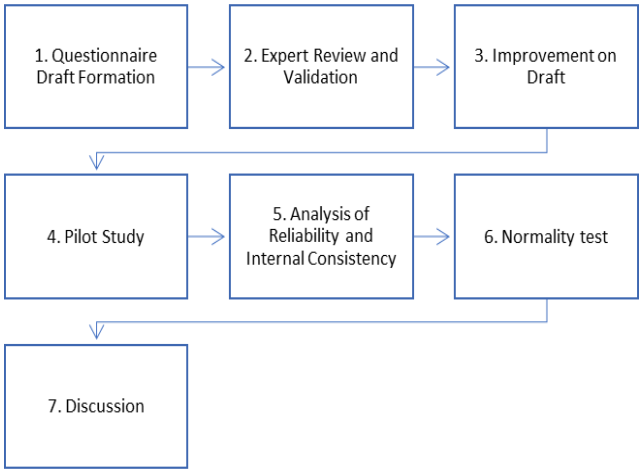

Figure 2 Study Design

According to Osama and Issa [15], a pilot test is a test done on a small scale to test the quality of the instrument used in the actual study. Therefore, validity and reliability are very important to determine the quality and appropriateness of an instrument used. Validity means a measurement that is the extent to which it successfully measures what it wants to measure. Validation is usually done with the help of experts in the field of study to check the validity and accuracy of the instrument, while reliability means testing on a small scale that is as an experiment before the items are used with real samples [15]. Often, reliability is tested by using a sample that has almost the same homogeneity as the real sample so that the test is more accurate.

2.2 Questionnaire Items

Section A of the questionnaire aims to identify the demography of the respondents including qualifications, work experience, age, and relevant involvement in EIA. Section B aims to evaluate the importance of 12 background information for any project prior to EIA enforcement. Section C is about the importance of resources for EIA enforcement, especially in the aspect of soil erosion and sedimentation control. For Section B and Section C, respondent were requested to rate them using Likert Scale 1-5, where 1 is Not Important and 5 is Very Important.

Section D aims to determine the sufficiency of the required resources for EIA enforcement, especially in the aspect of soil erosion and sedimentation control. Section E is about determining the problems faced by DOE officers during EIA enforcement, especially in the aspect of soil erosion and sedimentation control. Section F of the survey attempts to understand the perception of DOE officers towards project proponent or EIA consultant during EIA enforcement, especially in the aspect of soil erosion and sedimentation control. Section G of the survey attempts to understand the evaluation of DOE officers towards a set of recommendation for improvement during EIA enforcement, especially in the aspect of soil erosion and sedimentation control. For Section D, E, F and G, respondent were requested to judge their sufficiency based on Likert Scale 1-5, where 1 is Strongly Disagree and 5 is Strongly Agree.

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2.3 Expert Validation on Questionnaire

Expert validation is normally utilized to ensure accurate, free of item construction problems, and grammatically correct [16]. For validation, the first draft of the questionnaire was vetted by selected experts. Four (4) experts were identified within DOE. They are currently holding senior management positions and individually have accumulated at least 15 years of experience in dealing with EIA in general. Based on their feedbacks, several improvements were made to the questionnaire before proceeding to the second stage i.e. pilot test.

2.4 Pilot Test

In the pilot test, fifteen (15) respondents were identified. They are comprised of DOE officials that either are experienced in processing EIA reports, or are experienced in carrying out the EIA enforcement program or are experienced in managing the enforcement itself. The quantity is deemed reasonable according to Sundram and Romli [17] which stated the sample for the pilot test is set at 5 to 30 people only.

2.5 Reliability Test

For testing the reliability of the questionnaire, Cronbach's alpha - often referred to simply as "Cronbach alpha" or α (alpha) - is used. This is a statistical measure to assess the reliability or internal consistency of a set of measurement scales or items within a test or questionnaire. In other words, it helps evaluate the extent to which multiple items that are supposed to measure the same underlying construct (e.g., a psychological trait, attitude, or ability) are correlated with each other. Table 1 shows the rule of thumb for interpreting Cronbach's alpha value [18]. The data is analyzed using the Statistical Package for The Social Science (SPSS) version 21.0 software.

