

3rd



**INTERNATIONAL CONFERENCE
ON THE ENVIRONMENT**

BOOK OF ABSTRACTS

THEME

**CHALLENGES OF THE AFRICAN BUILT ENVIRONMENT:
A SEARCH FOR SUSTAINABLE SOLUTION**

**CHUKWUEMEKA ODUMEGWU OJUKWU UNIVERSITY,
ULI CAMPUS**

DATE 20-22 NOVEMBER 2019.



PROJECT MANAGEMENT BEST PRACTICES FOR IMPROVED PERFORMANCE OF MASS HOUSING ESTATE PROJECTS IN NIGER STATE, NIGERIA

¹Abubakar, H. and ²Adindu, C. C.

¹ and ² Department of Project Management Technology, Federal University of Technology, Minna, Niger State

Correspondent email: hadizabokani@gmail.com

ABSTRACT

A project is a carefully defined set of activities that use resources to meet predefined objectives. The availability of decent housing for each family defines the level of development which a country has reached; therefore, housing is fundamental as an important issue for people in all corners of the world, since their well-being is enhanced by the level of enjoyment of certain standards of living. This study investigates the project management best practices used in housing estates for their improved performance especially with regards to time, cost and quality criteria for project execution. The study adopted the use of qualitative and quantitative research techniques, questionnaire and personal observation in the field. The findings show that Project Understanding ranked 1st with Weighted Average of 251 (WT-251, R-1), Top Management Support ranked 2nd with Weighted Average of 247 (WT-247, R-2), Risk Management, Adequate Project Control, Realistic Cost and Time were ranked 3rd with Weighted Average 246 (WT-246, R-3), Competent project team, client involvement and problem solving ability were ranked 4th with Weighted Average of 244 (WT-244, R-4), Project ownership, Project mission and adequate resources are some of the rarely used or not employed tools. It also show that Competent Project Team and Planning / Controlling ranked 1st with Weighted Average 234 (WT-234, R-1), Project Ownership, Monitors Performance and Feedback and Project Mission were ranked 2nd with Weighted Average 226 (WT-226, R-2), Authority of the Project, Top Management Support and Problem Solving Ability were either to a fair extent used or Not used at all in developing mass housing in Minna. The study thereby recommends that adequate project management training should be given to employee in charge of projects; this would increase the knowledge of employees about the best project management practices.

Key Words: Project Management, Best Practices, Housing Estate and Performance

1.0 Introduction

A project is a carefully defined set of activities that use resources (money, people, materials, energy, space, provisions, communication, quality, risk, etc.) to meet predefined objectives (Kerzner, 2001, Kerzner, 2013). Project management discipline utilises uses the tools of planning, organizing, securing, managing, leading, and controlling resources to achieve project goals. In this context of project management best practices may be described as optimum ways of performing project work to achieve high performance (Bogan and English, 2014).

Housing is considered a basic need of mankind and a critical sector of an economy. It is the center point of many socio-economic activities and stands as a mark of prosperity, social

acceptance, and an element of urban development and growth (UN-Habitat, 2012; Oyebanji, *et. al.*, 2011; Wapwera, *et. al.*, 2011). Project management success has often been associated with the final outcome of the project. Overtime, it has been shown that project management and project success are not necessarily related. (Oyebanji, *et. al.*, 2011).

The management of housing projects requires knowledge of modern management as well as understanding of the design and the construction process (Khang, 2012). Construction projects have specific set of objectives and constraints, such as project completion time, cost and quality. Majority of projects fail to meet deadlines, cost and quality targets (Lim and Mohammed 2015). This is not too surprising considering that there are not know perfect engineers, any more than there are perfect designs or that the forces of nature behave in a perfectly predictable way. Change cannot be eliminated, but by applying the principles of risk management, engineers are able to improve the effectiveness management of this change. In housing construction projects, each of the three-primary target of Cost, Time and Performance are likely to be subject to risk and uncertainty. The lack of risk management, or an insufficient risk analysis, can put housing construction projects in jeopardy (Mobey and Parker 2002).

