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Relationship between Project Related Factors, Ethical Practices and Building Performance: An Empirical Study of the Construction Industry in Lagos State of Nigeria

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ABSTRACT

Corporate organizations and individuals have advocated several performance indicators for construction projects. This study uses the indicator of ethical practices and project related factors to investigate the factors that influence building performance in Nigeria. This study is aimed at investigating the association between project related factors, ethical practices, and building performance in the Lagos State of Nigeria. A sample of 250 questionnaires was distributed to professional builders in Lagos State, Nigeria, out of which 152 were found valid for statistical evaluation. The Statistical Package for Social Science (SPSS) Version 26 was used for data analysis. The results revealed that project related factors and ethical standard practices positively influence building performance. However, the study found no relationship between ethical honesty and accountability and building performance. This study helps construction industry policy makers to develop factors that improve building performance. This study contributes to the construction industry by confirming the importance of project related factors and ethical standard practices in improving building performance.

Keywords: Building performance, ethical practices, project related factors

INTRODUCTION

The construction industry plays a critical role in the economic growth and development of both developed and developing nations (Ali *et al.*, 2014). The construction industry provides structures that enhance life quality, generate employment, and contribute to both developed and developing countries' Gross National Product (GNP) and Gross Domestic Product (GDP). For example, in conjunction with its professional services and supply chain, the construction industry contributes 7% annual GDP and an annual output of over £110 billion in the United Kingdom (UK) (Urbanski *et al.*, 2019). In Hong Kong, it contributed 5.6% of GDP and accounted for 9.2% of the total labor force (Guo, *et al.*, 2019).

The construction industry in Nigeria accounts for almost 70% of the nation's fixed capital formation and 3.88% GDP (Abdullahi and Bala, 2018). The industry employs approximately 8 million people, representing about 25% of Nigeria's workforce and the largest employer of construction labor in Africa (Abdullahi and Bala, 2018). This indicates the sector's significance to the Nigerian economy (Unegbu *et al.*, 2020). Ali *et al.* (2014) noted that the construction industry is significant to the sustainable and socio-

economic development of both developed and developing countries. The industry provides shelters and infrastructures such as roads, railways, hospitals, schools, offices, houses etc. and employs the unemployed or underemployed youth (Bello and Saka, 2017).

However, Longtau *et al.* (2016) posit that building construction performance in Nigeria is poor and a complete absent of improvementNigerian building construction industry is characterized by evidence of poor performance due to high construction costs; delays in project delivery; poor quality work; incidences of collapsed buildings; and health and safety challenges (Odesola and Idoro, 2014). According to Agwu (2014), building construction failures and collapses are not new occurrences in the construction/building industry, but what is disturbing is the alarming rate at which structures fail or collapse, particularly in developing countries.

Scholars attribute the poor performance of building construction to factors such as poor performance of Nigerian building construction to failure of regulatory institutions. Non-compliance with specifications and existing laws by professionals is one of the noticeable reasons for poor building performance. Femi (2014) highlighted that several defects in the buildings occur due to non-compliance with the specification of the civil engineers. Moreover, the study also observed that the builders made non-compliance with appropriate construction codes and building standards, which are evident from the construction defects. When contractors ignore the building regulations, they take the risk of building collapse. This is because the Building Regulation Act signifies all the rules associated precisely with the control of the construction of structures (Ebekozien, 2020). However, Fagbenle and Oluwunmi (2010) also asserted that a prevailing regulation is worthless and devoid of support as it is without a mechanism to guarantee compliance since the average civilian does not observe a law that is not obligatory.

Poor project management in the construction industry involves inefficient project-related factors and unethical professional practices. Mahamid (2016) noted that poor construction project management results in poor project performance while good construction project management improves construction project performance. In addition, several studies have revealed that unethical practices negatively affect building construction performance (Oloke *et al.*, 2017). Unethical professional practices in the construction industry include lack of standard services, lawlessness, lack of honesty, irresponsibility and lack of accountability (Oloke *et al.*, 2017). Akinrata *et al.* (2019) stated that professional, ethical lapses in Nigeria led to poor building project performance, abandonment, capital flight and substantial economic loss in the form of additional costs to a project. Furthermore, the consequences of these unethical behaviors in the construction industry can lead to loss of confidence in the profession, continuous insecure practices that risk lives and property, loss of income by clients and governments.

