

# PERFORMANCE OF CONSULTANTS ON GOVERNMENT PROJECTS IN GHANA: CLIENT AND CONTRACTOR PERSPECTIVE

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## ABSTRACT

*Construction project consultants share the characteristics of helping their clients address problems and improve upon project performance; they have a passion for the wisdom and expertise they bring to the project, and they have the ability to galvanize clients into action. However, it is an open secret that many projects often delay. Also, it is a known fact that most project contract figures swell more than double the original tender figure. Meanwhile, there are supervising consultants who are engaged and paid to manage such important projects. Their role however, is to complement the effort of contractors to ensure a successful completion of a project. The aim of this research is to identify factors affecting the performance of consultants on government projects, and to rank these factors according to their relative importance from the perspective of consultants. Analysis of the factors considered in a survey indicate that the main factors negatively affecting the performance of consultants are: urgency of the project at hand, project duration, variations, political influence from higher authority, timely decision making on the part of the consulting team and the experience of the design team on the project. The others are the ability of the consultants to work as a team, creativity on the part of the consultants in controlling cost and developing own efficiencies so that contract sums are kept within budget .*

**Key words:** Consultants, Performance, Relativity Importance Index

## 1. Introduction

The construction industry is complex in its nature because it comprises large numbers of parties as owners (clients), contractors, consultants, stakeholders, and regulators. Despite this complexity, the industry plays a major role in the development and achievement of society's goals. According to (Shaban 2008) the local construction industry is one of the main economic engine sectors, supporting the Ghanaian national economy.

Also mentions that the construction industry is a dynamic entity due to the level of uncertainties involved in technologies, budgets and development processes (Chan and Chan, 2004). According to Gyadu-Asiedu (2009), several developing countries at various levels of socio-economic development including Ghana have recognized the need and importance of taking measures to improve the performance of their construction industry. One of the means to this end has been to ensure efficiency in role of consultants' performance in project execution.

It is a common knowledge that as a nation we suffer project failures and deficiencies in areas of delay, excessive project variations, unacceptable health and safety practices and astronomical increases in contract sum.

Project failures occur in the whole spectrum of the project life cycle. It erupts from conception, formation, planning and control until implementation. It is an open secret that many projects often delay and most of the contract figures at the beginning of project turns up to swell more than double of the original tender figure all in the name of variation. Meanwhile there are supervising consultants who are engaged and paid to be responsible for the management of such important projects. Their role however, is to complement the effort of contractors to ensure a successful completion of such projects but to the contrary. Consequently, a report produced by Construction Industry Development Board in 2007 ([www.pmg.org.za](http://www.pmg.org.za)), suggests that project failures are not solely caused by contractors. Architects and engineers (consultants) also contribute to the failure of overall project performance, with 50 percent of failures attributed to design faults, 40 percent being caused by construction faults and 10 percent from material faults. All these failures could be attributed to certain factors that hinder the consultant's performance.

Moreover, this paper seeks to identify the significant factors that affect the performance of consultants on development projects, concentrating on clients and contractors perspectives.

The main aim of this paper is to identify from the perspective of clients and contractors (key indicators) the factors that affect the performance of consultants on development projects. Also, the relative importance index of the factors from the key indicators affecting the performance of consultants would be examined.

## **2. Literature review**

### **2.1 The Role of the Consulting Engineers**

The Engineer (consultant) is the employer's agent. He ensures that the project is completed to the right quality against technical specifications and design standards, on time and within budget, i.e. gives the Employer Value for Money. Precisely, some of the main duties of the Consultant according to FIDIC IV are: reviewing and updating design details; monitoring contractor's operations to ensure timely commencement of operation; reviewing contractor's programme; carrying out quality control tests; reviewing contractor's monthly invoices and certifying for payment; evaluating all claims for additional payment and applications for extension of time; and preparing monthly, quarterly and annual progress reports.

According to Rawlinsons, (2003) a project manager should have the following skills: a high level of leadership and communication skills; ability to manage the client issues; ability to manage the local government approval process; ability to manage the design process; ability to manage the construction process; and ability to manage risks. Further, it was mentioned that a project manager/consultant should undertake the following key roles: understanding of the client; understanding of the project; understanding of design; understanding of tender process; understanding of the construction process and technical requirements of a building project; development of Risk Management strategies; and communication.