1.01 Problem of the Study

In the recent decades there has been rapid growth in the construction of mass housing estates within Nigeria as part of deliberate measure to solve the problem of urban housing shortages in the country. This is characterized by increasing numbers of mass housing estates across the country. However, the poor quality of construction has brought to therefore the need for more maintenance, rehabilitation, and renovation work in an effort to ensure the serviceability and safety of such buildings. At the same time, there is a need to sustain existing buildings for as long as possible. On the other hand, there is also a requirement to reduce the cost of maintenance work, to improve the performance of buildings and to do all these things whilst sustaining quality (Cloete, 2011), and Chanter and Swallow (2015).

The dominance of the problems is the unsustainable post-construction management approach prevalent and the need to avert the housing estate challenges prominent in Nigeria is obvious (Ebie, 2012; Wapwara, *et. al.*, 2011). The number of unoccupied, incomplete, vandalized, abandoned, and unsuccessful mass housing estates in Nigeria (Kadiri, 2004) are symptoms of unsustainable project management best practices. Evidence of corrupt practices, lack of good governance and decentralization of power, and the lack of active involvement of stakeholders in mass housing estate management decision making exists (Kadiri, 2004). Wapwara, *et. al.*;

(2011), Kadiri (2004). and Oladapo (2002) identified that there are shortcomings in the infrastructural services and amenities provided in the mass housing estates. At the same time, the mass housing estates do not meet the demands of the occupants this leading to the untold hardships in living standards and continuous paucity of needed homes (Kadiri, 2004 & Oladapo 2002). Another major issue is the predicted lack of an existing housing/building maintenance management standard for residential housing estates. The triple principles of sustainability namely: social; economic; environment; is inactive in the current management practices of mass housing estates (Olotuah and Bobadoye, 2009).

Consequently, mass housing estate in Minna, Niger State are prone to these stated housing estate challenges and deficits. The main cause of these problems is the fact that no governmental body with the necessary authority to resolve them exists. Unfortunately, the problems and challenges facing the mass housing estates do not appear to be of serious concern to the government, and have consequently, not been addressed, such that there still remains a need for global best practices in mass housing estate management. From the foregoing, this study aims at investigating the project management best practices used in mass housing estate projects in Minna, Niger State.

1.02 Aim and Objectives of the Study

The specific objectives of the study are:

- i. To identify the project management best practices used globally in mass housing estate delivery
- ii. To examine the extent to which the identified project management best practices adopted in the execution of mass housing estate project in Minna Niger State
- iii. To identify ways of sustainable integration of project management best practices in Mass housing project delivery in Niger State

2.0 Theoretical Review

2.01 Concept of Project management

The definition of project management suggests a shorter term and more specific context for success. The outcomes of project management success are many. They would include the

obvious indicators of completion to budget, satisfying the project schedule, adequate quality standards, and meeting the project goal. The factors which may cause the project management to fail to achieve these would include: inadequate basis for project; wrong person as project manager; top management unsupportive; inadequately defined tasks; lack of project management techniques; management techniques mis-used; project closedown not planned; lack of commitment to project (Khang and Moe, 2008). These factors would suggest that successful project management requires planning with a commitment to complete the project; careful appointment of a skilled project manager; spending time to define the project adequately; correctly planning the activities in the project; ensuring correct and adequate information flows; changing activities to accommodate frequent changes on dynamic; accommodating employees' personal goals with performance and rewards; and making a fresh start when mistakes in implementation have been identified (Ding, 2008).

2.02 Factors Affecting Project Management

Nowadays, companies are increasingly using projects in their daily work to achieve company goals. The only way organizations can be driven to achieve excellence is by keeping an eye on competition and world best practice in all aspects of the business (Bendell *et. al*, 1998). Recently more and more organizations are recognizing that translating corporate strategies into actions requires project management. Consequently, it is vital that projects are successful (Baccarini, 2003). Critical success factors are important influences that contribute to project success. So, critical success factors are the set of circumstances, facts or influences which contribute to the project outcomes.