Table 1 Cronbach's Alpha Interpretation

Value of α	**Interpretation**
0.9 and above	Excellent reliability
0.8 to 0.9	Good reliability
0.7 to 0.8	Acceptable reliability
0.6 to 0.7	Questionable reliability
Below 0.6	Poor reliability

2.6 Normality Test

Many researchers consider that checking normality is not an important issue when conducting a pilot study, even not recommended since it is not reliable [19]. However, there are several benefits that can be derived from carrying out normality test at this stage. First of all, normality tests can inform researchers about the distribution of data in a small sample. If there's a significant deviation from normal distribution, the researcher could consider increasing sample size in the actual study or plan for non-parametric analysis. Secondly, it can highlight the presence of outliers in the data. Identifying and addressing outliers early in the research process allows researchers to make informed decisions about whether to exclude or transform data points in the main study [15].

There are several ways - aside from the usual Mean-Median-Mode - to carry out normality test. This paper uses statistical tests (Kolmogorov-Smirnov and Shapiro-Wilk), descriptive statistics (skewness and kurtosis), as well as eyeball tests (histogram and Q-Q plot). It is believed that using more than one way for checking the normality will generally put the researchers on the safe side and particularly for pilot studies purpose [15]. The data tested for normality using the Statistical Package for The Social Science (SPSS) version 21.0 software.

3. Results and Discussion

3.1 Expert Validation Result

Four experts have been selected to assess the questionnaire that has been produced. All experts have agreed with the division of question sections that have been generated. Every detail question has also been approved by the experts. However, there are some questions that require additional information. Additionally, some questions in this questionnaire need to be rearranged according to the existing questions. All the feedback from the experts has resulted in improvements of the instrument, before being distributed to respondents for the pilot study. Table 2 shows the evaluation of experts in resources and adequacy in implementing EIA enforcement on EIA approval requirements in the aspect of soil erosion and sedimentation.

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Questionnaire	Expert 1	Expert 2	Expert 3	Expert 4
	Comments and Improvement Taken			
Section A Demographics	Adequate	Duration of experience in EIA enforcement	Adequate	Adequate
Section B Background status / project information required Prior EIA enforcement in Soil Erosion and Sedimentation Control Aspect	Addition of information regarding the project site location and project scale	The arrangement of questions needs amendment	Adequate	Adequate
Section C Resources required by the Department of Environment (DOE) in implementing EIA on the ground in the aspect of soil erosion and sedimentation control.	Addition of information in question 14: Inclinometer	Amendment of sentences for specific questions	Adequate	Adequate
Section D Evaluating the adequacy of resources in implementing EIA, particularly in soil erosion and sedimentation control.	Addition of questions regarding the competence and skills of officers	Amendment of sentences for specific questions	Adequate	Adequate
Section E Challenges frequently faced by Department of Environment (DOE) officers during the enforcement of EIA	Addition of questions regarding BMPs	Amendment of sentences for specific questions	Adequate	Adequate
Section F The perception of Department of Environment (DOE) enforcement officers towards project developers or EIA consultants during the implementation of EIA enforcement	Addition of questions related to air, water, noise, and vibration monitoring by consultants.	Amendment of sentences for specific questions	Adequate	Adequate
Section G Proposals for improving the enforcement of EIA by Department of Environment (DOE) officers regarding EIA	Adequate	Amendment of sentences for specific questions	Adequate	Adequate

Table 2 Evaluation of Expert in Resources and Adequacy in Implementing EIA Enforcement in Soil Erosion and Sedimentation Aspect

3.2 Pilot Test Respondent Demography

This survey involves a cohort of 15 participants, providing a diverse representation of government servant in the field. Breaking down their roles, 46.7% currently hold the position of Assistant Environmental Control Officer (ECO), 33.3% are Senior ECOs, and the remaining 20% are classified as ECOs. Exploring educational backgrounds, 33.3% have attained a diploma, an equivalent percentage have pursued postgraduate studies, and 26.7% hold a graduate degree.

80% of the respondent fall into less than 5 years working experience in evaluating EIA report and the rest have more than 6 years experience. This can explain why it was found that 53.3% of the respondent haven't completed any EIA report evaluation. 20% said they have evaluated between 1 to 10 EIA reports while the rest said they have completed between 11 to 20 EIA reports. Nevertheless, when it comes to experience in EIA enforcement, 66.7% of respondent said they have 5 years of experience while 26.7% said they have between 5 to 10 years of experience.

