

# **Post-Occupancy Evaluation of Newly Commissioned Chief Lecturer's Offices In Ramat Polytechnic, Maiduguri, Borno State**

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**ABSTRACT:** Post occupancy evaluation (POE) is a platform for the systematic study of building once occupied. Be it offices or homes so that lessons may be learned that will improve their current conditions and guide the design of future offices or buildings. Various parts of the occupied building functions and performance can be appraised in a POE, these include enhanced-physical [indoor environment quality (IEQ), indoor air quality (IAQ) and thermal performances] and there are more subjective and interactional (space use, user satisfaction etc). POE draws on an extensive quantitative and qualitative toolkit: measurement and monitoring, on the one hand and methods such as walk-through, observations and user satisfaction questionnaires which were used in the POE of the newly commissioned lectures offices in Ramat Polytechnic Post-occupancy evaluation may seem necessary indeed, axiomatic phase of the design and construction processes, and exactly the kind of integrated assessment essentials for the design of more sustainable building. Yet POE researchers have often been regarded with suspicion and even hostility since their work may cause friction between different stakeholders. This we concluded that POE offers the potential to integrate a range of fragmented aspects of the construction process and of the relations of building to their environment and users. We propose that the acceptance of POE is a mandatory step in the design and commissioning of building whose result are habitually fed backward and forward to others stages of the design and construction processes, and is an important and probably inevitable steps toward making office in the Polytechnic more sustainable.

## **I. INTRODUCTION**

Post-occupancy evaluation (POE) has been defined by Zimring and Riezentuien (1980) as examination of the effectiveness for human users of occupied design environment. Post-occupancy evaluation can be equally be regarded as the review of capitals works facilities operational and maintenance activities undertaken by the consultant after commissioning evaluation it be undertaken by professional, be voluntary or should occupancy feedback be can an imposed legislative requirement. There is legitimate concern that over-regulation will simply result in gratuitous tick box culture that prevent intelligent understanding of feedback; on the other hand, it is clear that voluntary occupancy feedback in housing has been languishing for a long time and perhaps greater challenge is to develop more responsive regulatory process. Physical monitoring, verbal discussion and a simple assessment of questionnaire were used to undertake the evaluation of the post-occupancy by the staff occupying the offices. Their feelings, interaction as well as satisfaction of the office are the outcome of this research link. Democracy factors as well as cultural and religious inclination of respondents (occupants) are equally considered in the evaluation process.

Lastly but the least question is, are the building design for lower environmental impacts better from the occupants points of view? Post evaluation should include a feedback loops to enhance continuous improvement, improved fit between the occupants and the buildings, the optimization of services to suit occupants, the reduction of wastes of space and energy, validation of occupants real needs, reduced ownership/ operational expenses, imposed competitive advantage.

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## II. SIGNIFICANCE OF THE STUDY

Although, there is increasing interest in building office performance, the people who procure, design and construct building office they created. The major significance for the study includes:

- 1) To assess and verify the fitness of the office occupied by the staff of the polytechnic
- 2) Provide and assist in continuous improvement by proper, identification of positive and negative aspects of an in-service facility and then by feeding this information into the planning, design, construction of the future facilities.
- 3) Prepare defects or shortcoming actions plan at an operational level. This entails the correction of the deficiencies if feasible; such as improving maintenance, minor work and/or management decision.

We believe that each project/building/ offices is individual entity and will have some issue unique to its specific circumstance.

Taken place and the facility have been fully put into use for at least twelvemonths (12) and above preferable fifteen months (15) in line with the standards, policies and health requirements.

Consequently, post-occupancy evaluation (POE) can be undertaken by a consultant or agency/health services representative of the agency and be overseen by the project control group (PCG) or governance committee. The superintended of the contract, generally the project or the principle consultant is responsible for ensuring that POE is effectively completed as programmed.

Offices in Ramat Polytechnic are recognized as one of the best instrument for measuring the infrastructure performance, even if they are sometimes difficult to calibrate (Cole et al; 2008) and the anticipated feedback can quickly demonstrate the essentials integral element which we intend to evaluate vital feedback provided by the occupants as they inhibit their offices by feedback into improving the modeling and design of offices as well as its management and maintenance in order to reduce the carbon dioxide (CO<sub>2</sub>) emission. The biggest challenge of all is how to ensure that offices occupancy feedback which has becomes embedded and routine rather than restricted to demonstration or assignment.