Moreover, several studies have discussed the rate and number of poor and collapsed buildings in Nigeria, specifically in Lagos State. For example, Windapo and Rotimi (2012) assert that over one hundred and twelve (112) buildings collapse between the years 1978 and 2008 in Lagos State. Building collapse and poor performance in Lagos State is a continuous incidence as a school building collapsed on 12th March 2019 and killed over twenty pupils, many injured and properties destroyed in Lagos State (Vanguard, 2019; The Guardian, 2019). Building collapse and poor building performance in Lagos State is more than all other states in Nigeria. Figure 1 shows the pie chart of the reported cases of building collapse in Nigeria from 2009 to 2019. As shown in Figure 1, building collapse in Lagos State alone between 2009 and 2019 is more than all other states put together in Nigeria.

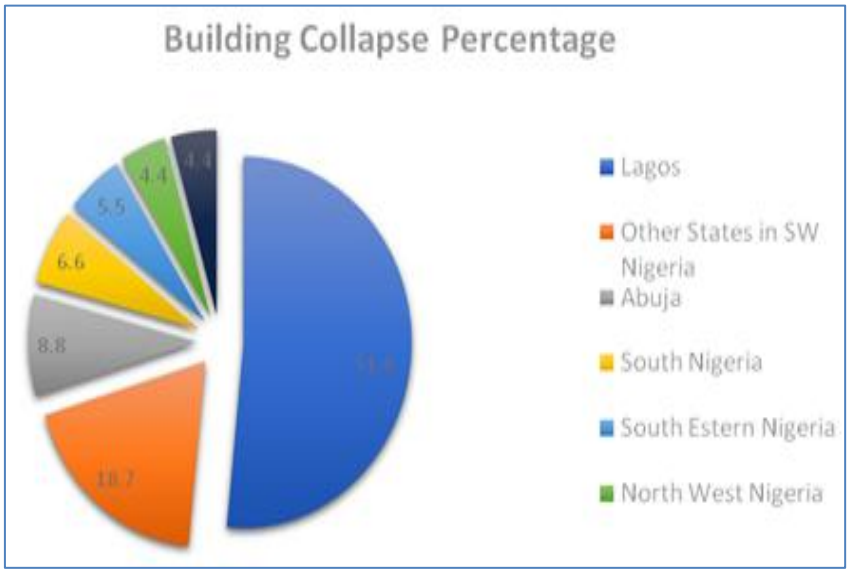

Figure 1: Pie Chart of Reported Cases of Building Collapse in Nigeria (2009–2019)
Source: Odeyemi *et al.*, 2019

Poor project management cause by inefficient Project Related Factors are some of the major factors influencing poor building performance and collapse in Lagos State (Ayodeji *et al.*, 2017). Also, unethical practices have been identified as a factor that

influences poor building performance and collapse in Lagos State (Oyewobi *et al.*, 2011). Thus, building poor performance and collapse in Lagos State is caused by poor project management and unethical practices.

The construction industry in Nigeria is confronted with problems which hinder it from attaining its full potential. Hence, it adversely affects its contribution to national gross output (Ebekozien, 2020; Okoye et al., 2016). Thus, there is a need to tackle the problems confronting the construction industry in Nigeria in order to maximize its potential and improve the Nigerian economy. Improving the construction industry's performance translates into an improving the economy of Nigeria. Therefore, this study set out to investigate the association between project related factors, ethical practices and building performance in Lagos State, Nigeria.

LITERATURE REVIEW

Building Performance

Building performance is the efficient functioning of buildings and its impact on the natural environment, urban environment, and users. It is achieved through architectural design values, building science, architectural engineering, efficient energy use and sustainability (Wikipedia, 2017). According to Clift and Butler (1995), building performance is used to denote the physical performance characteristics as a whole and/or its parts (Ackley and Ukpong, 2019). This denotes a building's ability to contribute to fulfilling the functions of its intended use (Islam *et al.*, 2019). The performance of a building can also be dictated by the way the building users interact with its physical, business and work environments. In a way, the performance approach involves defining user requirements and performance criteria to be used in a systematic appraisal for predicted or actual performance throughout the entire building life cycle (Zakaria *et al.*, 2020). For building performance to be measured or improved, building officers need to establish goals that are guided by comfort, aesthetics, safety, health etc.