### **2.2 Factors Affecting Performance of Consultants**

Consultants as used in this context refer to the scenario where an individual or a group of individuals who work as a team are appointed to take responsibility for the design, management and the

construction of development project from conception to operation. Because of this, the word consultants and Project Managers (PMs) will be used interchangeably in this research.

Consultants must be able to operate effectively on a day to day basis to ensure positive impacts on the overall quality of their projects (Bleout, 1998; Pinto & Kharbanda, 1995). For this to happen, PMs/Consultants need to be nurtured and encouraged (Pinto & Slevin, 1989).

Nicolini, (2002), asserted that to stop or hinder the performance of the PMs/Consultants will only stop or hinder the performance of the team chemistry and project results. To be most efficiently used, it is said that PMs/consultants' need to be 'generalists' rather than 'specialists' (Pinto and Kharbanda, 1995). They must "deal with the day-to-day demands of their position while still maintaining a sense of strategic vision for the project" (Pinto and Kharbanda, 1995). However, the traditional construction industry (CI) culture underestimates the actual time and costs spent in resolving technical issues (Love et al, 2002). This, together with the tendency of modern organizations to be geared for short-term requirements (Pfeffer and Veiga, 1999), can lead to the use of PMs/consultants as 'fire fighters' (Pinto and Kharbanda, 1995). Often, improving the consultants' future abilities and long-term performance are just not considered (Adel-Razek, 1997). Work environments that support and encourage creativity and innovation have been associated with increased productivity in general (Veninga, 2000) and are likely to be of importance in influencing consultants'/PMs efficiency (Cleland, 1999). This is expected to involve cross-functional interaction between groups and people to achieve synergy, with organizations that encourage constructive conflict, risk taking and tolerance of failure being the most likely to inspire innovation and creativity (Jassawalla and Sashittal, 1999). A more bureaucratic approach to management, however, tends to stifle innovation (Winch, 2000). What is needed is suggested to be a trade-off between tightly defined systems - that ensure the efficient delivery of products, but also freedom within such systems to encourage creativity and innovation, with the ability to respond quickly to changing needs (Webb, 2000). Long working hours also likely to be a major source of inefficiency for PMs/consultants' – these being increasingly endemic generally worldwide (Sparks et al, 2001; Cameron, 2002; Freeman, 2002; Cooper, 1999; Worrall and Cooper, 1999) and a major cause of productivity loss in the CI in general (Kaming et al, 1998; Horner and Talhouni, 1995). The growth in information technology, globalisation, organizational restructuring, changes in work contracts and work time scheduling are typically blamed (e.g. Sparks et al, 2001) together with job insecurity (Sparks, 2002). The effects of working long hours include industrial and social problems (Cooper, 1999); family breakdown (Cooper, 1998); physical and psychological health problems in general (Sparks et al, 2001; Cooper, 1999); and reduced alertness and concentration (Leonard et al, 1998). The critical consequences of time on the effectiveness of PMs/consultants' has been acknowledged by several leading researchers, such as Thoms and Pinto (1999), indicating that effective PMs/consultants must "act intelligently and wisely on concrete and opportune occasions". Similarly, Love et al's, (2002) research highlights the need for a system for assertive and preventative strategies that continuously assess and evaluate project performance based on improving management responses. Project management especially has a large influence on project productivity, quality and rework (Cooper, 1993 & 1994). Rework, in particular, is estimated to be greater than 10% of the total project cost (Josephson, 2002, Love et al, 2002; Woodward, 1997). Regardless of what "dynamic" is the original cause, resources need to be diverted to resolve it, as well as money and time expended often detrimental to other parts of the project (Love et al, 2002).

Finally, inefficiency in the construction industry (CI) has been attributed on many occasions to its ineffective traditional ways and bad practices (e.g. Egan, 1998; Latham, 1994). As McKenna (1998) observes "Some argue that productivity can be achieved/increased by working harder, faster or longer. In the real world, productivity cannot be achieved by only speed and harder work, without adopting best practices". True productivity (and profit) gains come from identifying and implementing the most efficient work process to satisfy the client's needs, CIB report (1996).

