

IMPACT OF PAYMENT PROBLEMS ON THE PERFORMANCE OF MICRO, SMALL AND MEDIUM SIZE CONSTRUCTION CONTRACTORS

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ABSTRACT

Purpose: Prompt payment has serious implication for the success of construction contracts, and this is particularly so where smaller construction contractors are involved since they rely heavily on cash flow to sustain their business operations. Despite the existence of contractual provisions and legislations, payment problems are still endemic in the construction industry. The study was therefore undertaken to investigate the causes of payment problems, and their impact on the contractual and business performance of micro, small and medium size construction contractors.

Design/methodology/approach: Sixty-two (62) construction contractors in Akwa Ibom State in the micro, small and medium size category were surveyed using a well-structured questionnaire.

Findings: The result reveals that the practice of pay-when-paid, delay in certification of interim payment, involvement of too many parties in the process of honouring certificate and failure to agree on valuation of work done rank as important factors responsible for payment problems. In addition, increase in the construction costs, decrease in contractors' profitability and delay in project completion time rank as the major effect of payment problems. The study also concludes that there is no difference in the perception of micro, small and medium-sized firms on the impact of payment problems.

Originality/value: In spite of the importance of smaller contractors in the construction economy of Nigeria, studies on payment problems affecting this financially weak and vulnerable segment of the construction sector are scarce. Investigation of the important factors responsible for payment problems would provide insight to construction industry stakeholders in devising mitigating measures. Overall, this will improve the efficiency, sustainability and viability of the construction sector.

Keywords: Construction contractors; contingent payment; payment problems; performance; profitability

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1. INTRODUCTION

Payment is the monetary consideration given to a contractor before work is executed or for work successfully completed. Generally, construction contractors require regular or periodic injections of funds into projects to enable them proceed diligently with their work (Judi & Rashid, 2010). Therefore, payment is considered as the lifeblood of construction as a well organised and timely payment arrangement has considerable implications on the success of construction projects. The importance of payment is further amplified by the fact that construction projects require relatively long durations to complete, and involve the expenditure of a large amount of money (Amoako, 2011; Judi & Rashid, 2010; Munaaim, Danuri & Abdul-Rahman, 2007; Supardi, Adnan & Mohammed, 2011). Payment problem is described as a complex and controversial issue in construction (APCC, 1996; Ramachandra & Rotimi, 2011). It often comes in the form of delayed payment, non-payment or underpayment of the amount certified (Ramachandra & Rotimi, 2015). Payment problems result from the failure or inability of client to pay the main contractor within the period of honouring certificate as provided for in the contract, and also refers to failure of main contractor to pay subcontractors and materials suppliers as at when due (Harris & McCaffer, 2001). It has attracted wide concern in the construction industry for many years, both in developed and developing countries, and is found in publicly-funded as well as privately-funded construction projects (Hou, Liu & Chen, 2011; Munaaim *et al*, 2007).

Payment problems are of particular concern to smaller contractors as they are often poorly capitalised and rely heavily on cash flow to sustain their business operations (Agumba & Fester, 2011; Thwala & Mvubu, 2009). Smaller construction firms comprise a significant component of the construction economy in developing countries and contribute to employment creation. A 2010 report indicates that 10.76% of the total construction industry contribution to the GDP in Nigeria is attributable to the micro, small and medium sized construction firms (Asuquo, Ogbu & Akinsiku, 2014). Smaller firms form a good sub-contractor resource base which provides invaluable services to large contractors. They can also perform small projects at more competitive prices at remote locations that might be unattractive to big organisations or too costly when undertaken by large construction firms (Agumba & Fester, 2011; Thwala & Mvubu, 2009). However, smaller contractors do not have the capacity to complete construction works before they get paid especially if the contract involves a substantial amount of money. They need some form of regular or periodic financial injection in order to continue with the work in a diligent manner (Cheng, Soo, Kumaraswamy & Jin, 2009; Judi & Rashid, 2010).