There is several studies aimed at improving building construction performance in Nigeria (see Ishaq *et al.*, 2019; Abdullahi and Bala, 2018; Oloke et al., 2017; Oyedele *et al.*, 2015; Chendo and Obi, 2015; Olagunju *et al.*, 2013; Oyewobi *et al.*, 2011). Oloke *et al.* (2017) study how post-development management of property can improve building collapse in Nigeria. The study revealed that, property owners and non-professionals abuse the property management function. Moreover, Oyedele *et al.* (2015) identified the factors affecting building construction processes to improve construction quality in Nigeria. The study identifies poor site installation procedure, lack of quality assurance, poor quality of materials delivered to site, poor inspection and testing and low level of skill and labour experience as affecting construction quality in Nigeria. Chendo and Obi (2015) examine factors that cause building collapse and its effects on the stakeholders and general public in Nigeria, while Olagunju *et al.* (2013) examine the critical causes of building collapse and its types.

Furthermore, Akinrata *et al.* (2019) identified the causes of unethical practices in the construction industry in Nigeria. The study posits that poor quality, high maintenance costs and client's dissatisfaction are the major ethical misconduct in the construction industry. Ogunde *et al.* (2017) study how PM can improve construction performance in Nigeria through project managers. Their study focuses on the role of project managers in improving construction performance. Finally, Adeyemi *et al.* (2013) study the effect of PM on a construction company's performance in terms of technical and business success.

Poor building construction performance leads to building collapse in Lagos State than any other state in Nigeria. However, literature on building construction performance in Lagos State of Nigeria is limited. Hence, there is need for research on building construction performance in Lagos State of Nigeria. This study intends to integrate project-related factors and professional ethics practices to improve building performance in Lagos State of Nigeria.

Project Related Factors

Several researchers and professional organizations have shown that Project Related Factors improve project performance (Truman and King, 2018; Hornstein, 2015). In literature, there are several project related factors presented by different researchers and professional organizations. For example, Olawumi and Chan (2019) and Radujković and Sjekavica (2017) posit that project-related factors include the nature of the project, type of project, size of the project, project complexity, communication system, feedback capabilities, control mechanisms, planning effort, effective safety program implementation, development of an appropriate organizational structure, sub-contractors' work control, and overall managerial actions are project-related factors critical for project performance.

On the other hand, Truman and King (2018), Hornstein (2015) and Project Management Institute (2013) presented Project Initiating, Planning, Execute, Monitoring and Control and Close and Handover System as project-related factors that improve project performance. Accordingly, Project Related Factors are employed to achieve construction project performance or objectives (Truman and King, 2018; Hornstein, 2015; Project Management Institute, 2013). Project managers employ project Related Factors to function in its knowledge areas.

Project initiation involves a new project or phase of an existing project definition. This involves identifying and describing needs, specification, requirements, project charts, and the establishment of the project team (Najmi, 2011). Planning is a critical and challenging process in project management related factors (Radujković and Sjekavica, 2017). Planning identifies and defines the

scope and cost of a project. It also involved scheduling activities that may occur during the project lifespan (Ngoc, 2010). The execution process in project management implements the project management plan to achieve project objectives or requirements (Ngoc, 2010). This involves coordinating resources and people, schedule activities and implementation. Project execution can consume time and energy involving physical and practical effort (Najmi, 2011). Monitoring and controlling processes in project management track, assess and control progress, variance, performance and provide feedback. It also identifies problems in project implementation and reviews accordingly. Project closure and handover system is the last process in project-related factors. It ensures formal closure of activities and handover in a project.

Moreover, project-related factors are management tools employed worldwide to improve construct performance in general. Project management factors are comprehensive and can improve building construction performance. Project management factors are published by Project Management Institute (2004; 2013) and have been employed by other scholars to describe Project management implementation processes that can improve project performance. This study intends to follow PM factors to improve building construction project performance in Lagos State of Nigeria. Hence, this study examines the association between project-related factors and building performance in Lagos State of Nigeria. Therefore, it is hypothesized that:

H1: There is a significant positive effect of Project Related Factors (PRF) on Building Performance (BP).

