Corruption Menace in Building Construction Industry in Nigeria: Causes and Remedies

Abstract: Industries play vital roles in nation's socio-economic development, and building construction industries constitute an integral path in the Nigerian industrial sectors. Thus, corruption is a social factor associated with the existence of mankind, as it strives to manifest itself when not prevented in every human activity that involves monetary encouragement. Corruption is one of the major negative phenomena in the construction industry that requires sustainable remedies. Therefore, this study investigates the variables that are associated with building construction processes ranging from tendering, construction stage, handover, post-occupancy, and maintenance to the corruption phenomenon that was regrouped into five basic corruption constructs [government influence and bureaucracy, unethical professional practice, client discretional opinion and control, societal greed, and project contractual types] in the Nigerian building construction industries. One hundred and twenty (120) structured questionnaires were administered to building construction professionals [architects, civil engineers, quantity surveyors, service engineers], government agencies in public building units, building contractors and related agencies, and individuals in the field of building construction industries across Ondo and Ekiti State, Nigeria. The collated data was analyzed using Structural Equation Modelling (SEM). Thus, government influence and untidy bureaucracy, societal greed, unethical professional practice, and the unguided imposition of clients' discretionary opinions on building construction projects constitute the major factors responsible for corruption in the building construction industry, as evidenced by our findings. In contrast, project contractual types and their indicators exhibit fewer challenges compared to other corruption factors. This study proposes remedies to address the findings and gives recommendations for achieving corruption-free building construction in Nigeria.

Keywords: Corruption Menace, Construction Industry, Monetary Engagement, Sustainable Construction Remedies, Building Professionals

1. Introduction and Background

The effect of building industries on the socio-economic development of a nation is enormous, and the high impact on Nigeria's socio-economic emancipation is huge and commendable [1]. But, the level of corruption recorded is disheartening and requires a lasting remedy [2, 3] and the corruption factor is enormous [4, 5, 6] and deserves a good solution approach in line with it causes [7]. Corruption involves undue influence, bribery, greed, given payback, embezzlement, and project contractual fraud, among other factors [8]. A building project involves stages ranging from preliminary planning, designing, approval, contract execution, supervision, delivery, and maintenance for its sustainability. Thus, these aforementioned processes require careful and adequate monitoring of the stages to achieve successful building project delivery [7]. However, the goal of achieving successful building project delivery is highly subject to its level of tolerance for corruption and its related elements in the process of the building project delivery. Building construction is carried out by experts in the building industry, primarily architects, civil engineers, Quantity Surveyors, Builders, Land Surveyors, Service engineers, and certified building contractors. The project often comes as private or public ownership, and it involves stages and processes that require monetary engagement. The aforementioned made corruption a phenomenon in the building construction industries when there is a lacuna in the professional building construction ethics among the professional parties involved. The professional deviation from the government's legal position and code of conduct for profit by an individual or group of people is termed corruption [9]. It involves taking undue advantage of others for personal gain. Corruption can be defined as the abuse of office or position for personal gain. It has a high tendency to lower the construction quality [9, 10]. It was defined by Transparency International as the misuse of power and authority for personal benefit [11, 12]. Corruption in the building industry spans the engagement scope of the client, the consultants, and the contractors. It encompasses embezzlement, unlawful benefit, extortion, and bribery [13, 14]. It becomes more severe when the experts in the building construction project collude to make unmerited and unlawful gains from the project. In the Nigerian context, corruption is posited as an important debacle that exhibits the tendency to hinder the project of the

National Millennium Development Goal [15]. It thrives smoothly in a society that embraces free wealth and uninvestigated financial status. It is on record that Nigeria was rated as a highly corrupt nation in a study conducted by Transparency International among 54 countries [16]. The corruption perception index of 2017 ranked Nigeria as one of the most corrupt nations, a factor that is traceable to the building construction industry in Nigeria [17]. Therefore, it can be assumed that building construction industries in Nigeria might not be excluded by the infested corruption identified in the country, as evidenced above. Thus, the corruption phenomenon in Nigerian building industries deserves to be addressed.

1.1. Problem Statement

Building construction industries are vital to Nigeria's socio-economic development. About 1.4% of Nigeria's domestic products and almost 70% of the country's fixed capital information are derived from building industries in Nigeria [18]. Every Nigerian establishment involved in project procurement tends to be corrupt [2, 4] as the award of contracts in Nigeria is characterized by corruption [18]. Several studies have been done on corruption [4, 11, 12, 13] while others have been conducted on corruption in building industries [2, 3, 19, 20]. Hence, building industries in Nigeria form part of the economic hub of the nation, and building professionals are stakeholders in its development. On this note, there is a need to investigate the cause and remedies to comb corruption in building construction industries via building professionals and stakeholder perspectives to achieve sustainable solutions to corruption in building construction industries in Nigeria.