### **2.3 Construction Management Performance**

As indicated above, there is a strong relation between project management and project performance. Management in construction industry is considered as one of the most important factors affecting performance of works. Cheung et al (2004) studied the project performance related to consultants or project managers. It is remarked that development of a Web-based construction Project Performance Monitoring System (PPMS) can assist project managers in exercising construction project performance indicators and can help consultants, senior project management, project directors, project managers, etc., in monitoring and assessing project performance. Pheng and Chuan (2006) stated that while project management is only one of the many criteria upon which project performance is contingent, it is also arguably the most significant as people formulating the processes and systems who deliver the projects. Ling et al (2007) investigated project management (PM) practices adopted by Singaporean construction firms. It was determined the performance level of their projects in China; identifies PM practices that led to better performance; and recommended key PM practices that could be adopted by foreign construction firms in China to improve project performance.

### **2.4 Construction Project Performance**

Performance is related to many topics and factors such as time, cost, quality, client satisfaction; productivity and safety. According to Shaban, (2008), Construction industry in the Gaza Strip suffers from many problems and complex issues in performance. For example, construction of 14 dwelling units at Rafah Area suffered from poor performance because of delay for about 110 days. There are many realistic reasons such as closures, amendment of drawings and amendment of the design. While individual organizations have been measuring their performance for many years, there has been little consistency in the data, and the way it has been published. The performance can be measured by key indicators for evaluation. The purpose of Key performance indicators (KPIs) is that clients want their projects delivered: on time, on budget, free from defects, efficiently, right first time, safely, by profitable companies. The KPIs framework consists of seven main groups: time, cost, quality, client satisfaction, client changes, business Performance, health and safety (DETR, 2000). However, this paper concentrates on the major three Key Performance Indicators, i.e. Consultants/PMs, Clients and contractors.

### **2.5 The Client and Performance**

Clients create the market for the construction industry and so should be placed at the center of the construction process (Latham, 1994). Classification of construction clients are based on knowledge ability, organizational type and size and purpose of ownership. Some clients are knowledgeable, others are not. For instance, some client's firms are small, some are medium sized, and others are large. Also, there are individual construction clients; some are corporate clients while others are public clients. Ultimately, Consumer clients/owners require a built physical asset as an important strategic resource, while commercial/developer clients trade physical assets to make a profit ([www.academia.edu](http://www.academia.edu))

### **2.6 The Contractor and Performance**

A Contractor is a self-employed independent businessperson who agrees (contracts) to do work for another party usually for a fixed price. It is usually an 'arms length' transaction. The individual hiring the contractor defines the desired results and the schedule. The contractor may supply labor only or labor and supplies. Contractors in Ghana are grouped into eight categories (A, B, C, S, D, K, E and G) according the type of works they undertake. These are (i) Roads, Airports, and Related Structures (A); (ii) Bridges, Culverts and other Structures (B); (iii) Labour based road works (C); (iv) Steel bridges and structures: construction rehabilitation and maintenance (S); (v) General building works (D); (vi) General civil works (K); (vii)Electrical works (E); and (viii) Plumbing works (G). In addition, Dansoh (2005) notes a combined category of AB for road contractors. According to Dansoh (2005) Class 4

contractors can tender for contracts up to \$75,000; class 3 up to \$200,000; class 2 up to \$500,000. Class 1 takes contracts of all amounts. The research focused on projects undertaken by category A and B contractors, together with categories D all usually engaged road and buildings.

### **3. Methodology**

Structured questionnaires were designed base on information which will be obtained from the theoretical frame work and literature review of the study. The questions were designed to gather information covering relevant issues to the objectives of the study. The questionnaire comprises of close ended multi-choice type of questions to facilitate categorization and analysis. Questionnaires consisted of two sections. The first section consisted of four questions which covered the name of the organization, status, years of experience and the nature of works the organization undertakes. The second section contains well structured questionnaire which sort to address factors affecting the performance of consultants on development project using a Likert scale of 1-5 was selected to obtain the factors that affects the performance of consultants on development projects.

