Client Financial Support for Mitigating Cost Factors Affecting Performance of Small Scale Contractors in Nigeria

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Abstract

The study assessed effects of client financial support for mitigating the effects of cost factors affecting the performance of Small Scale Contractors (SSC) in Nigeria. Exploratory and descriptive designs were adopted. A total of 550 questionnaires were administered to key construction industry stakeholders in northern Nigeria through stratified random sampling technique. The survey recorded 71.4% valid response rate. Descriptive and inferential statistics were used to analyse data obtained. Findings revealed that a small negative causal relationship exists between the effects of cost factors and the performance of SSC; and that clients' financial support through advance payment to SSC mitigates effect of construction costs on performance of SSC in Nigeria. The study recommends: construction stakeholders to effectively and efficiently manage cost factors that could impede SSC performance; clients to provide financial support to SSC; and, government to endorse policies that will encourage financial institutions to provide flexible and less interest loans, for improved SSC business performance and hence commensurate contribution to national economy.

Keywords: *Client financial support, Contract performance, Cost Factors, Small scale contractors*

Introduction

The construction industry produces about 75% of the nations fixed capital projects but, its performance within the economy is poor. Generally from 2007-2010, the construction industry has undergone dramatic and fundamental contraction (Ireland, 2011). This is attributed among other things to SSC poor performance; for example, Irish small scale construction firms lost about £12 billion to the industry in 2011. Similarly in United Kingdom, the construction industry experienced slight contraction in output with a figure of 0.1% from the month of August 2012 to the month of July 2013, while in Australia, the value of construction output fell from 48.2% to 2.6% in March 2014 (The Australian Performance Construction Index-PCI, 2014; United Kingdom Office of National Statistics, 2013).

In developing countries, where the SSC constitute over 90% of the construction markets, their performance is not better either; they are also accused of poor delivery of construction projects (Mohammed & Obeleagu-Nzelibe, 2013;). The performance of SSC is generally poor despite the fact that they serve as catalyst for employment generations, national growths, poverty alleviation and economic developments (Mohammed & Obeleagu-Nzelibe, 2013; Wang *et al.*, 2009).

According to Bekoe, Quartey and Dumolga (2013) SSC are accused of poor performance due to the effects of cost factors affecting their general performance. Love *et al.* (2010) described the persistent poor performance of SSC in the construction industry as a worrisome issue and emphasized that poor performance behaviour of SSC can be reduced through clients' financial supports. In the same vein, International Labour Organisations (ILO) (1999) described SSC business as one with limited capital investment who may need financial and managerial support to effectively run the business. Several studies advised that the provision of short term loan or advances to jump start projects are the supports needed by small scale businesses to enhance their performance (Abubakar, 2004; Aminu-Kano, 2004; Ndah, 2004; Onwusonye 2004; Adams, 1997). Aruwa (2005) stated that SSC in Nigeria are defined by different organizations on the basis of either the size of the firms, amount of investment or annual turnover and number of employees. This study adopted the definition of Federal Ministry of Industry in Nigeria, which defined SSC as enterprise that has an asset of not more than 50 million (USD 250,000.00) and with less than 100 employees.

Previous studies proffered ways of improving performance of contractors in the construction industry. Ling, Yean and Peh (2005) established set of key performance indicators (KPIs) similar to those used in manufacturing and service industries for improving performance of contractors in Singapore. One of the limitations of their model is its conceptual nature, and as such does not focus on the main causes of SSC poor performance. Most of the KPIs focused on the areas other than the major cost factors that affect performance of SSC business. The key performance indicators (KPIs) were

benchmarked to identify their position on the factors that affect contractor performance such as productivity and quality of goods and services.

The aims of the KPIs are to reduce wastage, rework, enhance productivity, identify potential areas of growth and weaknesses and improve on general contractor performance (Wong & Lam, 2008; Brah *et al.*, 2000). Benchmarking of KPIs for improving performance of contractors is generally confronted with short comings related to the difficulty in developing a realistic and agreed set of indicators because of the complex nature of the construction industry. Contractors would be reluctant to give out information that directly indicate their area of weakness, in addition KPIs do not guarantee true way of minimizing the effects of cost factors that affect performance of SSC. Therefore to achieve an improve performance of SSC there is a need for a different but empirical approach to studying the effects of cost factors that affect performance of SSC (Josephson & Chao, 2014; Ling *et al.*, 2005). In light of the above this study outlined the following objectives:

i. To assess the causal relationship between cost factors and performance of SSC in Nigeria.
ii. To assess the mediation effect of client financial support on the cost factors that affect performance of SSC in Nigeria.