Ethical Practices

Ethics is fundamental for every performing business and industry (Barnett 2019). Thus, ethical practices can improve the project management process and building construction performance. Dindi (2016) and Abdul-Rahman *et al.* (2010) posit that ethics is critical for construction industry performance. According to Ho (2011) ethical behavior is morally and legally accepted behavior in society. Also, Cox (2020) define ethical behavior as morally right or good behavior. Ethical behaviour conforms to personal, professional, organizational, and societal values (Murphy and Kiffin-Petersen, 2017).

According to Lee *et al.* (2018), ethics generally comprises a system of moral principles by which human actions and proposals may be judged good or bad (being right or wrong). It also refers to the rules of conduct recognized in respect of a class of human actions and the moral principles of an individual. Fellows (2003) affirmed that professional ethics is a system of behavioral norms. This means that a professional ensures that clients' interests are put before their own interests and that public interest is recognized and respected (Abdul-Rahman, 2008). Vee and Skitmore (2003) assert that professional ethics is treating others with the same degree of honesty that they would like to be treated.

Ethical practices in construction industry are viewed from different perspectives by different scholars (Dindi, 2016). There are three main perspectives of ethical practices in construction industry. The three main perspectives are management/business ethics, professional ethics, and personal ethics. Management/business ethics is expected behavior of an individual guided by management or business principles in an industry or group in an industry (Ho, 2011). For example, Ho (2011) reviewed management ethics theories in construction industry.

Professional ethics is the expected behavior of an individual guided by a set of professional practice principles in an industry or group (Dindi, 2016; Vee and Skitmore, 2003). For instance, Abdul-Rahman *et al.* (2010) studied the impact of professional ethics on construction quality in developing countries. The study concludes that the prerequisite to attain sustained and acceptable quality in the construction industry is professional ethics. On the other hand, personal ethics is an individual's moral principles or behavior guided by personal decisions (Dindi, 2016). Hence, this study thus focuses on ethical practices (standard practice and honesty) and examine their relationship with building construction performance in Lagos State of Nigeria. Therefore, it is hypothesized that:

H2a: There is a significant positive effect of Ethical Standard Practice (SP) on Building Performance (BP).
H2b: There is a significant positive effect of Honesty (H) on Building Performance (BP).

METHODOLOGY

This study adopted a survey research design whereby a questionnaire was distributed to the respondents. The population of this study is 250 building professionals in Lagos State of Nigeria. One hundred fifty-two builders, quantity surveyors and civil engineers were randomly selected from the total population for data collection. This study employs a stratified random sampling technique as the population consists of several distinct categories. Thus, the sample for this study would be organized by the categories into separated "strata." The "strata" are: (1) Builders, (2) Quantity Surveyors, (3) Civil Engineers. The technique is appropriate for this study because the population varies in characteristics. The variables are measured on a Likert type scale of one to five (The five-point Likert-type scale ratings are from 1= Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree and 5=Strongly Agree). Table 1 reveals the profile of the respondents.

Table 2: Descriptive analysis

Profile	Category	Number	Frequency (%)
Gender	Male	113	74.3
	Female	39	25.7
Age	30 years and below	17	11.2
	31 - 40	55	36.2
	41 - 50	56	36.8
	51 - 60	21	13.8
	61 and above	3	2.0
Category	Builder	66	43.4
	Quantity surveyors	34	22.4
	Civil engineer	52	34.2
Education	Secondary school	7	4.6
	Bachelor's degree	103	67.8
	Postgraduate	42	27.6
Experience	5 years and below	24	15.8
	6 - 8 years	59	38.8
	9 - 11 years	48	31.6
	12 years and above	21	13.8

The result of descriptive analysis shows that, out of the total respondents (152), there are more male respondents (74.3%) than the female respondents which represents only (25.7%). More so, the result shows that 36.8% of the respondents are within the age group between 41 – 50 years, while 36.2% are between 31 – 40 years old. The lowest age representation is age group 60 years and above (2%). Furthermore, 43.4% of the respondents represents the builder's category, 34.2% represents the civil engineers, while 22.4% represents the quantity surveyors. Most of the respondents hold a bachelor's degree and above. 67.8% of the respondents have a bachelor's degree while 27.6% hold a postgraduate certificate (Master and/ PhD). Only 4.6% of the respondents are high school certificates holders. Lastly, 38.8% of the respondents have between 6 to 8 years of work experience, 31.6% have between 9 to 11 years of work experience, while 15.8% have experience of 5 years and below and 13.8% have between 12 years and above.