According to Mobey and Parker (2002), to increase the chances of a project succeeding it is necessary for the organisation to have an understanding of what are the success factors, to systematically and quantitatively assess these factors, anticipating possible causes and effects, and then choose appropriate methods of dealing with them. Once identified, the success of the project can be achieved. Generally, the success of a construction project depends on a number of factors, such as project complexity, contractual arrangements, and relationships between project participants, the competency of project managers, and the abilities of key project members (Chua et al., 1999). Bayliss (2002) in his report said that successful project delivery requires the concerted effort of the project team to carry out the various project activities, but it is the project manager who, at the center of the project network, is responsible for orchestrating the whole construction process. Possessing the core project management

competence would help to define the ability of project managers to deliver good performance towards the attainment of project success.

2.03 Determinants of Project Success for Sustainable Housing

The subject of project management is vast and numerous authors continuously add to the body of literature on the subject. According to the Project Management Institute (2004), the discipline of project management can be defined as follows: Project management is the art of directing and coordinating human and material resources throughout the life of a project by using modern management techniques to achieve predetermined objectives of scope, cost, time, quality and participation satisfaction. Project management best practices may be described as optimum ways of performing work to achieve high performance (Ramabadron et al., 1997). According to Dey (2002), current project management practices of organizations in the industry sector do not always ensure success. The main problems with projects planning and implementation have been cost and time overruns and quality non-achievement. Dey (2002) stated that the main contributing factors are: Expansion of the scope and subsequent quality increases of input resources; Engineering and design changes; Underestimation and incorrect estimation unforeseen inflation, Project size and complexity.

Dey, (2012) illustrates projects management growing popularity has stimulated interest in how companies compare in their application of project management process, tools and techniques. Successful project management can contribute towards project success but is unlikely to be able to prevent project failure (De Wit, 1988). Cook (2002) developed a framework identified project management success factors critical measuring sustainable housing and project management success factors in sustainable housing. This is illustrated in figure 1 below.