In order to test the relationship of the variables in the research objectives, the following non directional hypotheses were postulated

:I. H_o:There is no causal relationship between cost factors and performance of SSC in Nigeria.

II H_o:Clients' financial support does not mediate the effects of cost factors that affect performance of SSC in Nigeria.

Literature Review

The study had three constructs: cost factors, client financial support (advance payment), and performance of SSC. Cost factors have three dimensions: cash flow problems, effects of fraudulent practices, and effect of the nature of construction environments. These dimensions measured the effects of cost factors. While client financial support also have three dimensions: payment timing, amount of payment in percentage and method of payment recovery. These dimensions measured the impacts of the clients' financial supports towards minimizing the effects of cost factors and hence improve performance of the contractors. Performance of SSC have three dimensions: financial performance practice, technical performance practice and management performance practice. These dimensions measured the performance level of the contractors business.

Factors Affecting Cost of Construction Projects (Cost Factors)

Cost factors are the main factors affecting performance of SSC in developing countries, these factors includes: cash flow problems, effects of fraudulent practices and the effects of the nature of construction environments (Gambo & Said, 2014; Ezeh, 2013; LGMEC, 2009).

Cash Flow Problems

Cash flow problem is a situation where contractors do not have enough cash to pay for the running of their business. Cash flow is described in construction projects in two ways. Firstly as the net receipt or net disbursement resulting from receipts; and disbursements occurring in the same period (Odeyinka, Lowe & Kaka, 2008).

Cash flow=Receipts-Disbursements

The equation above indicated that a positive cash flow shows net receipts in a particular period of time, while a negative cash flow shows a net disbursement in that period. Secondly, cash flow is described here as the actual movement or transfer of cash (money) into or out of a firm (Odeyinka, Lowe & Kaka, 2008). Therefore, based on this definition money coming to the firm is termed as cash flow positive because the money is credited to the business account while money going out from the firm is termed cash flow negative because the money is debited from the business account, so the difference between the two is termed net cash flow.

Net cash flow=Positive Cash flow (cash in)-Negative Cash flow (cash out)

Based on the above definitions positive cash flow is derived from the monies or payment receipts by a business during a period of time, while negative cash flow is the expenses incurred in a contract for the procurements of materials, facilities, equipment, services, wages and salaries (Odeyinka *et al.*, 2008). Memon *et al.* (2011) discovered that in Malaysia, cash flow problems are the main cause of contractors' financial difficulties which subsequently affect both technical and management performance practices of the business. The problems associated with cash flow are: delay in settling of claims and agreeing of variations/day works, under valuations of performed works, clients' insolvency and delays in payments of approved valued works etc. (Odeyinka *et al.*, 2008).

Fraudulent Practices

Iyer and Jha (2005) identified fraudulent practices in the construction industry as one of the main factors affecting performance practices of SSC in India. Elinwa and Buba (2011) reported that fraudulent practices and kickbacks are the most severe factors causing poor performance of contractors in Nigeria. Rosenbaum (1997) earlier acknowledged that all government-funded projects in developing countries are mostly political in nature; this invariably leads to poor cash flow and fraudulent practice. Fraudulent practice is seen as the intent to deceive through false representation of a matter or a fact, whether by word or by conduct, or by concealment of information, which should have been disclosed in order not to cause an entity relying upon that false information (Mathew *et al.*, 2013). Fraudulent practices are the most severe factors that affect performance practices of contractors. The problems associated with fraudulent practices in construction industry are: actions not taken for non-compliance with the terms and conditions of contract, double payment for same item, and substitution of specified item with used or inferior ones, payments made on cost not incurred,

falsification of contract documents and given gratitude to induce a party in the contract (Mathew *et al.*, 2013).