1.2. Objectives

This study seeks to:

1) Itemize the variables that are responsible for corruption in the building construction industry in Nigeria.
2) Identify the corruptible variables that are associated with the professional stakeholders in the Nigerian building industry.
3) Proffer a good professional practice culture in the building construction industry in Nigeria.

2. Materials and Method

The study made use of a structured questionnaire to investigate the effects of identified corruptible variables associated with building construction industries as evidenced in existing research. Literature suggests that societal syndromes, level of public wage, government bureaucracy, transparency of rules and processes, regulation and authority influence, consultant compromise, contractors' false claims and declarations, and external pressure from client or government officials on the choice of contractor are reliable factors of corruption [21, 22]. Greed, profit motive, power, quackery, insecurity, and indiscipline are associated with corruption in building industries [18, 23, 24]. Therefore, to achieve a viable research result, we established corruption investigation variables as related to this study and summarized them as follows: social influence (greed, ignorance, illiterate level), Unethical professional practice, Government influence and bureaucracy, Client personal opinion / unprofessional discretional influence, and Nature of projects and contractual type. The aforementioned measuring constructs are not in contradiction with the findings of previous researchers [7, 25, 26, 27] that proclaimed factors of ignorance and poor illiteracy level of individuals, project types, and contract forms, client factors, socioeconomic, government, and societal factors as significant variables to be investigated for corruption menace in building construction industries

2.3Model and Hypotheses Development

Structural Equation Modelling (SEM) was adopted as an acceptable tool for both information systems and behaviors science literature [28], as it allows explicit modeling of error in measurement, it shows direct and indirect relationships among latent variables and indicators. SPSS 10.0 and LISREL 8.72 software were used to perform SEM statistical procedures with the hypothesized model tested.

With reference to previous finding on building construction and corruptions [7, 23,24, 25, 26, 27], this study employs the concepts to explore the militating factors against building design, and construction and to encompass the professionals involved in building industries, the associated building clients, the government as public building owners, and enforcement agencies for mischievous practices as major constructs responsible for the corruption

menace in Nigerian building construction industries. Thus, the following hypothesis holds:

H1: Societal factors positively influence corruption in Nigerian building construction industries

H2: Unethical professional practices positively influence corruption in Nigerian building construction industries.

H3: Government factors positively influence corruption in Nigerian building construction industries.

H4: Client ignorance and personal discretion positively influence corruption is the Nigerian building construction industries.

H5: The nature of building projects and contractual types positively influence corruption in Nigerian building construction industries.

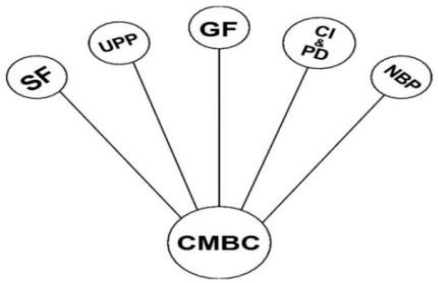

Figure 1. Proposed Confirmatory Analysis Model.

Table 2. Codes and constructs used in the model

S/n	Constructs	CODE
1	Societal Factors (greed, ignorance, illiterate level)	SF
2	Unethical Professional Practice	UPP
3	Government Factors (influence and bureaucracy)	GF
4	Client Influence and Personal Discretion (unprofessional directives)	CI&PD
5	Nature of Building Projects (Contract type)	NBP
6	Corruption Menace in Building Construction-industry	CMBC

3. Results and Findings

3.1 Demographics

Table 1: Demographics of respondents and data statistics

Demographic's	Level	Number of respondents	Chi-square value	P- Value
Gender	Male	82	0.418	0.495
	Female	38		
Age	18 – 30	22	2.641	0.621
	31 – 40	40		
	41 – 50	46		
	51 above	12		
Professional status / Designation	Architects	13	4.021	0.534
	Quantity surveyors	19		
	Civil Engineers	9		
	Services engineers	21		
	Government agencies in public building units	10		
	Building contractors	28		
	Other stakeholders in building construction industries (artisans, etc.)	20		

3.2Measurement Model Evaluation

The **r**esults of the measurement Model shown in Table 3. The measurement model depicts the construct measured and observed variable relationship. With the used of LISREL estimations and traditional alphas with the assessment of the model that includes investigation of coefficients reliability (Cronbach's Alpha), Average variance extracted (AVE) and composite reliability coefficients.

Table 3. Results of the measurement Model.