## III. LITERATURE REVIEW

Post occupancy evaluation (POE) is the examinations of the effectiveness for human users of occupied design environment, it is in view of this definition that we intend the study of the offices of Ramat polytechnic. Post occupancy evaluation as name implied is structured and coordinated approach for the evaluation of the performance Of office at Ramat Polytechnic which are operational for the past years normally. POE is the evaluation of the performance, of a new facility when it is fully operational after at least twelve (12) to fifteen (15) month of occupancy (William et al; 2005).

Inhabitants of the offices are recognized as one of the best instruments for measuring offices performance, even if they are hard to calibrate (Cole et al; 2008) and their feedback can quickly demonstrate why a office do perform or not. People use energy; not building (Janda, 2009) it is an often human element that confounds evaluation of building performances. This can be due to lack of training or an inability to use the control systems on offer (Stevenson and Rijal, Gill et al) or simply choosing to live a different lifestyle to that assumed by the model (William et al).

When one allows for human activities, perceptions and motivations, human behavior becomes a challenging area of investigation for building performances evaluation, and one that is often overlooked in the equation. Some of the fundamental issues raised by many scholars bother on:

- a) Design affordance in housing need to be test, evaluated and improved in order to empower the user to take control of their environment and use the facilities in a manner most appropriate to their needs.
- b) Housing management is a dimension that needs to be evaluated as part of post-occupancy evaluation. Management practices should be engaging more with the inhabitants and involving them more often and directly within the decision making process about resources use when possible.
- c) Regulation and standards for office and comfort and blunt instrument, often too general for specific circumstances.
- d) Feedback on comfort and suitability provided to occupants within the house needs to be meaningful, consequential and habit-forming if it is to make a substantial difference.

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e) Evaluation method should identify the reasons why users and home providers behave the way they do and focus on the interactive adaptability provided by key control interfaces.

Besides, post-occupancy evaluation for any existing should be carried out before designing any office retrofit scheme in order to inform the design proposals more fully. Traditionally the evaluation of office performance after occupation has consisted of either physical monitoring or occupancy satisfaction questionnaires but quantitative and qualitative feedback are rarely related to each other as they span across the disciplines of building sciences and social sciences. The evaluation of user perceptions and behavior in relation to building performance is therefore an emerging area of research: Human behavior in offices in relation to cultural and racial level and the consequence of regulatory practice at another level. Attitude and expectation are a complicated mixture of normative behavior and assertion of personal beliefs derived from empirical experience and expiration grab based on what is perceived to be achievable (chapels and shove, 2005). Gupta and Chandiwala's paper together with Stevenson and Rajjils both reflected that need for evaluation method that can capture user behavior in relation to office performances. Equally, Stevenson and Rajjal explore new evaluation methods for housing, such as video analysis, activity logging and analysis of information provision, all of which focuses on user's relationship with control interface. They looked at the degree of interactive adaptability provided by such interface.

## IV. RESEARCH PHILOSOPHY

Research philosophy essentially entails the applications of system of beliefs and assumption for the development of knowledge which underpins the choice of philosophy, techniques for data collections, research, strategy and procedure for the analysis of the linkage to philosophical thought. The Fig. shows a research onion that explains the procedure of research philosophy in selecting methodology (Sauders and Lewis, 2009). According to positivism, vision, science and research are ways of getting the truth in the world hence it is of paramount importance to predict and control them. (Sekaran, 2011). Furthermore, positivism holds the view that data which are collected by the researcher is independent opinion (Sauder et al, 2015). The paradigm of positivism involves collection of peoples opinion about phenomena in a more economical and efficient manner that will be relevant to policy and decision making (Pino, 2012). Research method Opinion, modified and adopted from (Sauders, Lewis and Thornhill, 2012).

## V. THE FIELD QUESTIONNAIRE SURVEY

Survey is one of the most important areas of measurement in applied social research. The broad area of survey research encompasses any measurement procedure that involves asking question of respondents. It is considered as one of the suitable approaches often used to collect information on the attitude and behaviors of people by a technique of sampling which might represent a particular population in the study area and the production of finding that can be generalized to the entire populations (Mather's et al. 2009). Questionnaires were distributed to the occupants of the newly commissioned chief lecturer's offices.

## VI. PRIMARY DATA COLLECTION TOOLS

The researcher used both open-ended and closed-ended questions for the collections of primary data as propose a remediation approach in the newly commissioned offices. See appendix for the complete questionnaire of the survey questions were formulated from the research objectives.