MEASURES

The constructs items used in this study are adopted from previous studies. Building performance is measured with seven (7) items adopted from Clough and Sears (1994), Cox *et al.* (2003) and Nnaji (2015). Also, project-related factors were measured with seven (7) items that were adopted from Belout (1998), Chua *et al.* (1999) and Walker and Vines (2000). Lastly, this study operationalized standard practice (Ethical practice assessment) with five (5) items adopted from Vee and Skitmore (2003) and International Ethics Standards (2016); and honesty (Ethical practice assessment) with five (5) items adopted from Vee and Skitmore (2003) and International Ethics Standards (2016).

Table 2: The Measurement of variable

Measurement	Questionnaire		Sources
	Number of Question	Total of items	
Independent Variable			
Project Related Factors	1 to 7	7	Belout (1998), Chua *et al.* (1999) and Walker and Vines (2000)
Standard Practice	8 to 12	5	Vee and Skitmore (2003) and International Ethics Standards (2016)
Honesty	13 to 17	5	Vee and Skitmore (2003) and International Ethics Standards (2016)
Dependent Variable			
Building Performance	18 to 24	7	Sears & Clough (1994), Cox *et al.* (2003) and Nnaji (2015).
Total		24	

Statistical Analysis

The collected data was statistically analyzed using the statistical package for social sciences (SPSS) version 26 to decide whether the developed hypotheses are supported or not. The specific statistical techniques that will be employed in this study is multiple regression analysis.

DATA ANALYSIS

The proposed relationships among the variables were examined using SPSS statistical software. The model measurement which shows the factor loading, composite reliability, average variance extracted and the test for normality are presented in table 3. While Table 4 shows the results of the path coefficients and hypotheses testing.

Measurement Model

In this study, skewness and kurtosis are used to assess normality of the data. The results indicate that the data are normally distributed because the value of skewness and kurtosis of all the constructs are between the acceptable range of ±2 (Georgy and Mallery, 2010). Also, the results of standardized confirmatory factor analysis show that all factor loading were significant at $p = 0.0001$. Furthermore, the data in this study is fit for factor analysis because the value of Kaiser-Meyer-Olkin (KMO) (0.713) is above the recommended threshold of 0.60 (Maiyaki and Mouktar, 2011). Hitt *et al.* (1996) posits that factor loading of 0.50 and above are used in social science. Hence, as shown in the table below, all factor loadings are above 0.50. Moreover, Cronbach alpha was used to test the reliability of the instruments. The result indicates that all constructs are consistent and reliable. This is because the value of Cronbach alpha is above the acceptable threshold of 0.70 in all constructs. In addition, the values of the composite reliability (CR) show internal consistency and reliability. The values were found between 0.719 and 0.807 for all the constructs, which is above the acceptable range of 0.70 (Hair *et al.*, 2010). More so, the values of average variance extracted (AVE) is above the threshold of 0.5. Hence, this shows that the results of this study have a good convergent validity because the values of AVE fulfil the criteria.

Table 3: Measurement model

Construct	Items	FL	Alpha	AVE	CR	Skewness	Kurtosis
Project Related Factors	PRF1	0.756	0.747	0.551	0.732	-0.229	-1.032
	PRF2	0.775					
	PRF3	0.876					
	PRF4	0.877					
	PRF5	0.940					
	PRF6	0.946					
	PRF7	0.912					
Standard Practice	SP1	0.942	0.766	0.681	0.807	-0.836	0.391
	SP2	0.755					
	SP3	0.801					
	SP4	0.912					
	SP5	0.896					
Honesty	H1	0.799	0.752	0.544	0.727	-0.829	0.375
	H2	0.727					
	H3	0.885					
	H4	0.598					
	H5	0.912					
Building Performance	BP1	0.888	0.793	0.533	0.719	-0.512	-0.202
	BP2	0.849					
	BP3	0.899					
	BP4	0.882					
	BP5	0.940					
	BP6	0.946					
	BP7	0.911					

