

THE IMAGE OF CONTRACTORS: A SOUTH AFRICAN CASE STUDY

John J Smallwood¹

Department of Construction Management, University of Port Elizabeth, PO Box 1600, Port Elizabeth, 6000, South Africa

Image is important, as it describes how stakeholders and society at large view contractors and the construction industry. Various authors maintain that the construction industry does not have a good image. The poor image is attributed to: poor site conditions; an unacceptably high accident rate; insensitivity to environmental considerations; poor work practices; adversarial relationships; poor productivity; rework; late completion, and cost over-runs. The objective of the research is to assess and benchmark the performance and image of a South African 'best practice' general contractor (GC) cited in the *Egan* report. Clients and subcontractors (SCs) were surveyed to determine their perceptions with respect to the performance and image of the GC. Generally clients and SCs have a positive image of the GC. Furthermore, based upon previous studies the contractor attained higher ratings than GCs in general. The study amplifies the need for contractors, in particular GCs to assess and benchmark their performance and image.

Keywords: clients, contractors, image, performance, South Africa, subcontractors.

INTRODUCTION

According to *The Civil Engineering and Building Contractor* (1998) poor contractor performance in the form of cost over-runs, rework, late completion, an unacceptably high accident rate, insensitivity to environmental considerations, poor work practices and adversarial relationships result in a poor image of contractors and the industry. Rutland (1986) also stresses the importance of environmental, human and back-up factors. The visual image is impacted upon by environmental factors such as plant and equipment and sites, and human factors such as employees' presentation, attitude and behaviour. Back-up factors such as stationery, signage and various public relations related activities also affect image.

Rwelamila and Savile (1994) cite the client's project performance measures as cost, quality, schedule and utility - utility includes constructability. Traditionally, cost, quality and schedule have constituted the parameters within which projects have been procured and managed (Smallwood, 1998). Although this traditional approach has been perpetuated by tertiary construction education, clients, designers, project leaders and the construction industry, it has not been successful with the greater percentage of contracts not being completed within budget and to quality and time requirements (Allen, 1999).

Shenhar, Levy and Dvir (1997) maintain the meeting of cost, schedule and technical goals are important in the early stages of a project. However, the criteria to determine the success of a project include: technical performance; efficiency of execution;

¹ coajjs@upe.ac.za

managerial and organizational implications; personal growth, and manufacturability and business performance. They also maintain that customer satisfaction should be reviewed relative to four stakeholders: client; developer; project team, and end user.

Given that a South African 'best practice' GC cited in the *Egan* report wished to assess its image and performance, and that the author had conducted two studies as part of a continuing image of contractor study, the first phase of a collaborative study was launched to determine the image of the GC relative to a range of aspects, as perceived by clients and SCs. A further phase of the study will investigate the link, if any, between image and inter alia, the benefits of an enhanced image.

LITERATURE SURVEY

Customer satisfaction

Research conducted in the USA by Cook *et al.* (2000) among a range of electrical contractor customers developed a customer satisfaction model. The model consists of five satisfaction quality dimensions: safety; project management; contractor / customer relationship; cost, and prepared / skilled workforce.

Safety entails understanding and following safety regulations, maintaining a safe work environment and employing workers who practice safe work habits. Project management includes the ability to plan, schedule, manage, and execute all aspects of a project from the conceptual design stage to project completion. Contractor / customer relationship encapsulates the overall relationship and is addressed in terms of trust, respect, integrity, willingness to partner, responsiveness, and communication ability. The dimension of cost includes initial project estimates, value engineering services, lower cost alternatives, variation order pricing and project billing activities. Staff who are knowledgeable of the electrical code of practice, skilled in electrical construction techniques, take pride in quality work and understand advanced technologies, constitute prepared / skilled workforce.

A national survey conducted during the research indicated safety to be the most important quality dimension, followed by project management and contractor / customer relationship. The prepared / skilled workforce and cost dimensions were jointly ranked lowest in importance.

Kometa *et al.* (1995) conducted research in the UK among consultants to determine the fundamental needs of clients. Based upon a relative importance index, functionality of a building was ranked first, followed by safety, both during construction and throughout the life of a building, quality, schedule, and cost.

Research conducted in South Africa investigated the degree of importance of project parameters according to architects (Smallwood, 2000). Based upon an importance index, client satisfaction was ranked first, followed by project quality, project cost and project schedule.

Status quo

According to Allen (1999) a Construction Clients Forum survey conducted in the UK in the first quarter of 1999 revealed that: clients were experiencing time overruns on more than half their projects, only one third were completed on time, with 9% finishing early; almost one-third of projects were over budget, and 'zero defects' was achieved on handover on 10% of projects.