Multi-chain subcontracting is becoming a global phenomenon in construction contracting. The client enters into one contract only with the main contractor but the whole or a substantial part of the actual work is usually performed by smaller construction contractors who may further delegate specific tasks to other subcontractors and material suppliers. On very large and complex construction works, the supply chain may extend further (New Zealand Law Commission [NZLC], 1999; Prism Economics and Analysis, 2013). The implication is that payment default from client will have a cascading effect on the entire construction supply chain with the worst hit being smaller construction firms lower down in the chain (Abdul-Rahman, *et al*, 2011; Amoako, 2011; Prism Economics and Analysis, 2013).

It is interesting to also note that most, if not all, contract conditions for building and civil engineering works have provisions which place obligations on clients and promoters of construction projects to effect payment to contractors, including the manner and periods

of such payment. Despite the existence of contractual obligations, the construction industry has been unable to guarantee payments between various parties; it has been unable to consistently ensure that supply chain parties are paid in full and on time for the due performance of work (Australian Procurement and Construction Council [APCC], 1996; Ugochukwu & Onyekwena, 2014). More particularly, it is observed that although smaller contractors provide a substantial proportion of works associated with projects in the construction industry, they have not been sufficiently secured with regards to payments for services rendered and materials supplied (National Public Work Council [NPWC], 1996). It suggests that current remedies available in contract conditions are not adequate in resolving payment problems (Munaaaim *et al*, 2007). There is therefore a need to explore other means of resolving this endemic and seemingly perennial problem in construction.

Security of payment is fundamental to developing a healthy, sustainable, efficient and competitive construction industry (Cheng *et al*, 2009). Construction industry practitioners have observed that despite the massive potentials and positive outlook for the Nigerian construction industry, its viability and anticipated growth is being seriously threatened by heavy contract debts due to non-payment (Oladimeji & Ojo, 2012; Uroko, 2012; Olusegun & Michael, 2011). It is envisaged that efforts to examine the causes of payment problems would guide the construction industry in devising mitigating measures as well as improve the efficiency of the construction sector. It is also instructive to highlight the impact of payment problems on the performance of smaller construction firms which constitute an economically significant but extremely vulnerable segment of the construction sector.

1.1 Objectives of the Study

To achieve the aim of this study, the objectives were to:

- i. investigate the factors responsible for payment problems in construction projects, and
- ii. examine the impact of payment problems on performance from the perspective of smaller construction contractors.

1.2. Research Hypothesis

One research hypothesis was proposed for the study. The hypothesis states that there is no statistically significant difference in the perception of micro, small and medium sized firms on the impact of payment problem in construction.

2. REVIEW OF EMPIRICAL RESEARCH ON PAYMENT PROBLEMS IN CONSTRUCTION

A few international studies have been undertaken on payment problems in construction. In a study by Munaaaim *et al* (2007) conducted among contractors in Malaysia, it was found that 44% of respondents report cases of late payment in public contracts with 54% cited late payment in privately-funded contracts. A small proportion (14%) affirmed non-payment in public projects while 33% reported same in privately-funded projects. Ye and Rahman (2010) examined payment problem from the perspective of building and civil engineering contractors in the Malaysia. The results indicate that 80% of respondents agreed that late payment for a few days is acceptable, and 58.8% did not incorporate risk

of late payment during tendering. Moreover, late payment is more severe in private projects than in public construction.

In another study was conducted by Ramachandra and Rotimi (2011) to investigate the nature of payment problems in the New Zealand construction industry. The results revealed that over 80% of payment disputes are between the client and the main contractors, and only 40% of cases are successful in which claimants are able to recover the amount in dispute. In addition, about 75% of trade creditors are unable to be paid fully after liquidation proceedings which take an average of 18 months to finalise. Amoako (2011) also carried out a study among road contractors undertaking large projects in Ghana. Data received from 52 construction firms were analysed, with 98.1% reporting incidence of delayed payment.