Hypothesis Results

Table 4 below shows the result of the regression analysis which was obtained through SPSS statistical analysis. 96.9% of the variance in this model explain the relationship between project related factors, ethical practices and building performance. As expected, factors that influence building performance are mainly determined by project related factors ($\beta = 0.353$, $p < 0.001$), and ethical practices. The ethical practices is measured through standard practice ($\beta = 0.643$, $p < 0.001$) and honesty ($\beta = 0.060$, $p > 0.05$). Hence, it is concluded that project-related factors is significantly associated with building performance. Also, ethical practice measured through standard practice have a significant relationship with building performance. However, the study found no association between honesty and building performance.

Table 4: Hypothesis result

Hypothesis	Relationship	Std. Beta	t-value	p-value	Decision
H1	PRF ⟶ BP	0.353	9.555	0.000	Supported
H2a	SP ⟶ BP	0.643	19.740	0.000	Supported
H2b	H ⟶ BP	0.060	1.360	0.176	Not Supported

DISCUSSION AND ANALYSIS

The main objective of this study is to investigate the relationship between project related factors, ethical standard practice, honesty and building performance in Nigeria. The result of this study reveals that project related factors and ethical standard practice are positive and significantly related with building performance. However, this study found no relationship between honesty and building performance. Moreover, the statistical result shows that almost 97% of the total variance of R2 explained building performance.

Specifically, this study found project related factors to have a positive and significant influence on building performance in Nigeria. The significant effect of project-related factors on building performance agrees with previous studies and professional organizations, showing that project-related factors improve building performance (Truman and King, 2018; Hornstein, 2015). Furthermore, the studies opined that project related factors are employed to accomplish building project performance or objectives. Therefore, project related factors of initiating, planning, executing, monitoring and control, close and handover system etc. are essential to the success and performance of every building project.

In addition, this study documents a significant relationship between standard ethical practice and building performance. Therefore, the result of this study concludes that high compliance with standard ethical practice will lead to high building performance. Hence, it is important to implement and observe professional, ethical standards to improve building construction performance. The result of this study corresponds with the findings of Okeke *et al.* (2020), who suggest that the skill, experience, and personal ability of the construction professionals are necessary to ensure building integrity.

Lastly, this study found no relationship between honesty and building performance in Nigeria. Thus, the result shows that honesty does not influence the performance of building in the construction industry. This result is against the opinion of Kuitert, Volker and Hermans (2019) who suggests that the construction industry needs to be honest, dynamic and reappraise the ethical conduct and perception of its professionals so that services provided by the industry can be improved.

This study has theoretically added to knowledge by assessing a country like Nigeria where poor building related issues are common. It has added mainly to knowledge by producing evidence in theorizing optimization of ethical standard practices and project related factors on its influence on building performance. This study has been beneficial to the professional in building related organizations. It has supported the efforts of professional organizations such as towards improving building performances by following standard practices. Hence, this study in respect of improvement of building performances will inform stakeholders such as the government, the professionals in charge of building projects and citizens on how to employ competencies, ethical standard practises, and project related factors in building performances.

CONCLUSION

The findings of this study provide empirical evidence on the association between project-related factors, ethical standard practices and building performance in Lagos State of Nigeria. This study indicates that building performance is the efficient functioning of buildings and their impact on the natural environment, urban environment, and its users. Among the factors that improve building performance in Lagos State are project-related factors and ethical standard practices. This study has theoretically added to knowledge by assessing Nigeria, where poor building-related issues are common. It has contributed to understanding by producing evidence to optimize the relationship between project-related factors, ethical standard practices, and building performance. It also produced evidence in supporting the insignificant roles of honesty or its influence on building performance. Hence, factors such as project related factors and ethical standard practices influence building performance greatly. Therefore, this study will inform stakeholders such as the government on the factor that enhance building performance.

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