Causes of poor performance

Research conducted among GCs in South Africa by Smallwood and Rwelamila (1996) investigated, inter alia, the causes of poor performance in terms of H&S (H&S), productivity and quality. The computation of an overall average percentage for each aspect enabled the aspects to be ranked. Inadequate training was ranked first, followed by lack of management expertise, worker participation, QMSs and improvement processes. Tam and Harris (1996) cite, inter alia, equipment, and quality of management team as factors that affect the performance of contractors.

Improving performance

The New South Wales Government (1998) intends to engender focus on the following as part of their strategy to improve the performance of its industry: management and workforce development; workplace improvement; industrial relations; H&S, and environmental management.

In terms of a contractor's perspective, The Associated General Contractors of America (1992) advocates Total Quality Management (TQM) as a strategy to improve overall contractor performance. TQM has as its main thrust continuous improvement in H&S, productivity, quality, and employee and client satisfaction. The TQM mission in construction is to construct a quality product – an error-free one – for the customer by preventing errors in the construction process. TQM is the linkage of the processes, which deal with H&S, productivity, quality and satisfaction, with the real benefit being the synergy between them (Levitt and Samelson, 1993).

RESEARCH

Sample strata and methodology

Fourteen of the GC's clients and twenty 'preferred' SCs were surveyed by means of postal surveys. 8 clients and eleven SCs responded, which constitutes response rates of 57.1 % and 55 % respectively.

Analysis

Can't comment / Unsure; Very poor / Not important / Much worse; Poor / Less than important / Worse; Average / Important / Same; Good / More than important / Better; Excellent / Very important / Much better questions:

$$II = \frac{1n_1 + 2n_2 + 3n_3 + 4n_4}{n_0 + n_1 + n_2 + n_3 + n_4}$$

Where n_0 = Unsure / Very poor / Not important / Much worse, n_1 = Poor / Less than important / Worse, n_2 = Average / Important / Same, n_3 = Good / More than important / Better, n_4 = Excellent / Very important / Much better

It should be noted that *can't comment* responses have been excluded from the denominator relative to ratings of the GC.

Findings

Table 1 indicates the importance attached to twenty-six image - related aspects by clients and SCs (relative to GCs) in terms of an II with a minimum value of 0, and a maximum value of 4.0. It is notable that with the exception of signage according to clients, all twenty-six aspects have II values above the midpoint value of 2.0, and

therefore the aspects can be deemed as important. However, it should be noted that the II value of signage is on the 'cut-point', namely 2.0. Generally, quality and site management predominate. Although communication, remaining within budget, and post project service are important to clients, they are substantially less important to SCs. Management (top) and management (middle) are more important to SCs than to clients – this is probably attributable to the influence of these levels of management on the awarding of contracts. Safety (occupational) and health (occupational) are more important to SCs than to clients – SCs undertake the physical work and consequently H&S issues are more relevant to them.

Mean II values $> 3.2 \leq 4.0$, indicate that the eleven aspects can be deemed to be between more than important to very important / very important to respondents. It is notable that two of the traditional project parameters, namely quality and time performance fall within this range – remaining within budget falls marginally outside this range. It is also notable that a non – traditional project parameter, namely H&S in the form of safety (occupational) and health (occupational) fall within this range. Furthermore, it is notable that relative to clients, eleven aspects fall within this range, and relative to SCs, thirteen do.

Table 1: Comparison of importance of twenty – six aspects to clients and SCs

Aspect	Importance (II)			Ranking		
	Client	SC	Mean	Client	SC	Mean
Administration (project)	3.56	3.55	3.56	7=	7=	6
Claims orientated	3.56	2.64	3.10	7=	21=	13
Communication	3.89	3.55	3.72	1=	7=	2
Concern for the environment	2.56	2.64	2.60	18=	21=	22
Facilities (change rooms, toilets)	2.33	3.18	2.76	22	14=	18
Health (occupational)	2.78	3.64	3.21	13=	4=	10=
Hoarding/site enclosure	2.22	3.27	2.75	23	12=	19
Housekeeping	2.78	3.36	3.07	13=	10=	14
Industrial relations	2.67	3.27	2.97	15=	12=	15
Management (Site)	3.67	3.73	3.70	6	3	3
Management (Middle)	3.33	3.64	3.49	11	4=	8
Management (Top)	3.44	3.82	3.63	9=	1=	4
Material waste	2.44	2.64	2.54	20=	21=	23=
Plant & equipment (condition)	2.56	3.09	2.83	18=	17	17
Post project service	3.78	2.64	3.21	4=	21=	10=
Public relations	2.67	2.73	2.70	15=	19=	20
Quality	3.89	3.82	3.86	1=	1=	1
Relations with site neighbours	2.11	3.18	2.65	24=	14=	21
Remaining within budget*	3.89	2.36	3.13	1=	26	12
Safety (occupational)	3.44	3.64	3.54	9=	4=	7
Signage (project)	2.00	2.82	2.41	26	18	26
Site offices	2.67	3.18	2.93	15=	14=	16
Storage	2.11	2.73	2.42	24=	19=	25
Time performance	3.78	3.45	3.62	4=	9	5
Worker attire	2.44	2.64	2.54	20=	21=	23=
Worker skills	3.11	3.36	3.24	12	10=	9