Nature of Construction Environments

Nature of the construction environment affects the technical performance of projects. This has become a major issue to stakeholders in the construction industry (Shen & Tam, 2002). The problems associated with the nature of construction environments are: harsh construction sites, civil commotion/ disturbances, topography of the construction/ working site, site's constraints and storage limitations, availability and supply of labour to the site, hostile political and economic environments etc. (Yassamis, *et al.*, 2002). The problem of water pollution is also seen as an important factor affecting performance of contractors (Shen & Tam, 2002). The effects of the nature of construction/working environments have significant impact on both financial, technical and management practices of contractors (OSPAR, 2008).

The report also indicated that the effects have cumulative impact on the quality of products and further divided it into permanent and temporary effects. The permanent effects comprised of meteorological trends like storms, geological process like soil and strata characteristics and long term environmental trend like climate changes. The temporary effects are comprised of chemical, biological and ecological effects as well as social and political conditions such as land use acts, development trends, regulations, social trends and public safety (OSPAR, 2008). The nature of construction/working environments affect not only the projects themselves but also the project sites, materials and equipment used to build the projects such as concrete, timber, clay, sand, gravel, steel etc.

Performance of SSC

Financial Performance of SSC

SSC financial problems are the financial difficulties they face due to insufficient funds to carryout construction activities which includes payments of materials, purchase of construction plant and equipment, payment of labour salaries and wages, etc. (Ali *et al.*, 2012). The inability of the project clients to pay contractors on time contribute to business low fund, low profit margins, insufficient capital base and excessive debt that leads to contractors financial difficulties (Ali *et al.*, 2012; Jiang *et al.*, 2010; Liu, 2010).

Delays in payments of approved valued works have negative effects on the financial performance of SSC, which could result in project abandonments and substituting of specified materials with inferior ones (Sambasivan & Soon 2007). Insufficient profit is one of the most severe factors contributing to the financial difficulties of contractors; insufficient profit could be difficult to control; it could be due to bad economic conditions of developing countries (Ali *et al.*, 2012). SSC have very low financial reserves and used the profit from ongoing projects to finance future projects; hence a loss in one project ultimately leads to cash flow problems and liquidations (Frimpong *et al.*, 2003,). In addition, delays in contractor's payment caused by the bureaucratic process of effecting payments in the public sector create financial problems to

the business, and its consequences if not well managed, could be very detrimental to contractors' who are operating in locations remote from the project clients (Samaras *et al.*, 2014; Wasi *et al.*, 2001).

Technical Performance of SSC

Technical performance is the total features required by a project or services to satisfy a given need; fitness for purpose (Hashem & Guggemos, 2015). Technical performance is the guarantee of the projects that convinced the clients or the end-users that specifications were adhered to during construction. The meeting of specification is suggested by Hashem and Guggemos (2015) as one way to achieve contractor's technical performance, and defined specification as workmanship guidelines provided to contractors by clients at the commencement of project execution. The aim of technical specifications is to ensure that the technical requirements are achieved. Actually, technical specification is provided to ensure that projects are built in good standard and in proper procedure. Freeman and Beale (1992) extended the definition of technical performance to scope and quality of products. Hence meeting of technical specifications are grouped under the "quality" category.

One most important consideration to minimize poor technical performance of any project is by improving the standard of quality specification. The problems of SSC in developing countries is that their businesses do not have the requisite skills to interpret technical specifications adequately in addition to not having efficient facilities and equipment required for the construction works; most of construction equipment are rented when required and usually the equipment are either obsolete, or scarce particularly during the peak periods of construction activities (Sambasivan & Soon, 2007).

The main problems affecting technical performance of SSC are discovered to be mistakes in setting out of buildings associated with inadequate experience of contractors, as well as frequent failure of construction equipment (Sambasivan & Soon, 2007). In addition, the skill and technical competence of contractor workforce, contractor's ability to identify and mitigate technical and schedule risks, and contractor's compliance with technical requirements are also considered as major problems affecting technical performance of projects (Jafari, 2013; Frimpong *et al.*, 2003). To Luu et al. (2008) the major problems of SSC technical performance are the inability of the contractors to recruit and retain qualified technical staff and problems of interpretation of working drawings. This view was supported by Doloi *et al.* (2011), who added that the inability of contractors' to proactively respond to changes in technical direction influenced their technical performance.