S/N	Constructs	Items	Loading	SMC
1	Societal factors (greed, ignorance, illiterate level	Poverty level	0.84	0.64
		Discriminations	0.80	0.61
		Disputes and crisis	0.77	0.54
		Greed	0.83	0.63
2	Societal factors (greed, ignorance, illiterate level	Quackery	0.85	0.65
		Lack of through supervision	0.86	0.66
		Poor contractual documents	0.83	0.63
		Lack of regular professional training and site meetings	0.80	0.61
3	Societal factors (greed, ignorance, illiterate level	Lack of appropriate legal punishment for corrupts culprits	0.84	0.64
		Low wage for workers and payment delay	0.85	0.65
		Undue political influence and prolong documents approving process	0.85	0.65
		Project inflation	0.84	0.64
4	Societal factors (greed, ignorance, illiterate level	Poor knowledge of legal punishment for corrupts culprits in construction industry	0.74	0.52
		Illiterate level	0.81	0.64
		Poor knowledge of building collapse effects	0.77	0.57
		Noncompliance with building professional specifications altitudes	0.84	0.64
5	Societal factors (greed, ignorance, illiterate level	Complexity of the building projects	0.75	0.51
		Nature, and changes in construction site and location	0.80	0.61
		Building contractual method applied	0.78	0.56
		Variations in building construction bill of quantities	0.83	0.63

Each of the hypothesized constructs was significant having $P<0.01$ in the analysis of the measurement model while the Square Multiple Correlation [SMC] reflected that the items used in the study met the recommended 0.40 as postulated by Taylor and Todd [29]. The Cronbach's Alpha Coefficient raged from 0.774 to 0.863. The internal consistency of the measurement model was carried out using composite reliability and the coefficient ranged from 0.794 to 0.872 (Table 4) with higher composite reliability of above 0.60 which indicatesa good model [30]. Thus, the average variance extracted from the constructs showed very satisfactory validity and reliability.

Table 4. Construct's reliability results.

S/n	Constructs	Cronbach's Alpha	Composite reliability	Average variance extracted
1	Societal factors (greed, ignorance, illiterate level)	0.841	0.845	0.680
2	Unethical professional practice	0.843	0.849	0.676
3	Government factors (influence and bureaucracy)	0.863	0.872	0.624
4	Client influence and personal discretions (unprofessional directives)	0.827	0.831	0.646
5	Nature of building projects (contract type)	0.774	0.794	0.588

3.3Structural Model Estimation

The structural model is analyzed to investigate the relationship among variables in the proposed model as the construct and the hypothesized relationship are tested. The result of structural modelling indicates that the chi-square of 602.09 ($p< 0.001$), chi-square/df of 3.510, GFI of 0.882, and Adjusted GFI of 0.094 as shown in Table 5. The p-value is considered due to its larger number of expanded as chi-square statistical analysis is very sensitive to the larger sample size by rejecting closely the fitting model [31].

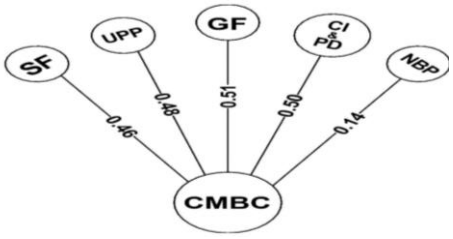

Figure 2. Confirmatory Analysis Model.

Table 5. Measures of Model fit and reported values for structural Model.

S/n	Fit Index	Recommended Value	Model Value	Model Fit
1	Chi-Square	P ≥ 0.05	601.50 (P=0.000)	Poor fit
2	Chi-square / degree of freedom	P ≤ 5	3.510 (DF=173)	Good fit
3	GFI (goodness of fit index)	P ≥ 0.9	0.882	Moderate fit
4	AGFI (adjusted goodness of fit index)	P ≥ 0.09	0.094	Good fit
5	RMSEA (root mean square error of approximation)	P ≤ 0.08	0.076	Good fit
6	NFI (normal fit index)	P ≥ 0.9	0.957	Good fit
7	NNFI (NON-normal fit index)	P ≥ 0.9	0.980	Good fit
	CFI (comparative normal fit index)	P ≥ 0.9	0.969	Good fit

3.4Interpretation of the Structural Model

Estimated standardized solution by LISREL, 8.72 Program used for the interpretation of the tested structural relation results. The coefficient path relationship is shown in Figure 2. As it indicates the substantial part of the variance in the variables explained in the model. Going by the model, four (4) of the specified paths have high statistically significant value for corruption menace in Nigeria's building construction industries, the fifth path exhibited influence on corruption but with lesser statistical significant. The path of the models reflected that;

H1: Societal factor positively influences on corruption in Nigeria's building construction industry as the path has a loading of 0.46.