Ramachandra and Rotimi (2012) reported the result of another study investigating the extent of payment problems in New Zealand. The study revealed that payment delays and losses are experienced by main contractors in 10-40%, and by subcontractors in 10-80% of total projects undertaken. Retention monies are also noted to be more often delayed than interim and final payments. The study by Hasmori et al (2012) analysed 393 questionnaires received from micro, small, medium and large contractors drawn from 11 states in Malaysia. The outcomes indicate that 53% and 32% of respondents respectively ranked the creation of financial hardship and creation of cash flow problems as the effect of late and non-payments in construction. Nasser (2013) analysed data received from 113 respondents comprising clients, contractors and consultants in Gaza Strip, Palestine. It was found that contractor-related factors contribute more to payment delays than owner and consultant-relates factors. Another research work by Ramachandra and Rotimi (2015) to investigate the causes of payment problem in New Zealand noted that payment problems mainly relate to contractual issues and financial strength of key industry players.

Previous studies have also noted that payment problems result in poor performance of construction firms. It shifts the financial burden from one party to another (Ye & Rahman, 2010), and create cash flow problems and financial hardship for contractors (Amaoko, 2011; Hasmori et al, 2012; Hou et al, 2011; Munaaaim et al, 2007). Studies have also shown that payment problems result in delayed completion (Amaoko, 2011; Judi & Rashid, 2010; Nasser, 2013) and compel contractors to borrow from financial institutions (Amaoko, 2011). This leads to additional transaction and financing costs, and a concomitant reduction in contractors' profitability (Hou et al, 2011). Payment problems were also found to have cascading effects on parties in the contractual chain (Ramachandra & Rotimi, 2011), and contribute to insolvencies of some construction firms (Judi & Rashid, 2010; Ye & Rahman, 2010).

The literatures reviewed in the earlier paragraphs reported studies undertaken abroad. To the best of the researchers' knowledge, studies on payment problems in Nigeria are hardly available. Most importantly, no study known to the researchers has examined payment problems solely from the perspective of the micro, small and medium sized construction firms. Earlier, it has been observed that these categories of contractors are often poorly capitalised and rely heavily on cash flow to sustain their business operations (Agumba & Fester, 2011; Thwala & Mvubu, 2009). Their weak financial power and the central role they play in the construction economy makes a study on their security of payment even more imperative.

3. METHODOLOGY

The study adopted a cross-sectional survey research design. Factors responsible for payment problems and the impact of delayed and non-payment on construction performance were gleaned from relevant literature. A purposive sampling approach was employed to elicit response from managers of 84 construction firms in the micro-size (less than 10 employees), small-size (10-49 employees) and medium-size (50-199 employees) category. The classification of contractors was based on the definition suggested by National Policy on Micro, Small and Medium Enterprises (Federal Government of Nigeria [FGN], 2010). The study was delimited to contracting firms operating in Akwa Ibom State. Due to increased injection of funds into the Niger Delta regions in the last decade, the state has witnessed an increase in the volume of construction activities financed by both public and private sector clients.

A well-structured questionnaire was used as the instrument for data collection. Respondents were requested to evaluate the level of importance of factors responsible for payment problems as well as the impact of delayed payment on a 5-point Likert scale. Respondents were also required to indicate the level of effectiveness of some suggested measures towards mitigating payment problems, based on their current and previous experience. Statistical Package for Social Science (SPSS) software was used to analyse data collected for the study. Statistical tools employed in the analyses include simple descriptive statistics such as percentage and mean score. Kruskal-Wallis test was also used to statistically determine if there is any difference in the perception of micro, small and medium-sized contractors on the impact of payment problems on their contractual and business performance.

4. PRESENTATION AND DISCUSSION OF RESULTS

Results from the data obtained from the questionnaire survey are presented in the following section. Sixty-two (62) questionnaires were duly completed and returned, representing a 73.81% response rate.