Interviews comprising open-ended questions to capture information that might be lost in the questionnaires were conducted. Data obtained were analyzed using the appropriate statistical tool (Relative Importance Index) to get the needed results.

This paper was restricted to the traditional form of contract within Ashanti Region.

#### **3.1 Sampling Strategy**

A representative sample of clients and contractors involved in project development was required for the study. The sample size according to Kish, (1965) for the study was obtained by using the Kish formula. A total number of thirty- five 35 registered D3 contractors were obtained (source, Association of building & civil engineering contractors of Ghana, Ashanti region branch, 2011). The total population of road contractors in Ashanti Region was 30 (source, Ghana Highway Authority, 2011). That of ministries and agencies in the Ashanti Region is 23 ([www.ghana.gov](http://www.ghana.gov)).

The Kish formula was applied to obtain the following: sample size for D3 contractors therefore was n=26; the sample size for of road contractors in Ashanti Region is as follows n=23 and agencies and ministries the sample size was n=19.

The relative importance index method (RII) is used here to determine from perspective clients and contractors, factors affecting performance of consultants on development projects. The relative importance index is computed as (Cheung et al, 2004; Iyer and Jha, 2005):

$$RII = \frac{\sum W}{A \times N}$$

Where:

W is the weight given to each factor by the respondents and ranges from 1 to 5

A = the highest weight = 5

N = the total number of respondents

### **4. Data Analysis and Discussion**

It was observed that, the major works executed by respondents 27(40 %) have been undertaking civil work, while 24 (35%) undertake building works, with the remaining 17(25%) undertaking both civil and building works.

The relative importance index (RII) and rank of factors affecting performance of consultants' on development project.

**Table 1:** Factors affecting the performance of consultants

Factors	Client		Contractor	
	RII	RANK	RII	RANK
<b>A. RELATED TO MANAGEMENT OF PROJECT</b>				
A.1 Adequate technical background	0.768421	14th	0.84898	8th
A.2 Poor relationship among team members	0.810526	10th	0.861224	5 <sup>th</sup>
A.3 Ability to coordinate	0.905263	3rd	0.853061	7 <sup>th</sup>
A.4 Ability to take decisions when necessary	0.831579	8th	0.808163	15 <sup>th</sup>
A.5 Competence of the team	0.757895	15th	0.828571	10 <sup>th</sup>
A.6 Ability to delegate authority	0.8	11th	0.820408	12 <sup>th</sup>
A.7 Ability to work as a team	0.884211	5th	0.84898	8th
<b>B. RELATED TO COST MANAGEMENT</b>				
B.1 Accurate and reliable budget estimate	0.789474	12th	0.816327	13 <sup>th</sup>
B.2 Ability to foresee and budget for potential inflation	0.831579	8th	0.82449	11 <sup>th</sup>
B.3 Excessive variation orders	0.975789	2nd	0.767347	20 <sup>th</sup>
B.4 Reworks	0.757895	15th	0.820408	12 <sup>th</sup>
B.5 Prompt in issuing certificates	0.810526	10th	0.795918	17 <sup>th</sup>
B.6 Proper planning and scheduling of works	0.778947	13th	0.857143	6 <sup>th</sup>
B.7 Creativity in controlling own cost and developing own efficiencies	0.894737	4th	0.865306	4 <sup>th</sup>
<b>C. RELATED TO QUALITY OF WORK</b>				
C.1 Design team experience	0.842105	7th	0.869388	3 <sup>rd</sup>
C.2 Delay in producing design document	0.652941	18th	0.755102	21 <sup>st</sup>
C.3 Adequate service test records	0.852632	6th	0.808163	15 <sup>th</sup>
C.4 Adequate material test records	0.842105	7th	0.77551	19 <sup>th</sup>
C.5 See B.3	0.757895	15th	0.689796	23 <sup>rd</sup>
C.6 Excessive errors or omission	0.715789	16th	0.697959	22 <sup>nd</sup>
C.7 See B.4	0.8	11th	0.657143	25 <sup>th</sup>
<b>D. TIME RELATED</b>				
D.1 Coordination of contractors' work in a timely manner	0.842105	7th	0.840816	9 <sup>th</sup>
D.2 Timely decision making	0.852632	6th	0.869388	3 <sup>rd</sup>
D.3 Timely submission of reports, payment certification and claims	0.905263	3rd	0.816327	13 <sup>th</sup>
D.4 Time for completing major specified work sections	0.884211	5th	0.820408	12 <sup>th</sup>
D.5 Timely coordination of utility and other works by local authorities and agencies	0.894737	4th	0.8	16th