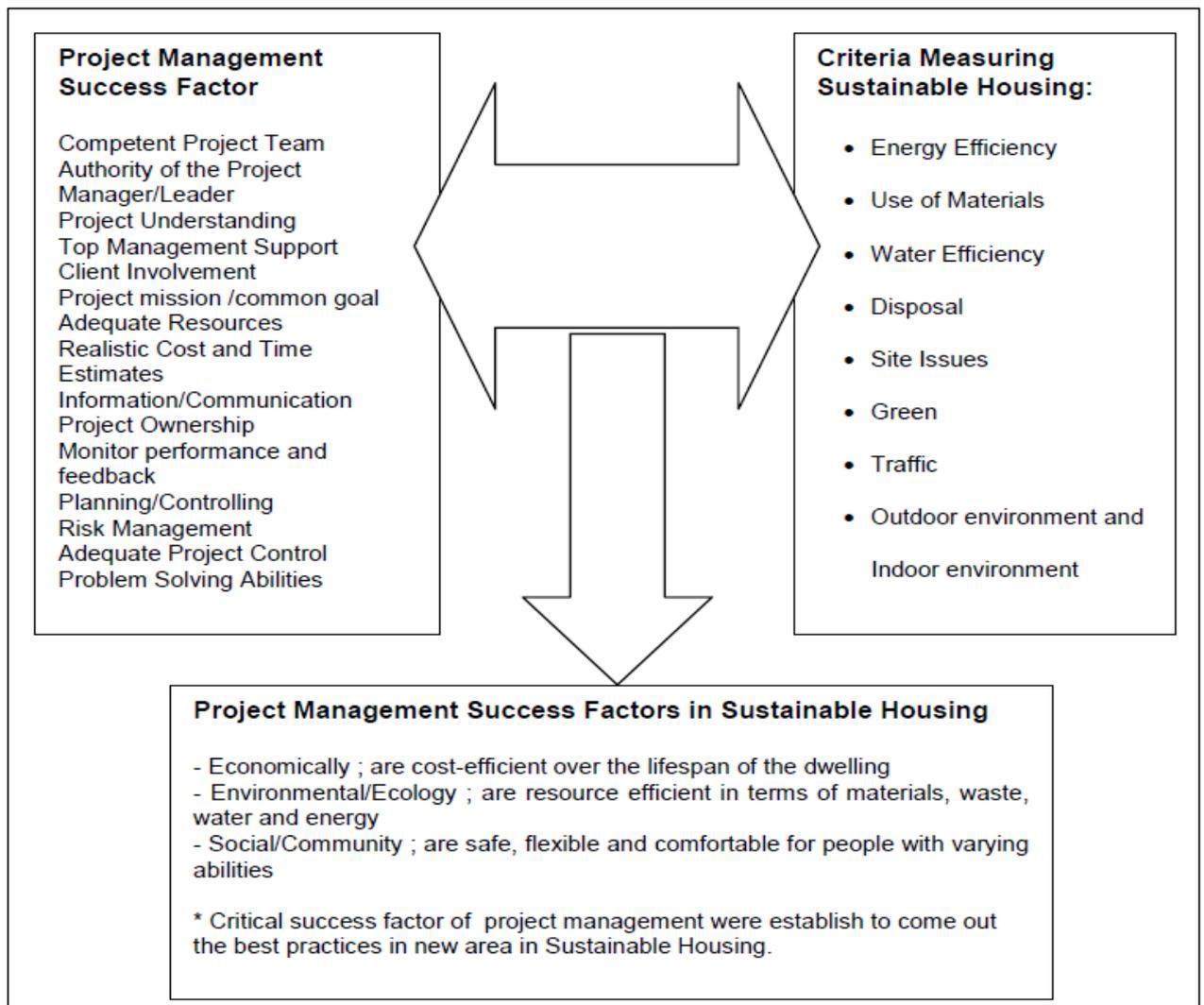


Figure: 2.1 Framework of Project Management Success Factors in Sustainable Housing.
Source: Cooke, (2002)

An extensive literature survey on sustainable housing also has been carried out to select criteria measurement frameworks for this study. The relevant literature has revealed that different researchers have adopted similar sustainability criteria’s framework that consider on three basic themes of the sustainable construction; social, environmental, and economic.

2.04 Best Practice in Project Management System

Successful implementation of project management best practice in housing development, as espoused in the relevant ISO 9001 standard, requires effective planning, operation and review, as well as continuous improvement of the system at all levels of an organisation. Best practice has been defined by the British Standards Institute (BSI) (2009) as the extent to which planned activities are realised and planned results are achieved. The term “Best Practice” is particularly

pertinent to quality management system implementation, as companies that adopt a best practice in housing development must meet their specified quality requirements and prescribed quality objectives without any shortfalls, in order to be seen to have successfully implemented their strategies.

However, according to Al-Nakeeb *et al.* (2008), best practice in housing development from BSI appears to mislead people into thinking that it implies that the effectiveness comes from solely meeting the specified requirements and the prescribed quality objectives. In fact, it refers to the effectiveness of the system in meeting and complying with the specified requirements of the adopted standard. This means that best practice in the overall sense should really mean both things; the *full* meeting of a company’s own specified quality requirements, together with meeting the prescribed quality objectives (Kam and Tang 2007), referred to in the eight quality management principles and the elements of ISO 9001. In addition, Oztas *et al* (2011) argue that the best practice of a system needs to be judged by how well a construction company operates and whether it achieves its goals in meeting customer expectations. This view is illustrated in Figure 2.