4.1. Characteristics of Respondents

Table 1 shows the characteristics of the respondents. Engineers constitute the highest proportion (30.65%) of respondents in the study and about 66% are from contracting firms which have been in operating for not less than 6 years. Also, the highest proportion (43.55%) of respondents is in the micro construction firm category with 30.65% in the small-size category and 25.81% in medium-size category.

Table 1: Demographic data of respondent and characteristics of responding firms

	Frequency	Percent (%)
Profession of Respondents (N=62)		
Engineer	19	30.65
Builder	15	24.19
Architect	8	12.90
Quantity Surveyor	3	4.84
Others	17	27.42
Years of operation of construction firm (N=62)		

1-5 years	21	33.87
6-10 years	27	43.55
11-15 years	8	12.90
16-20 years	6	9.68
No of workers employed by your firm (N=62)		
Less than 10	27	43.55
10 - 50	19	30.65
Above 50-200	16	25.81

4.2. Payment Modes often Encountered by Construction Firms

Table 2 shows the mean score of different payment modes which contractors encounter in construction. The interim payment method with a mean score of 4.73 ranks as the payment system most frequently used encountered by respondents in the study. However, full payment before commencement recorded a low mean score of 2.14 indicating that the payment mode is less frequently encountered by contractors.

Table 2: Payment mode often encountered by construction firms

Payment mode	Mean score
Interim payment	4.73
Part payment before commencement (Advance payment)	4.15
Full payment after completion	3.42
Full payment before commencement	2.14

4.3. Frequency of Occurrence of Various Payment Problems

In table 3, the frequency of occurrence of various payment problems in construction contracting is presented. Delayed payment is rated as the payment problem most frequently encountered by respondents. Non-payment also ranked high while underpayment is considered by respondents as occurring less frequently.

Table 3: Frequency of occurrence of various payment problems

Payment problem	Mean score
Delayed payment	4.92
Non payment	3.86
Client's refusal to pay claims on variation, fluctuation, loss & expense	3.04
Underpayment	2.35

Traditionally, construction contracts provide for works to be paid for after the work has been done, usually by monthly installment as work progresses. This after the value of payment might have been agreed between quantity surveyors of both the client and the contractor (Cheng *et al*, 2009; Kaka, 2001; Ramachandra & Rotimi, 2011). However, there is usually a time-lag in payment by construction clients or from main contractors to subcontractors. Interim payment system results in contractors being paid in arrears after execution of works, thereby compelling most contractors to arrange alternative funding through bank overdraft, trade credits or other means (Cheng *et al*, 2009).

4.4. Factors Responsible for Payment Problems in Construction

Table 4 presents the mean score of factors responsible for payment problems in construction. The practice of pay-when-paid, delay in certification of interim payment and involvement of too many parties in the process of honouring certificates were rated as the most important factors. The pay-when-paid clause is often inserted in most contracts signed between major construction contractors and smaller firms. It provides that a main contractor's obligation to pay its subcontractors arises only when it has received payment from the client. This arrangement transfers the risk of non-payment from the main contractor to smaller construction enterprises and omits the liability of payment to a subcontractor until the main contractor is paid by the client (NZLC, 1999; Ye & Rahman, 2010).

Table 4: Factors responsible for payment problems

Factors responsible for payment problems	Mean Score	Rank
Adoption of pay-when-paid principle by major contractors	4.69	1
Delay in valuation and certification of interim payment	4.58	2
Involvement of too many parties in the process of honouring certificate	4.27	3
Failure to agree on valuation of work done	4.15	4
Contractors submit incomplete supporting documents for payment claim	3.98	5
Bureaucracy of payment process	3.94	6
Contractor's delay in submitting claims	3.93	7
Client's deliberately delay payment for their own financial advantage	3.84	8
Inability of parties to agree on value of variation work done	3.82	9
Shortage of funds due to increase in contract sum resulting from variation	3.77	10
Wilful withholding of payment by client for personal reasons	3.76	11
Clients withholding payment due to poor quality work	3.63	12
Delay in releasing of the retention monies to contractors	3.57	13
Scarcity of capital to finance the project	3.33	14
Client's poor management and utilisation of available funds	3.26	15
Client's lack of trust of consultants certification/claims	3.13	16
Belief that contractors will accept late payment	2.96	17
Financial failure due to bankruptcy or winding up of client's business	2.87	18