## VII. SAMPLE COLLECTION

Sampling can be defining as subset of the population that is selected in an unbiased way to represent a whole population or a representative selection of an entire population. (Suresh, Suresh and Thomas 2011). Sampling enables data to be collected easily and summarized faster than for the entire population Fig. 3.1 presents the logical way researcher followed to sample the population. Researcher obtained the population from the occupant of the block were

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questionnaire were distributed to the largest participants and the response collected to be analyze in chapter four. The largest respondents are the occupants of the block and are in position to answer the questionnaires distributed adequately.

## VIII. RESEARCH METHODOLOGY

The research objective are to be achieve through the use of questionnaires, in view of this, the questionnaire is the research instrument that will be developed and administrated to the occupants of the newly constructed structures in the Polytechnic. A questionnaire is a common data collection mechanism use in research. In construction related research, questionnaire is mostly widely used to collect factual and perspective response from respondents. Besides, questionnaires are a good approach for descriptive and analytical surveys to find out the facts; opinions and views of respondents. The development of the questionnaire will be undertaken in such a way each question will be clearly phrased to avoid ambiguity and check for expression, objectivity and relevancy to be problem to be investigated.

A clear, concise and good quality questionnaire is essential to ensure that data obtained are valuable and relatable to be use for the research. Pilot-testing will be equally undertaken before the main distribution of the questionnaire Pilot-testing is a dress referral of the full research questionnaire.

## IX. QUESTIONNAIRE ANALYSIS AND RESULT

The questionnaire was formulated specifically to undertake the post-occupancy evaluation of offices in Ramat Polytechnic. Each questionnaire comprise of eighteen question (18) which borders specifically on availability or order wise of certain building facilities and a respondents are given option to comment freely if there is missing question. Their individual responses were collated and ranged so as to determine any missing utilities/facilities as well as proper remedial measures. Staff comfort and convenience in their various offices were main ingredient taking into cognizance whether the absent of some or all of the facilities utilities will affect the optimization use of the offices. Cultural and racial elements were equally taken into consideration while formulating the questionnaire. Respondents observe varying degree of discomfort in their office which also a function of where the respondents come from. Consequently, it was observed that though the area is labeled as office lots based on the developer records but the offices are not international in nature. Developer did not take into consideration the anticipated occupant's physique, attitude, culture as well as background. To this end; significant number of respondents are of the view that the offices though standard in the Nigerian perspectives; but fall shorts of international standard. This development is equally affecting the optimal usage of the offices as most officers are equally of the view that the houses are not green in compliant in any sense. More over; the absent of trees, plants and other natural elements which might have made staying in those offices pleasant are totaling lacking while officers age are also on the higher sides. In view of the various observations and comments; developers of properties in the Polytechnic shall be encourage planning, design, and constructing offices to international standard. Some respondents are of the view that instead of building offices without indoor test facilities, why not to build one office and one toilet, which is not only convenient to the occupants, but makes hygienic sense. Another observation is that most of the offices are here for lecturers studies and that indicates their level of maturity; most of them are of the opinion that they have grown up to share toilet and other building facilities and that it has a devastating negative effects on the comfort. The likert scale was used for the questionnaire and would be used in the analysis of the research work.

**LIKERT SCALE:**The likert scale is a convenient tool used by researcher in civil engineering management and the social and management science and it's getting wider acceptances even in the engineering. It is a widely been used when qualitative research work is been undertaken.

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## LIKERT SCALE:

- (1) STRONGLY DISAGREE
- (2) NEUTRAL
- (3) AGREE
- (4) STRONGLY AGREE

## X. ISSUES IDENTIFIED

There are various pertinent issues with regards to post-occupancy evaluation. These issues may be specific and unique to our case study or similar research work:

- a) Lack of awareness: - awareness in terms of knowing and understanding the purpose and objectives of post-occupancy evaluation (POE) by developers and parties involved in the planning, designing and construction of the infrastructural facilities.
- b) Another issue is that post-occupancy evaluation is voluntary or should occupancy feedbacks be imposed legislative requirements
- c) Are the building/facilities designed for lower environmental impacts better from the occupant's point of view?
- d) Administrative bottlenecks in term of complaints of their grievance with facilities.

## XI. RECOMMENDATIONS

Based on the research conducted in post-occupancy evaluation of the newly commissioned offices in Ramat Polytechnic Maiduguri we wish to propose the followings recommendation for implementation by relevant bodies:

- a) Evaluation method in future should equally aim to identify the reasons for the deficiencies and focus in the rectification of such deficiencies.
- b) Design affordance in offices need to be tested, evaluated and improve continually to empower the occupants to take control of their environment.
- c) Feedbacks from occupants are to be given a serious concern with a view of taking it in future development plans.
- d) Cultural and racial background of the various occupants be considered in design and construction of office in the future development of offices in the polytechnic

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