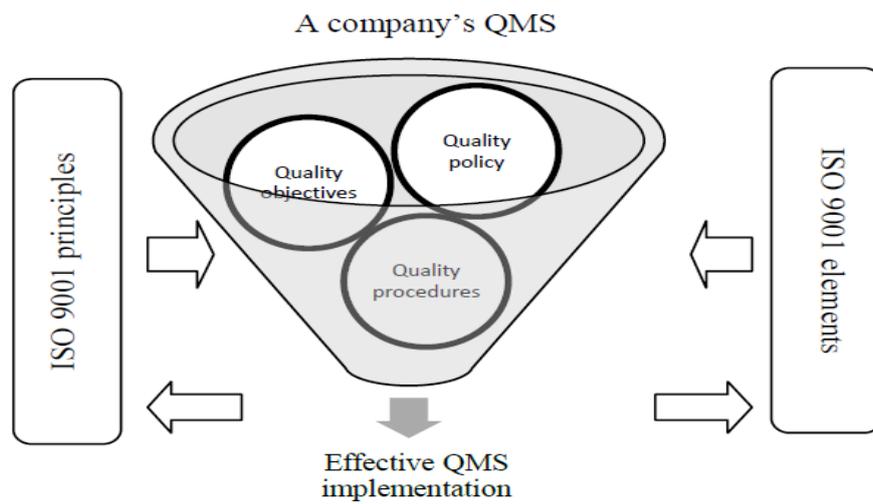


Figure 2.2: An effective best practice complies with ISO 9001
Source: Cooke, (2002)

Recent publications on construction quality management highlight the important activities that should be performed in relation to the application of an effective QMS-ISO 9001. According to Rumane (2011), an organisation needs to demonstrate its ability to consistently provide

products that meet or exceed customer expectations and satisfaction, while also adopting appropriate processes for the continued improvement of the QMS and related assurances of conformity to customer and applicable regulatory requirements. Watson and Howarth (2011) also emphasize that for ISO 9001 to remain a process-based system with heavy emphasis on compliance, an organisation is required to rigorously conduct an assessment of organisational performance, set against a standard and leading to accreditation. Clearly, the context of an effective QMS implementation is to ensure that work is performed according to specifications, throughout the design and development phases, manufacturing and construction, and servicing, and also ensure that customers are satisfied with the resulting products and services (Beaumont 2006). Figure 2.3 illustrates the process model of ISO 9001, with the focus on customer requirements and satisfaction.

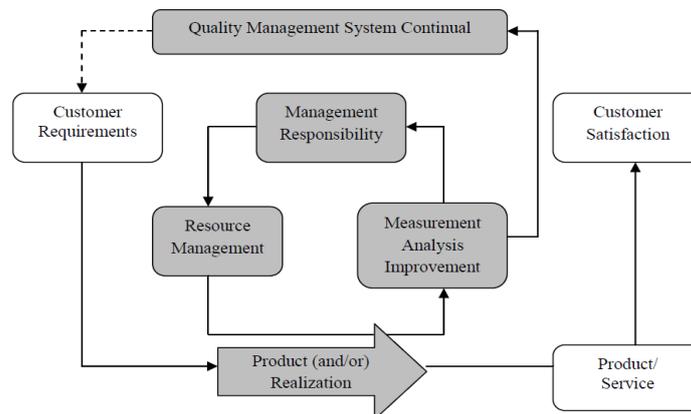


Figure 2.3: ISO 9001 Process Model
Source: (Watson and Howarth, 2011)

Effective implementation of best practice management and espousing quality values or adopting a high-level quality philosophy, whether by virtue of operating a QMS-ISO 9001 or applying a TQM approach, potentially provides benefits that are needed, even in the most competitive construction environments. Table 2.1 summarises the potential benefits of ISO 9001 deployment for construction organisations.