Smaller contractors may suffer a devastating effect due to events which are beyond their control. If the client exercises his right to withhold payment due to default of the main contractor, the subcontractor who may have done his work properly will not get paid (Amaoko, 2011; Prism Economics and Analysis, 2013). In most cases, a subcontractor cannot generally bypass the main contractor and have recourse against the owner because there is no privity of contract between the subcontractor and the owner. Moreover, in some circumstances, there is no interest paid on the delayed payment and a contractor is obliged to continue work even when payment has been delayed (Prism Economics and Analysis, 2013).

The *pay-when-paid* risk is in reality a blind risk that must be undertaken by smaller contractors in order to get work as the practice reflects the imbalance of power in the construction industry. With several contractors competing for the opportunity to undertake construction contracts, most contractors are willing to accept terms that unfairly allocate payment risk, thus giving the client a superior bargaining power. Moreover, if a small contractor refuses to accept a contingent payment, the work will likely be awarded to another bidder and that contractor stands the risk of being struck out from future tendering opportunities. This further reflects the weak bargaining position of smaller construction

firms (Prism Economics and Analysis, 2013; The Law Reform Commission of Western Australia, 1998).

Hasmori *et al* (2012) had noted that payment problems could result from client's financial constraint and clients deliberately withholding payment. The authors also observed that the parties involved in the process of payment claims may sometimes cause payment issue to arise as a result of their actions or inactions. Delay in certification could also be as a result of delay in preparing interim valuation and certificates by consultants, and this may result from poor documentation and filing of claims without adequate supporting documents (Hasmori *et al*, 2012; Munaaim *et al*, 2007; Nasser, 2013).

4.5. Impact of Payment Problems on Contractors' Performance

Table 5 shows the mean scores of the impact of payment problems on performance of smaller construction firms. Increase in construction costs, decrease in profitability, delay in project completion, creation of cash flow problems, and creation of negative chain effect on other parties involved in the project rank as the most severe impact of payment problems in construction.

Table 5: Impact of payment problems on performance of small-medium contractors

Impact of payment problems	Mean score	Rank
Results in increase in construction costs	4.46	1
Decrease in profitability	4.41	2
Results in delay in completion of project	4.32	3
Create cash flow problem/financial hardship	4.16	4
Creates a negative chain effect on other parties involved in the project	4.01	5
Results in construction dispute	3.97	6
Delay in having the expected benefit of the project	3.78	7
Results in insolvency/liquidation of firms	3.75	8
Leads to suspension of works	3.74	9
Results in poor quality work	3.69	10
Results in interruption of work programme	3.62	11
Adverse effect on reputation of the contractor	3.48	12
Inability to tender for another work	3.34	13
Results in exorbitant interest rate resulting from borrowing	3.26	14
Results in termination of contract by contractors	3.13	15
Inability to pay workers' salaries and wages	3.01	16

The result of the study agrees with the view of Amaoko (2011) that payment problems increase construction costs. The study by Hou *et al* (2011) also revealed that payment problems give rise to extra expenses to construction firms. Construction costs are also noted to be higher because contractors usually factor in the cost of finance and the risk associated with late payments into their tenders (Prism Economics and Analysis, 2013). Also during periods when work is suspended due to payment default, contractors keep incurring costs on idle equipment and other overheads (Amoako, 2011; Ramachandra & Rotimi, 2015). Decrease in profitability also ranks as a significant impact of payment problems in construction. This is consistent with the finding of the study by Hou *et al* (2011) which noted that the longer the payment delay from client the more profitability decline. Since the profit margins at the lower layers of the construction supply chain are usually very low, any further depletion of the profit lead to reduced profitability and could further lead to liquidation or insolvency of construction firms.