Management Performance of SSC

Management performance is the driving factor for the sustainable development of any business. The efficient and effective management performance of contractors is very important in ensuring that projects are completed successfully. Kadir *et al.* (2005) acknowledged that poor site management emanating from poor planning and

coordination is a problem associated with management performance of SSC in developing countries; this eventually contribute to delays and cost overruns. Poor management performance is one of the main factors that crippled the development of small scale construction business in developing countries. Studies in the past revealed that the problems associated with the contractor's inability to effectively coordinate, integrate and manage his work, as well as the services of subcontractors emanates from poor management performance of SSC.

Moreover, the inefficiency in interfacing and communicating with the government's /client's staff or representative, and contractor's ineffectiveness in dealing with emergency situations on site are also causes of contractors' poor management performance (Assaf & Al-Hejji, 2006; Frimpong *et al.*, 2003).

Faridiand El-Sayegh (2006) argued that contractor's poor demonstration of strong commitment to integrity and business ethics, contractor's reasonableness, cooperation and commitment to client satisfaction, poor level of decentralization of contractor's project organization are the major problems of SSC poor management performance. Doloi *et al.* (2011) supported this argument and added that trustworthiness of contractor, frequency of site meetings and review of previous project programmes could improve management performance of SSC.

Client Financial Support

Payment in a construction contract is the act by which a project owner makes finance available and directly to a contractor or subcontractor for either executed or non-executed service (Ekpo, 2004). Payments when made timely enable a contractor to maintain reasonable cash flow plan for financing the project but if made late, it tend to disrupt the sequence of project execution (Aminu-Kano, 2004; Ndah, 2004).

Project client financial support is a system of payment that is made ahead of its normal schedule; it is the short term interest free loan given to a contractor ahead of actual performance, this provides adequate finance for contractor to venture into purchase of construction equipment and employment of staff (Ofoegbu, 2011). Client financial support mitigates the effects of cost factors affecting performance of SSC in three ways based on: payment timing, amount paid (%) and method of recovery (Talagala, 1997).

Payment Timing

Stone (2002) advocated that client financial support should be given to a contractor based on request. A contractor therefore has to apply for advance payment for him to be considered (Abubakar, 2004). To Aminu-Kano (2004) advance financial support should be given to a contractor on request or after achieving certain milestone activity. According to Hussin and Omran (2009) advance payments should be in stages, and should be sufficient to cover financial requirement of a contractor (Ndah, 2004). Advancing payments, as well as effecting interim payments for contractors valued works when it is due, will assist in improving performance of SSC (Bala, *et al.*, 2009; Onwusonye, 2004).

Amount of Client Financial support Payment as a Percentage of Contract Sum

Disbursement of advances per contract varies from 12%-49% depending on the value of the contract and interest in it. Aminu-Kano (2004) asserted that there is no established rule on the amount of advance payment but it remains at the discretion and mutual understanding between client and contractor. Previous studies have suggested 5%, 10% and 5% - 20% advance payments (Onwusonye, 2004).

Method of Payment Recovery

According to Onwusonye (2004) the recover method of client advance support rested on the expressed provisions of the terms of contract such as deductions during instalment or interim payments. Spreading of recover funds from first to the third quarter of the project period improved performance of contractors by allowing adequate funds into the project (Abubakar, 2004). In slightly different approach Ndah (2004) suggested that recover funds should be spread all through the contractor's contract period in a project.

Research Method

This study adopted quantitative design through exploratory (literature review) and descriptive design (questionnaire survey) respectively. Literature review was used to elicit extant literature on the study variables and was used to develop this study questionnaire. After pretesting the questionnaire, 550 were administered to contractors, project management consulting firms and project clients in northern Nigeria through stratified proportional random sampling technique. The survey records 71.4% (357) valid response rate (see Table1); this was considered better than 52% and 54% response rates recorded by Odeyinka, *et al.* (2008) and Yassamis et al. (2002) respectively. The variables were operationalized into research constructs and reflected in the questionnaire. The research constructs were measured based on a five-point Likert Scale.

The interpretation of the Likert Scale used to measure the performance of SSC which is the dependent construct is: 1- very low performance, 2-low performance, 3-average performance, 4-high performance, and 5-Very high performance. Effect of cost factors as an independent construct was assessed using Likert Scales: 1-not severe, 2-least severe, 3-moderately severe, 4-severe, and 5-extremely severe. While mediation effect to mitigate clients' financial support used Likert Scale: 1-very low impacts, 2-low impacts, 3-average impacts, 4-high impacts, and 5-very high impacts.