Table 2.1: Benefit of Applying Best practices in housing development

Area of Improvement	Benefits of ISO 9001	Representative Authors
Construction project	<ul style="list-style-type: none"> • Preventing work repetition and project delays • Buildability factor of most projects can be increased while the project cost is decreased • As an effective and appropriate working platform at both design and construction stage of a project • Efficient in using material resources 	Low and Wee (2001), Low and Abeyegoonasekera (2001), Ofori, Gang and Briffett (2002), Farooqui and Ahmed (2009)
Project management	<ul style="list-style-type: none"> • Consistent and effective control of key processes and project management • More efficient and effective utilisation of scarce resources. 	Farooqui and Ahmed (2009), Watson and Howarth (2011)
Quality	<ul style="list-style-type: none"> • Failure to meet specifications can be minimized • Promoting control of suppliers and subcontractors and the development of effective supply chain management • Provide a corporate quality advantage 	Low and Wee (2001), Farooqui and Ahmed (2009), Watson and Howarth (2011)
Organisation performance	<ul style="list-style-type: none"> • World-wide recognition and be chosen to bid in both local and global market contracts • Provides a means of achieving a top-quality performance in all areas/activities • Reduced inspection costs hence improved corporate profitability • As a tool to help contractors establishing and measuring their performance indicators 	Ofori, Gang and Briffett (2002), Turk (2006), Farooqui and Ahmed (2009), Lordsleem, Duarte and Barkokébas (2010), Watson and Howarth (2011)
Management system	<ul style="list-style-type: none"> • Improvement of organisation communication system and working environment • Better efficiency • Continual improvement • Greater emphasis on leadership, team spirit and motivation • Change management and adequacy of training • Planning and review process to ensure that the system in place remains suitable • Effective and capable of identifying new opportunities • Provide clear and valid operating procedures 	Low and Abeyegoonasekera (2001), Ofori, Gang and Briffett (2002), Farooqui and Ahmed (2009), Lordsleem, Duarte and Barkokébas (2010), Leonard (2010), Watson and Howarth (2011)

Source: Cooke, (2002)

All the above advantages cited for construction organisations are based on the lessons learned from the use of an appropriate and effective quality system framework for controlling the processes required when constructing a project. An example cited in the research of Zin, Chen and Ali (2009) is that the majority of Malaysian constructors have been able to improve their company competitiveness by 80%, after having certified to ISO 9001. This clearly indicates that QMSs need to be developed and implemented effectively, for any construction company wishing to become a sector leader. Nevertheless, given the benefits of ISO 9001 deployment, the implementation process can be a problematic one. The following sub-section reviews critical issues relating to the successful implementation of effective QMSs.

Research Methodology

This study covered five (5) housing estates in Minna, Niger State, Nigeria. It investigated the type of project management best practices used in the development of selected mass housing estates. For the purpose of this study, two sets of data were gathered; namely: - qualitative and quantitative data. The population for the study comprised the contractors, residents of the estates and relevant government agencies that were involved in the development of housing estates. Questionnaires were used as instrument for data collections. Relevant statistical analysis were used to analyse data collected and to explore different issues of this research. The questionnaire was filled out by interviewing relevant respondents. This method enhanced data accuracy and seriousness. It also accounted for 94% response rate. The questionnaire was designed from review of related literatures and content validated in line with research objectives before final administered to respondents.

Results and Discussion

Table 2 shows identified project management best practices used in mass housing development in Minna. The respondents were presented with 15 options and asked to indicate the extent of their use in project. Respondents were also encouraged to include any tools or techniques not mentioned, were necessary. The analysis in Table 2 shows that Project Understanding ranked 1st with Weighted Average of 251 (WT-251, R-1), Top Management Support ranked 2nd with Weighted Average of 247 (WT-247, R-2), Risk Management, Adequate Project Control, Realistic Cost and Time were ranked 3rd with Weighted Average 246 (WT-246, R-3), Competent project team, client involvement and problem solving ability were ranked 4th with Weighted Average of 244 (WT-244, R-4), Project ownership, Project mission and adequate resources are some of the rarely used or not employed tools. This really shows that project management best practices are still not well implemented in most of the public agencies surveyed.