<b>E. ENVIRONMENTAL RELATED</b>				
E.1 Political influence from higher authority	0.831579	8th	0.857143	6 <sup>th</sup>
E.2 Economic influence in terms of remuneration and allowances	0.621053	19th	0.828571	10 <sup>th</sup>
E.3 Social in terms of family relations	0.589474	20th	0.767347	20 <sup>th</sup>
E.4 Weather influence	0.663158	17th	0.661224	24 <sup>th</sup>
E.5 Level of Technological advancement	0.789474	12th	0.816327	13 <sup>th</sup>
<b>F. OTHERS</b>				
F.1 Project type	0.821053	9th	0.787755	18 <sup>th</sup>
F.2 Project value	0.894737	4th	0.840816	9 <sup>th</sup>
F.3 Uniqueness of project activities	0.884211	5th	0.812245	14 <sup>th</sup>
F.4 Project duration	0.926316	1st	0.873469	2 <sup>nd</sup>
F.5 Urgency	0.915789	2nd	0.881633	1 <sup>st</sup>

**Table 2:Major factors agreed by clients and contractors as affecting performance of consultants**

Factors	Client		Contractor	
	RII	RANK	RII	RANK
Urgency	0.915789	2nd	0.881633	1 <sup>st</sup>
Project duration	0.926316	1st	0.873469	2 <sup>nd</sup>
Project value	0.894737	4th	0.840816	9 <sup>th</sup>
Political influence from higher authority	0.831579	8th	0.857143	6 <sup>th</sup>
Timely decision making	0.852632	6th	0.869388	3 <sup>rd</sup>
Design team experience	0.842105	7th	0.869388	3 <sup>rd</sup>
Ability to work as a team	0.884211	5th	0.84898	8th
Creativity in controlling cost and developing own efficiencies	0.894737	4th	0.865306	4 <sup>th</sup>
Ability to coordinate	0.905263	3rd	0.853061	7 <sup>th</sup>
Poor relationship among team members	0.810526	10th	0.861224	5th

The most important factors agreed by clients and contractors as the main factors affecting performance of consultants on development projects were: Urgency, Project duration; Project value, Political influence from higher authority, Timely decision making, Design team experience, Ability to work as a team, Creativity in controlling cost and developing own efficiencies, Ability to coordinate and Poor relationship among team members.

## 5. Discussion of the Results

According to clients and contractors project duration with a relative important index (RII) of 0.926316 was ranked first by clients and second by contractors with a relative index of 0.873469. This means that, as always the case, clients are interested in when their facility will be ready for use rather than how it will be completed. This statement agrees with Assaf & Al-Hejji, (2005) claim that, to the owner, delay means loss of revenue through lack of production facilities and rent-able space or a dependence on present facilities. The results clearly indicate that, to clients, when projects slip over their planned schedule, the consultant has not performed.

However, the ranking by the contractors indicate that when projects go beyond their normal durations, the consultant has not performed. Mohamed et al (2010) admitted that in some cases, the consultant directly initiates variations which bring about extension of contract durations. The

variations come as a result of change in design, errors and omissions in design, conflicts between contract documents, and inadequate scope of work for contractor, design complexity, inadequate shop drawing details and lack of consultant's knowledge of available materials and equipment.

Urgency, as factor affecting consultant performance was ranked 1<sup>st</sup> with RII of 0.881633 by contractors. Clients also ranked it 2<sup>nd</sup> with RII of 0.915789. This is extremely important to the contractor, and it is not surprising because just recently the entire senior high education classroom facility for the fourth year in Ghana had to undergo an urgent construction process. In so doing, the consultants responsible for those projects in Ashanti region were required to be at site every day due to the urgency attached to the project, a requirement some of them could not meet.