The study area, Northern Nigeria comprises 3 of the 6 geo-political zones of Nigeria: North Central (NC), North East (NE), and North West (NW). These zones constitute slightly more than half (19) of Nigeria's 36 states including Abuja, the administrative headquarter of the country. The zones occupy almost 80% of Nigeria's land mass (744,249.08 Km2) and have a population of about 95 million people (National Bureau of Statistics-NBS 2010). This study used IBM SPSS version 21 and SPSS macro developed by Hayes (2008) for mediation analysis to conduct descriptive and inferential statistics on the data obtained from

the questionnaire survey. The data were bootstrapped to 5000 times from the original samples with replacement. Bootstrapping approach generated an empirical representation of the sampling distribution of the effect by treating the original sample size as a representation of the population in the miniature; this is repeatedly resampled during analysis as a means of copying the original sampling process (Hayes, 2009).

Table 1: Questionnaire Distribution

Zones	States	Respondents	No. distributed	No. returned	No.missing	No. used for analysis	Rate of return(%)	Response rate (%)
		Clients	31	23	08	21	74	68
	Bauchi	Contractors	82	59	23	54	72	66
NE	Gombe	Consultant	70	51	19	42	73	60
		Clients	31	17	14	17	55	55
	Plateau	Contractors	82	65	17	62	79	76
NC	Niger	Consultant	70	49	21	46	70	66
		Clients	31	24	07	21	77	68
	Kano	Contractors	83	47	36	46	57	55
NW	Kaduna	Consultant	70	52	18	48	74	69
Total	-	-	550	387	163	357	70	65

Zone = political units of Nigeria comprising 5-7 states, State= political unit of governance headed by a governor

Cronbach's Alpha

Table 2 presents the internal consistency test conducted on the survey instrument using Cronbach's Alpha Coefficients (CA).Financial performance (finper) practice of contractors had a CA of 0.709. The technical performance (tecper) had a CA of 0.761, then cash flow problems (casflo) had a CA of 0.930, and effects of fraudulent practices (frapra) had a CA of 0.915. The effects of the nature of construction environments had a CA of 0.865, payment timing (timpay) had a CA of 0.814, and amount of payment in percentage (perpay) had a CA0.837.

All the CAs' were regarded to be good because they are above the acceptable limit/benchmark of 0.70 (Sekaran&Bougie, 2011; Field, 2009; Pallant 2009).

Though, method of payment recovery (metrec) had a CA of 0.675, which is less than 0.7 limits is also regarded as sufficient and acceptable according to Lewis, Templeton and Byrd (2005). This indicated that the survey instrument is consistent and reliable.

Construct Validity

Table 2 presents the construct validity for the research items using factor analysis. The analysis was to test and identify problems associated with multi-collinearity and singularity in the survey instruments on the three major constructs.

The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy in respect to financial performance practice (KMO) was 0.921,the

total variance explained was 58.675%, the determinant of the correlation matrix (R-matrix) was 0.06, and the chi-square X^2 (357) =1782.196 with p=0.000 significant at p=0.05 level of significance.

The technical performance practice had a KMO value of 0.871, the total variance explained was 64.265%, and the determinant of the R-matrix was 0.01, X^2 (357) = 2354. 766 with p=0.000 significant at p=0.05 level of significance. The management performance practice had a KMO value of 0.856, the total variance explained was 71.529%, then the determinant of R-matrix was 0.03 and X^2 (357) = 2075.105 and p=0.000 significant at p=0.05 level of significance.

The cash flow problems had a KMO value of 0.912, the total variance explained was 65.903%, then the determinant of R-matrix was 0.01and X^2 (357) = 2487.882 with p=0.000 significant at p=0.05 level of significance. The effect of fraudulent practices had a KMO value of 0.873, the total variance explained was 64.083%, then the determinant of R-matrix was 0.04 and X^2 (357) = 1921.244 with p=0.000 significant at p=0.05 level of significance.