Table 2: Identified Project Management Best Practices

Project Management Best Practice Used	Level of Use					Weighted Average	Ranking of Factors
	1	2	3	4	5		
Competent Project Team	0	0	7	37	15	244	4 th
Authority of the Project Manager	0	0	14	32	13	235	5 th
Project Understanding	0	0	12	20	27	251	1 st
Top Management Support	0	0	9	30	20	247	2 nd
Client Involvement	0	0	6	39	14	244	4 th
Project Mission	4	0	4	43	8	228	8 th
Adequate Resources	2	3	9	39	6	217	9 th
Realistic Cost and Time	2	2	4	45	6	246	3 rd
Information / Communication	2	0	12	26	19	237	6 th
Project Ownership	1	4	8	33	13	230	7 th
Monitor Performance and feedback	2	0	12	26	19	237	6 th
Planning / Controlling	0	0	9	40	10	237	6 th
Risk Management	0	0	6	37	16	246	3 rd
Adequate Project Control	0	0	8	33	18	246	3 rd
Problem Solving Abilities	0	0	7	37	15	244	4 th

NB: 5 = Strongly Agree; 4= Agree; 3= Undecided; 2 = Disagree; 1= Strongly Disagree

Source: Field Survey, 2019

Table 3 shows the extent to which the identified project management best practices were used, it shows that Competent Project Team and Planning / Controlling ranked 1st with Weighted Average 234 (WT-234, R-1), Project Ownership, Monitors Performance and Feedback and Project Mission were ranked 2nd with Weighted Average 226 (WT-226, R-2), Authority of the Project, Top Management Support and Problem Solving Ability were either to a fair extent used or Not used at all.

Table 3: Examine the extent to which the identified project management best practices were used

Project Management Best Practice Used	Extent of Use					Weighted Average	Ranking of Factors
	1	2	3	4	5		
Competent Project Team	2	3	5	34	15	234	1 st
Authority of the Project Manager	5	5	5	29	14	211	5 th
Project Understanding	4	3	11	26	15	222	4 th
Top Management Support	7	4	9	30	9	207	6 th
Client Involvement	4	0	4	43	8	228	3 rd
Project Mission	0	0	7	37	15	226	2 nd
Adequate Resources	0	0	14	32	13	228	3 rd
Realistic Cost and Time	0	0	8	33	18	222	4 th
Information / Communication	0	0	9	40	10	222	4 th
Project Ownership	2	4	9	31	13	226	2 nd
Monitor Performance and feedback	2	4	9	31	13	226	2 nd
Planning / Controlling	2	3	5	34	15	234	1 st
Risk Management	5	5	5	29	14	211	5 th
Adequate Project Control	4	3	11	26	15	222	4 th
Problem Solving Abilities	7	4	9	30	9	207	6 th

NB: 5 = To a great extent; 4= To a considerable extent; 3= To a moderate extent; 2 = To a fair extent; 1= Not at all

Source: Field Survey, 2019

Figure 3 shows the sustainable integration of project management best practices in Mass Housing Project delivery in Niger State. The sustainability factors were examined through economical, environmental and social, which involve cost efficient over the lifespan of the project, resources efficient in terms of materials, waste, water and energy, and also flexible and comfortable for people with varying abilities. The figure shows that 26% suggest social as the best sustainable factor, 31% suggest environmental as the best sustainable factors while 43% suggest economic as the best factors for sustainable.