The diverse distribution across ranks, ranging from Assistant Environmental Control Officers to Senior ECOs, manifests a comprehensive cross-section of environmental professionals. This spectrum of roles ensures that insights gleaned from the survey are reflective of varied perspectives within the organizational hierarchy, contributing to a robust and comprehensive analysis.

Likewise, the educational diversity, with a third of respondents holding diplomas, another third pursuing postgraduate studies, and a quarter possessing graduate degrees, enhances the diversity of the sample. This heterogeneity in educational backgrounds adds depth to our findings, as it acknowledges the multifaceted knowledge base and skills that respondents bring to the table.

Furthermore, the survey covers both the novice's perspective in EIA evaluation and the seasoned's point of view in EIA enforcement. This ensure a well rounded responses that encapsulate a diverse feedback yet still representative of the targeted demographic.

3.3 Cronbach's Alpha Analysis

In total, there were six (6) major section in the questionnaire that have been identifed to evaluate the resources and their sufficiency for the EIA enforcement program in Malaysia. The questionnaire were distributed to 15 personnel within DOE. In order to test the internal reliability of the questionnaire, the survey results are tested for Cronbach Alpha (CA). The result is as per Table 3 below.

Table 3 Cronbach Alpha Analysis

Questionnaire Section	Cronbach's Alpha Value	Status of Reliability
Section B	0.807	Good
Section C	0.888	Good
Section D	0.875	Good
Section E	0.704	Acceptable
Section F	0.866	Good
Section G	0.850	Good

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It is found that Section B, C, D, F & G scores between 0.807 to 0.888, which is categorized as Good. The only execption is of Section E with CA of 0.704. However, this is still classed as acceptable. A Cronbach's alpha value of approximately 0.8 and above suggests that the items or questions that have been included are strongly correlated with each other, indicating a high degree of reliability in the measurement.

Additionally, high internal consistency indicates that the survey or test is reliable, meaning that if respondents were to answer the questions again, they would likely produce similar results. It can also be interpreted that the instrument provides a precise and consistent measure of the underlying construct. We can conclude that the all the sections in the questionnaire has good internal reliability without being redundant in the questioning.

3.4 Data Normality

The questionnaire data that has been collected is analyzed to identify the level of normality of the data. Data normality were tested with three approaches; statistical tests (Kolmogorov-Smirnov and Shapiro-Wilk), descriptive statistics (skewness and kurtosis), as well as eyeball tests (histogram and Q-Q plot). The result are as per Table 4 and Figure 3 – 14 below:

Table 4 Normality Test Result

Section	Skewness	Kurtosis	Kolmogrov Sirnov	Shapiro Wilk	Interpretation
Section B	-1.763	2.867	0.002	0.002	Not Normal
Section C	-1.100	0.774	0.194	0.089	Normal
Section D	0.184	-1.165	0.200	0.479	Normal
Section E	-1.010	0.909	0.200	0.211	Normal
Section F	-0.465	-0.583	0.123	0.107	Normal
Section G	-1.271	1.559	0.069	0.019	Normal

As a rule of thumb, Osama and Issa [15] stated that a distribution can be considered normal if the skewness and kurtosis are within ± 2.0. On the other hand, Shapiro-Wilk statistical test is recommended for sample size of less than 50. If p-value is 0.5 or less, the distribution is not normal. Kolmogorov-Sirnov statistical test is usually recommended for large sample size i.e. N > 2000. Similar to Shapiro-Wilk, If p-value is 0.5 or less, the distribution is not normal. While both statistical tests does not always work because they not sensitive enough for small sample and overly sensitive for large samples, it is always a good thing in pilot study to assess the normality in more than one way [15]. In this pilot study, only Section B data is found not to have a normal distribution.

It is a well known fact that normal distribution is shaped like a bell curve and it's Q-Q plot would be a straigh line linear line. Hence, eye ball test using histogram and Q-Q plots are sometimes sufficient enough for normality test [15]. However, it must be emphasized that sample size plays a significant role when it comes to eye ball test. The standard inference is that as sample increases, the distribution tends to normal. Some argues that when N = 30, the violation of the normality assumption should not cause major problems, this implies that we can use parametric procedures even when the data are not normally distributed [20]. Although the pilot study only deals with N = 15, it is worthwhile to compare the histograms and Q-Q plots. It can be seen that Section B clearly doesn't follow a normal distribution, as was found earlier using statistical test. It also can be seen that Section E distribution in the same category as Section B, with several outliers present. It remains to be seen whether both will conform to normal distribution in actual study later on but this enable us to compare them once the date is available.