The ability of consultants to coordinate was ranked 3<sup>rd</sup> client with RII equal 0.905263 and 7<sup>th</sup> by contractors with RII of 0.853061. By the result, client considers consultant ability to coordinate as very important to that of contractor. In support of this result, Bleout, (1998) & Pinto and Kharbanda, (1995) mentioned that consultants or project managers must be able operate and coordinate effectively on a day to day basis to ensure positive impact on the overall quality of their projects.

Ability to work as a team was ranked 5<sup>th</sup> by clients with RII of 0.884211 and 8<sup>th</sup> by contractors with RII of 0.84898. This factor is considered as more important to clients in the sense that, if project managers/ consultants have strong leadership skills, they are able to liaise well with their team, so that project performance can be monitored, controlled and managed. Goal-setting and task-orientation should be present (Bandow, 2001). Project teams often complain that they do not have accurate or up to date information about their resources and what they are working on This result is in line with Iyer and Jha (2005) claim that skills and quality of leadership in terms of their ability to work as team affects strongly the cost and delivery of the project.

Timely decision making by consultants was ranked 6<sup>th</sup> by clients with RII of 0.852632 and 3<sup>rd</sup> by contractors with RII of 0.869388. If consultants are not firm on making and agreeing on decisions that affect the prompt delivery of the project it will always result in delays and cost overruns. This result is in line with Iyer and Jha (2005) as timely decision making enhances availability of resources and can improve schedule on time and cost performance.

Design team experience was ranked 7<sup>th</sup> by clients with RII of 0.842105 and 3<sup>rd</sup> by contractors with RII of 0.869388. However lack of these qualities will result in design errors, omissions, inaccuracies and eventually retards the performance of the contractors as well as increase their operational cost as agreed by Mohamed et al (2010). In a third world country like Ghana, nepotism and political favouritism is always present in most of our dealings hence due diligence is often not done during expression of interest by the evaluation team to ascertain the experiences and qualifications validity of these consultant. Cheung et al, (2004) and Iyer and Jha, (2005) are in agreement with my result as this factor is very important because it affects strongly on quality performance of consultants on projects development.

Political influence from higher authority was ranked 8<sup>th</sup> by clients with RII of 0.83579 and 6<sup>th</sup> by contractors with RII of 0.857143. It is a common knowledge that political expediency in our part of the world overrides technical expediency. The results however, agrees with the statement made by president Obama of the United States of America in his first visit to Ghana after assuming office, "institutions must be allowed to work".

Poor relationship among team members was ranked 10<sup>th</sup> by clients with RII of 0.810526 and 5<sup>th</sup> by contractors with RII of 0.861224. per the result by the contractors, it is enormously difficult for the project manager or head of the consulting team to keep their hands off team members assignment



when the client is putting a great deal of pressure about missed deadline and budget overruns. But that is exactly the moment at which leaders need the benefit of the project team that feels accountable for their achievement.

From the clients perspective it is therefore clear that a good working relationship with team members will bring about a good output from the consultant.

## **6. Conclusion**

The objectives of this research were divided into three sections seeking to identify probable factors affecting consultant's performance and also determine the RII of the factors.

In order of importance, it can therefore be concluded that, the most significant factors identified as affecting consultants performance on development projects are: urgency of the project at hand, project duration in terms of time spent in getting the work done, political influence from higher authority affecting project delivery, timely decision making on the part of the consultancy team and the experience of the design team on the project. The others are the ability of the consultant to work as a team, creativity on the part of the consultant in controlling cost and developing own efficiencies so that contract sums are within budget. Furthermore, the consultant's ability to coordinate efficiently and effectively the works and poor working relationship among team members were identified. It was recommended among other things that, consultants should be more interested with design and cost by using multi criteria analysis and choosing the most economic criteria in order to improve their performance and to increase both clients and contractors satisfaction. In addition, consultants are recommended to facilitate and hasten orders delivered to contractors, issue site instruction on time to obtain better time performance and to minimize disputes and claims. The consulting team should recruit competent and qualified staff with good human relation who can work as a team. This can be done by examining in detail their background in terms of their CV's and past records with other firms.

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