The effect of nature of construction environments had a KMO value of 0.893, the total variance explained was 56.383%, then the determinant of R-matrix was 0.02 and X^2 (357) = 2128.405 with p=0.000 significant at p=0.05 level of significance. The client financial support payment timing had a KMO value of 0.928, the total variance explained was 78.786%, then the determinant of R-matrix was 0.004 and X^2 (357) = 1662.103 with p=0.000 significant at p=0.05 level of significance.

The amount of support as a percentage of contract sum had a KMO value of 0.898, the total variance explained was 80.747%, then the determinant of R-matrix was 0.004 and X^2 (357) = 1662.103 with p=0.000 significant at p=0.05 level of significance.

The method of support recovery had a KMO value of 0.872, the total variance explained was 88.346%, then the determinant of R-matrix was 0.013 and X^2 (357) = 1388.886 with p=0.000 significant at p=0.05 level of significance. This showed that all the nine dimensions had the determinants of R-matrix to be above 0.0001 which indicated that there was no multi-collinearity or singularity among the dimensions items in the research instruments. Therefore, no single item was extracted from the research instruments due to either multi-collinearity or singularity (Field, 2009).

Table 2: Constructs Validity

Construct	Cronbach's Alpha	Total Variance Explained	R-Matrix	KMO	Chi-Square	P-Value
Financial Performance	0.709	58.675%	0.06	0.920	1782.196	0.000
Technical Performance	0.844	64.265%	0.01	0.871	2354.766	0.000
Management Performance	0.828	71.529%	0.03	0.856	2075.105	0.000
Cash flow Problem	0.843	65.903%	0.01	0.912	2487.882	0.000
Fraudulent Practice	0.957	64.083%	0.04	0.873	1921.244	0.000
Nature of Construction Environment	0.865	56.382%	0.02	0.893	2128.405	0.000
Payment Timing	0.814	78.786%	0.004	0.928	1662.103	0.000
Amount of Support Payment	0.837	80.747%	0.04	0.898	1662.103	0.000
Method of Payment Recovery	0.675	88.346%	0.013	0.872	1388.886	0.000

R-Matrix = correlation Matrix, KMO = Keiser-Meyer-Olkin measure of sampling adequacy

Content Validity

Content validity is used to assess how well an idea or a concept is represented by the items in a questionnaire (Sekaran & Bougie, 2011). This study engaged experts in construction and project management, and in the academia to assess the suitability of the items in the questionnaire in satisfying content validity. The experts agreed with the items in the questionnaire, validated and verified a total of 87 items (see Table 3).IBM SPSS version 21 was used to generate the mean score value of all the items and used for the analysis.

Table 3: Research constructs, dimensions and number of items

Construct	Dimension	Number of Items	Total Number of Items
Contractor Performance (conper)	Financial performance practice (finper)	10	
	Technical performance practice (tecper)	11	
	Management performance practice (manper)	9	29
Cost Factors	Cash flow problems (casflo)	10	
	Effects of fraudulent practices (frapra)	15	
	Effects of the nature of construction environment (envfac)	10	35
Client support with advance payment (advpay)	Payment time (timpay)	8	
	Amount of payment (%) (perpay)	8	
	Metthod of recovery (metrec)	7	23

Assessing Mediation Effects of Client Financial Support

An assessment of the mediation effects of client support to mitigates the effects of cost factors that affect performance of SSC is achieved by two test; the indirect and total effects of the mediator variable i.e. client financial support. The following methods of mediation analysis were employed to assess mediation effects of client financial support:

i. Causal steps as presented by Baron and Kenny (1986)
ii. Percentile and bias-corrected bootstrap CIs presented by Hayes and Scharkow (2013)

Baron and Kenny (1986) suggested the following causal steps to test the mediation effects of mediator variable:

i. The direct effects between independent variable (cosfac) and dependent variable (conper) should be significant.
ii. The effect of independent variable (cosfac) on the mediator (advpay) and the effects of the mediator (advpay) on dependent variable (conper) must be significant; and
iii. The magnitude of the direct effect between independent variable (cosfac) and dependent variable (conper) after including mediator should not be significant or have to be reduced.