The result of the study also shows that delay in completion period is a significant impact of payment problems. Amaoko (2011) and Ramachandra and Rotimi (2012b) had noted that delayed payment has a serious effect of early completion of construction projects. Also, the research work by Nasser (2013) indicates that payment problems causes delay in progress and extension of time which result in time overrun of projects. The findings of the study also agree with several authors (Amaoko, 2011; Hasmori *et al*, 2012; Munaaïm *et al*, 2007; Nasser, 2013; Ramachandra & Rotimi, 2011) that payment problems cause cash flow problems to construction firms. Cash flow is said to be essential to the survival of construction firms as the viability of contractors business is dependent on cash flow (Cheng *et al*, 2009). Smaller construction firms need regular injection of cash to continue with their work in a diligent manner and deliver the project on schedule. They rely on prompt payment to sustain their businesses.

It has been earlier noted that multi-chain subcontracting is becoming a common practice in construction contracting, where the whole or a substantial part of the actual work is usually performed by smaller construction contractors who may further delegate specific tasks to other subcontractors and material suppliers. In an industry where cash flow is regarded as the lifeblood of enterprise, payment problems could have cascading effect down the contractual chain (Munaaïm *et al*, 2007; Judi & Rashid, 2010).

4.6. Difference in the Perception of Contractors on the Impact of Payment Problems

Kruskal-Wallis test was used to determine whether the three groups (micro, small and medium-sized construction firms) have different views regarding the impact of payment problems. To determine the difference in view, the following hypothesis that “*there is no statistically significant difference in the perception of micro, small and medium sized firms on the impact of payment problem in construction*” was tested. The result ($\chi^2(2) = 0.022$; $p = 0.989$) show that there is no statistically difference in the perception of micro, small and medium sized construction firms on the impact of payment problems.

5. CONCLUSION AND RECOMMENDATIONS

Payment is the lifeblood of construction and contractors require regular or periodic injections of funds into projects to enable them proceed diligently with their work. The study was carried out to examine the impact of payment problems on the performance of smaller contractors. The practice of pay-when-paid and delay in valuation/certification of interim payment were considered as the most significant factors responsible for payment problems to smaller contractors. In addition, increase in construction cost, decrease in profitability, cash flow problems and negative chain effect on contractual parties ranked as the most significant impacts of payment problems from the perspective of smaller construction contractors. Efforts have been made in some countries to mitigate the occurrence and impact of payment problems in construction, especially for firms in the lower tier of the construction supply chain. A few of these options have been included in the construction contract or security of payment legislation of different countries. Some construction industry practitioners have suggested the use of payment bonds and retention bonds to ensure due performance of payment obligations. Some also suggested the use of contractors' liens (the right to seize someone's property in the event of non-payment) but

this did not enjoy wide acceptance due to certain legal complications that may arise from its adoption.

In view of the fact that the study reveals the pay-when-paid practice as the most important factor responsible for payment problems among smaller contractors, it is recommended that the contingent payment principle of pay-when-paid or pay-if-paid should be abolished in construction. This practices shift the risk of payment default from client to smaller contractors which were already in a vulnerable financial position. Besides, delayed payment has been noted to increase costs of construction and reduced profitability for smaller construction firms. Therefore, it is recommended that in the event of delayed payment, the defaulting party should compensate the affected party by interest payments on the amount owed. This will serve as incentive for construction contract parties to promptly release payments for work satisfactorily completed. More importantly, it will reduce the transaction costs incurred by small and medium-sized contractors as a result of borrowing to finance construction works.

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