H2: The unethical professional practice factor has a loading path of 0.48 indicating that it exhibited a positive influence on the corruption menace in Nigeria's building construction industry

H3: The government factor has a good positive influence on corruption in Nigeria, as it has 0.51 on the corruption menace. On the same model,

H4: The client influence and personal discretional factor has a loading path of 0.50 showing a high path that indicates a good positive influence on the corruption menace in the Nigerian building construction industry. However, the nature of the building projects and contractual mode displayed a non-strongly significant influence on the degree of corruption menace in the Nigerian building construction industry, as it exhibits a low loading path of 0.14.

Therefore, H5: The building projects and contractual mode have a lesser significant influence on the corruption menace in Nigerian building construction industries.

4.Conclusion and Recommendations

4.1 Conclusion

Considering the need for sustainable and successful building project execution in the phase of corruption in the Nigerian building construction industry, the need for an in-depth understanding of the interplay between building project execution and corruption becomes eminent. On this note, this study has done justice to the prevailing factors

that are highly responsible for the undue and sharp practice of corruption in the Nigerian building construction industry. It was established that government factors or influence on the building project execution process have high negative effects on building project success as they influence the corruption menace as it exhibits an indicator of 0.51. This can be associated with a lack of appropriate legal punishment against the corrupt culprits in the building industry, exhibiting an undue influence on the project executors, unnecessary delay in the wage payment of the professional fees and construction bill, and over-loading of project budgets. Likewise, the factors of unethical professional practices in most of the building execution encourage corruption. This finding shows that the engagement of non-professionals (quackery) is equally responsible for financial sharp practices in Nigerian building construction industries, as the quacks are not versed in the building delivery processes and they lack the consequences of engaging in corrupt culture in building construction. The quacks lack effective building planning, execution, and maintenance. Other factors of inadequate supervision and unstandardized building documents are also associated with the unethical professional practice effects on corruption in Nigerian building industries, as shown in the study. The client's unprofessional influence on the building execution process often enhances corruption, as the frequent changes to the building designs and execution process by the client's personal opinion, when enforced on the building professionals, pave easy ways for financial sharp practices (corruption) in the various building delivery stages. Some clients believed in changing the building concept, materials, and orientation in the hope of reducing the building cost without taking cognizance that the quacks in the construction site hide on the client's instructions to perpetuate price cuts at the detriment of the client and the good quality standard of the building. Societal factors of greed and poverty encourage a corruption tendency among the community's citizens, neighbors, and workforce on a given building project. However, the nature of the building project contractual method applied has less of an impact on the high corruption tendencies in the building construction industry. This can be explained to mean that the building contractual types will not highly trigger the building corruption degree when the government plays a decent role in building project stages and enforces necessary legal punishment on the corrupt culprits; when qualified professionals handle all the building project execution processes; when society has a basic orientation of the hazards and implications of corruption in building project execution; and when clients avoid unnecessary discretional input that can negatively affect the building concept, design, and material specifications after the building project construction contract closing time lag. It is significant to take good cognizance of the basic factors of corruption enhancement in building industries, such as governmental influence, unethical professional practice, societal problems, and undue client control over building project execution, to achieve a relatively lower corruption menace in the Nigerian building construction industry. The building contractual method should be applied as building projects demand effective execution.

4.2 Recommendations

Regarding the aforementioned findings, to achieve desirable zero corruption in Nigerian building construction industries, the following recommendations become crucial:

1) Qualified building professionals who were licensed to practice should always be permitted to handle building construction projects in Nigeria.
2) Necessary documents and building delivery guides, such as the National Building Code and the Public Procurement Act, should form part of the basic yardstick for professional practice engagement in Nigerian building project processes.
3) Periodic maintenance and evaluation of building project execution should be done at every stage of the building construction project process for effective auditing, acceptability, and record-keeping.
4) Regular awareness and training to educate building clients on the need to respect building documents, contractual agreements, contract terms, and the implication of consistent charges for building project concepts and design construction documents at the owner’s personal discretion without substantive reason for such from building professional views.
5) Enforcing the legal consequence or punishment on corruption culprits in the execution of building projects and educating societal awareness on the need not to engage in money-making syndrome in building projects but to embrace transparency and social support towards social, economic, and sustainable building projects.
6) Appointment or selection of the building professionals and contractors should be due-process-based and aligned, while contract types should be taken into proper consideration based on building nature, as contractual types have a casual relationship with the corruption menace in Nigerian building construction project delivery.

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