Hayes & Scharkow (2013) recommended bias-corrected bootstrap CIs as the most trustworthy test if power is of utmost concern. The percentile bootstrap CI is a good compromise test. The test has the followings procedures:

i. Use the specific model in question including both the direct and indirect paths;
ii. Perform N number of bootstrap resampling.
iii. Explicitly calculate the product of the indirect paths form the direct path under assessment (a*b);
iv. Estimates the significance using percentile bootstrap CIs (where z.975) is equal to the constant 1.96).

$$\left(\hat{a}^* \hat{b} \right) \pm S \hat{a} \hat{b} Z.975$$

Results

The study analyses are presented in three parts. Part one presented causal relationship between cost factors and performance of SSC. Part two presented the test of mediation effects of client financial support based on Baron and Kenny Approach. Part three presented mediation test based on percentile bias-corrected bootstrap CIs approach. Subsequently the study results obtained from the data analysis were discussed consecutively.

Data Analysis

Causal Relationship between Cost Factors and Performance of SSC

Table 4 presents the correlation coefficients between cost factors (cosfac)and the performance of SSC (conper). The Pearson Correlation (R) is -0.14, with p= 0.00 significant at p = 0.05 level of significance. This indicated that there was a small negative

causal relationship between cost factors and performance of SSC. The degree of the correlation coefficient therefore, led to the rejection of null hypothesis (H_1); that there is no significant causal relationship between the effects of cost factors and the performance of SSC in Nigeria.

Table 4: Spearman's Rank Correlations Coefficients between Cost Factors & the Performance of SSLGC

S/N			Cosfac	Casflo	Frapra	Envac
1		Conper	-0.137**	-0.095	0.101	0.169**
2		Finper	0.803**	-0.150**	-0.119*	-0.182**
3		Tecper	0.810**	-0.069	-0.060	-0.140**
4	Spearman's rho	Manper	0.563**	-0.013	-0.066	-0.043

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Mediation Effects of Clients Financial

Support: Baron and Kenny Approach

Table 5 presents the analysis results for the mediation effects of client financial support. The sample was bootsrapped to 5000 times with replacement and the results shows that value of the beta coefficient between cosfac and advpay was β= – 0.17with p= 0.00significant at p = 0.00level of significance. The direct effect of advpay to conper had a value of beta coefficient of β=0.42with p= 0.00 significant at p = 0.00 level of significance. The total effect of cosfac on conper had a beta coefficient value of β=– 0.14with p= 0.00significant at p = 0.00 level of significance. The direct effect of cosfac on conper when controlled by advpay had a beta coefficient value of β=– 0.07 with p= 0.12not significant at p= 0.05 level of significance. This indicated that the four conditions/criteria for mediation to occur were met and therefore, client financial support (advpay) is a mediator between the effects of cost factors and the performance of SSC based on Baron and Kenny (1982) approach. Hence the mediation effects led to the rejection of null of hypothesis (H2): that client financial support does not significantly mediates the relationship between effects of cost factors that affect performance of SSC.

Table 5: Coefficients of the Mediation Model of Overall Performance of SSLGCs by using Bootstrapping

	Coeff.	*Se*	*T*	*p*
IV to Mediators (a-path)				
Advpay	-.1686	.0490	-3.4443	.0006
Directs Effects of Mediators on DV(b-paths)				
Advpay	.4175	.0467	8.9435	.0000
Total Effects of IV and DV (c-path)				
Cosfac	-.1390	.0476	-2.9204	.0037
Directs Effects of IV on DV (c'-path)				
Cosfac	-.0686	.0438	-1.5681	.1177

Dependent, Independent, and Proposed Mediator Factors:
DV = Conper, IV = Cosfac, Meds = Advpay, Sample size =357, Resampling = 5000

Table 6 presents the analysis result for summary of cosper model. The coefficient of determination (R^2) = *0.20* at p= *0.00* this indicated that there was *20.34%* variance explained by the conper in the model.

Table 6: Model Summary for the Performance of SSC

R^2	$AdjR^2$	F	df 1	df 2	P
.2034	.1989	45.2061	2.0000	354.0000	.0000

Table 7.0 presents the test of significance for the normal theory of indirect effect that a-path multiplied by b-path, the indirect effect was – *0.07* at *p= 0.00* level of significance. This indicated a small negative indirect effect i.e. a*bpaths (Cohen, 1988).