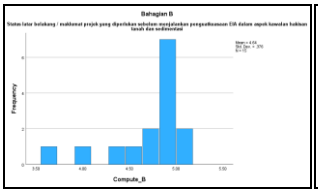

Figure 3
Histogram for Section B

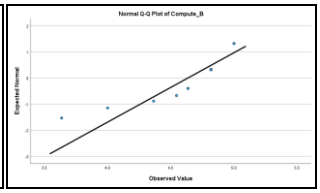

Figure 4
Q-Q Plot for Section B

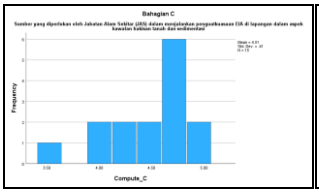

Figure 5
Histogram for Section C

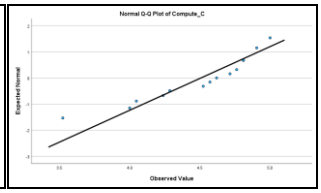

Figure 6
Q-Q Plot for Section C

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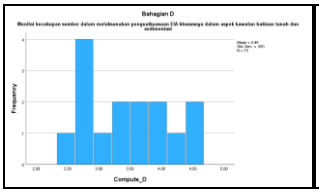
Figure 7
Histogram for Section D

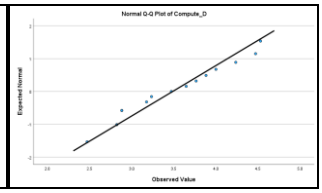
Figure 8
Q-Q Plot for Section D

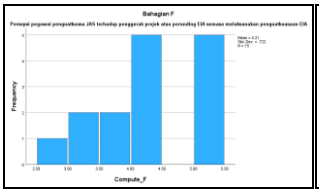
Figure 11
Histogram for Section F

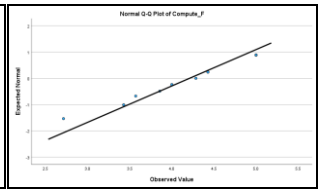
Figure 12
Q-Q Plot for Section F

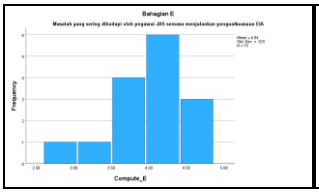
Figure 9
Histogram for Section E

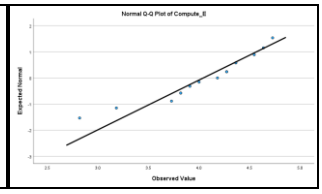
Figure 10
Q-Q Plot for Section E

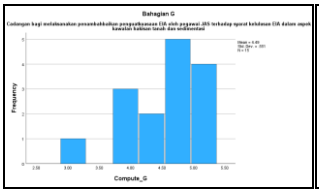
Figure 13
Histogram for Section G

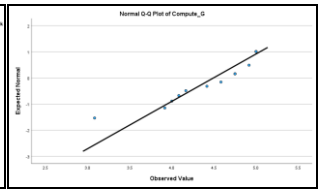
Figure 14
Q-Q Plot for Section G

4. Conclusion

The results of the experts' validations on the initial draft of questionnaire were very helpful in improving some parts of the instrument. The researcher has incorporated all the improvements before carrying out the pilot study. For reliability test, the data was tested for Cronbach Alpha value using SPSS. All sections of the questionnaire were found to have Good Reliability and ready to be used at large scale study. Normality test also being conducted on the data using several methods namely skewness-kurtosis, Shapiro-Wilk, Kolmogorov-Simirnov, histogram and Q-Q plots. Only Section B was found to be not conforming to normal distribution.

In conclusion, the instrument that have been developed here satisfy the standard necessary for the development of survey questionnaire. All the developed constructs have good internal consistency. While it is noteworthy to bear in mind that normality test is sensitive to sample size, this paper put forward the contention this instrument can be utilized for actual study in the future.

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