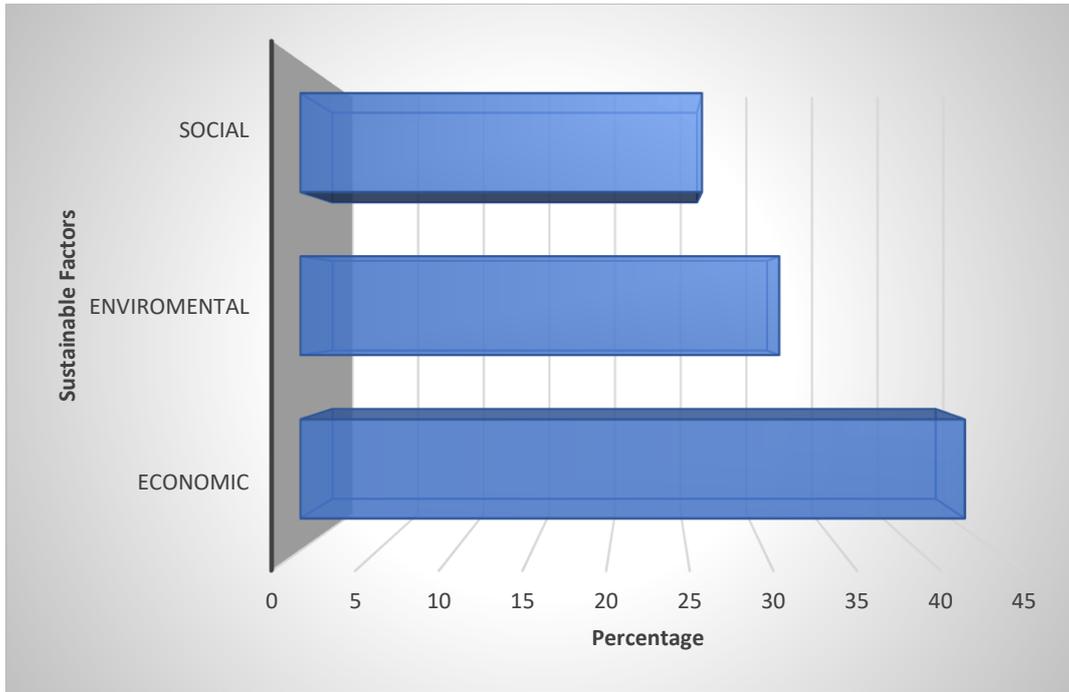


Figure 3: Sustainable factors for best project management practices

Source: Field Survey, 2019

Conclusion

Applying project management best practice in mass housing project has become an important issue in many developing countries, due to its successful application in private organizations and its proven effectiveness and flexibility in attaining project goals and objectives. Due to its nature as an urban area, Minna is witnessing unprecedented capital projects in all the facet of developments, which require better application and utilization of efficient, and effective management tools and techniques. Studying the application of project management best practices in mass housing project in Minna would serve as eye openers to the government and other decision maker to better plan their effort toward efficient application of project management practices. If properly applied, project management practices would result in concrete benefits in all aspects of project planning, scheduling and controlling the cost, time and quality.

Educational qualification of the respondents revealed that good majority of the sampled population are well educated which provide a solid base for better utilization and application of project management practices. Project Understanding, Top management, Risk management, adequate project controlling and realist cost and time are some of the identified project

management best practice used by the respondent because of their simple and understanding nature, however, lack of in-depth knowledge of these practices still form a crucial obstacle facing application. In terms of perceived benefits, the consensus is that applying project management best practices efficiently will help in project tracking, better communication, better resource utilization and better quality among others. The drawbacks in form of high cost, lack of expertise in PM and difficulty in real world modelling are mentioned by the respondents. To tackle the drawbacks, the respondents believed that adequate training should be given to the employee in art of PM, professionals in PM should be employed and Project management Offices should be established across the government institutions.

Recommendations

In view of the findings of this research, the study recommends the following actions, for application of project management best practice in Minna, Niger State and Nigeria in general;

- (i) Compatible organizational form should be chosen so as to make the application of PM practices consistent with culture and political environment of government institutions.
- (ii) Project management practices should be applied gradually especially in old government institutions where resistance to change is relatively high. Drastic application should be avoided so as not to lead to disruptive changes such as power struggles, loss of job and management embarrassment.
- (iii) Adequate PM training should be given to employee in charge of projects; this would increase employees knowledge on the different PM practices available for appropriate choice.
- (iv) PM professionals should be employed for proper and adequate application of PM best practices on public sector projects.

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