Table 7: Normal Theory Tests for Indirect Effects of Cost Factors on Performance of SSLGCs through Client Financial Support (ab paths)

	Effect	*Se*	*Z*	*P*
Total	-.0704	.0219	-3.2192	.0013
Advpay	-.0704	.0219	-3.2192	.0013

Mediation Effects of Client Financial Support Based on Percentile and Bias-Corrected Bootstrap CIs

Table 8 shows the bootstrapped results of the indirect effects; the output provided the bootstrapped confidence interval at 95% with lower and upper limits interval ranges. The range was from – 0.1209 to – 0.0296, the estimated effect was – 0.0702. This shows that the true indirect effect was not zero (0) and zero (0) does not occur between the lower and upper limits at 95% confidence level. Therefore the indirect effect was significant according to Hayes (2009) andthat of Hayes and Scharkow(2013). This leads to the rejection of null hypotheses (H_{o2}): that client financial support does not mediates the relationship between the effects of cost factors that affect performance of SSC.

Table 8 Percentile and bias-corrected bootstrap results for indirect effects of IV on DV through proposed mediator (a*b Paths)

	Data	*Boot*	*Bias*	*SE*	*CI (LL) 95%*	*CI (UL)95%*
TOTAL	-.0704	-.0702	.0002	.0233	-.1209	-.0296

Discussion

The study indicated that a significantly small negative causal relationship exist between cost factors and performance of SSC in Nigeria. This result confirmed assertions that usually in construction works there are delays of payments to contractors resulting in adverse effects on the contractors' cash flows as well as on the operations of the contractors (Inuwa, *et al*., 2014; Adams, 1997; Ofori, 1991). However, this result differs from other studies because it empirically studied the causal relationship that exist between SSC cost factors and their performance in northern Nigeria. Moreover, this study revealed that clients' financial support can be used as a mediator to mitigate the effects of cost factors that affect performance of SSC in Nigeria. This finding confirmed previous studies by Debrah *et al*. (2015), and Eyiah and cooks (2003) which revealed that clients' financial support is a good incentives that can enhanced SSC development. This makes the SSC obtained interest free project funding at the initial stage of a project, that will enable them meet their financial obligation. The mode of paying the loan is less stressful; the contractor is expected to reimburse the fund to the client through the

value of work executed. In contrast to other studies, this research empirically assessed how clients' financial support could be used as a mediation to mitigate against cost factors affecting SSC performance in northern Nigeria.

Conclusions and Recommendations

This study was informed by the persistent poor project performance of SSC in Nigeria; in this light the study assessed the mediation effects of client financial support in mitigating the effects of cost factors that affect performance of SSC in northern Nigeria. Thus, the study assessed the causal relationship between cost factors and performance of SSC in Nigeria; as well as, the mediation effect of client financial support on the cost factors that affect performance of SSC in Nigeria.

Two null hypotheses successively mirroring the study objectives were used to test the relationship of the variables: there is no causal relationship between cost factors and performance of SSC in Nigeria; and Clients' financial support does not mediates the effects of cost factors that affect performance of SSC in Nigeria. Both hypotheses were rejected and their alternatives were accepted. The study used quantitative design through exploratory and descriptive design.

Literature review was used to identify the study constructs. These then formed the basis for designing the study questionnaire. Questionnaire was pretested and administered to contractors, project management consulting firms and project clients through a stratified random sampling. Descriptive and inferential statistics were used to analyse data obtained from the survey.

The study findings revealed that: a small causal relationship exist between cost factors and performance of SSC in Nigeria, and that the mediation effects of client financial support can be used to mitigate the effect of cost factors that affect performance of SSC in Nigeria.

By implication cost factors are important in enhancing the performance of SSC in Nigeria. And without appropriate consideration, the factors might mar the performance SSC in Nigeria. Where cost factors are foreseen to affect performance of SSC, client should provide financial support in order to curtail their effects from impeding performance. Hence providing contractors with an interest free project funding can go a long way in facilitating SCC performance in Nigeria.

In view of the above the study recommend that: consulting firms, project managers, SSC, and public and private clients should ensure that cost factors that can impede SSC performance are jointly managed effectively and efficiently; clients especially public clients in developing countries like Nigeria should provide reasonable interest free financial support to SSC, as well as put in place a policy which will motivate financial institutions in disbursing flexible and less interest loans to support SSC businesses in contributing meaningfully to the Nigerian economy.

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