Mean II values $> 2.4 \leq 3.2$, indicate that the thirteen aspects can be deemed to be between important to more than important / more than important to respondents – the non - traditional project parameter of concern for the environment falls within this range. It is notable that relative to clients, ten aspects fall within this range, and relative to SCs, thirteen do.

II values $> 1.6 \leq 2.4$, indicate that the aspects can be deemed to be between less than important to important / important to respondents. Relative to clients five aspects do, and relative to SCs none do.

Table 2: Comparison of client, SC, mean ratings of the GC, and SAPOA ratings of GCs relative to twenty-six aspects

Aspect	Rating (II)				Ranking			
	Client	SC	Mean	SAPOA GCs	Client	SC	Mean	SAPOA GCs
Administration (project)	3.76	3.64	3.70	2.63	23	4=	2	4=
Claims orientated	3.22	3.18	3.20	2.11	20=	19=	19	16
Communication	3.44	3.45	3.45	2.23	10=	8=	10	12
Concern for the environment	3.00	2.50	2.75	1.67	24=	26	26	25
Facilities (change rooms, toilets, etc.)	3.29	3.09	3.19	1.54	16=	23	20	26
Health (occupational)	3.29	3.36	3.33	1.97	16=	12=	14	22
Hoarding/site enclosure	3.44	3.18	3.31	2.00	10=	19=	15	21
Housekeeping	3.63	3.36	3.50	2.06	5	12=	6=	20
Industrial relations	2.50	3.50	3.00	2.39	26	7	24	8
Management (Site)	3.67	3.36	3.52	2.76	3=	12=	5	3
Management (Middle)	3.67	3.27	3.47	2.82	3=	15=	11=	2
Management (Top)	3.78	3.91	3.85	2.97	1	1=	1	1
Material waste	3.14	2.73	2.94	1.88	22	25	25	23
Plant & equipment (condition)	3.33	3.27	3.30	2.38	14=	15=	16	9=
Post project service	3.56	3.40	3.48	2.06	6=	11	9	18=
Public relations	3.56	3.27	3.42	2.06	6=	15=	13	18=
Quality	3.44	3.55	3.50	2.63	10=	6	6=	4=
Relations with site neighbours	3.29	3.27	3.28	2.20	16=	15=	17	13
Remaining within budget*	3.50	3.43	3.47	2.43	8=	10	11=	7
Safety (occupational)	3.50	3.80	3.65	2.38	8=	3	4	9=
Signage (project)	3.00	3.45	3.23	2.14	24=	8=	18	15
Site offices	3.33	3.64	3.49	2.34	14=	4=	8	11
Storage	3.25	3.10	3.18	2.09	19	4=	21	17
Time performance	3.44	3.91	3.68	2.60	10=	1=	3	6
Worker attire	3.22	3.10	3.16	1.80	20=	21=	22	24
Worker skills	3.11	3.00	3.06	2.15	23	24	23	14

Table 2 enables a comparison to be made between the client, SC, and mean ratings of the GC, and the rating of GCs in general by members of the South African Property Owners Association (SAPOA) during a previous ‘image of contractors’ study in terms of performance relative to twenty – six image related aspects (Smallwood, 2001). It is significant that all the client, SC and mean II values are above the midpoint value of

2.0, which indicates that the GC’s performance relative to all aspects can be deemed to be above average.

Furthermore, it is significant that twenty-one client, eighteen SC and eighteen mean aspects have II values $> 3.2 \leq 4.0$, which indicates that the GC’s performance relative to these aspects can be deemed to be between good to excellent / excellent – it is notable that relative to clients all three levels of management and administration (project) achieved rankings within the top four, whereas relative to SCs, management (top), time performance, safety (occupational), administration (project), site offices, and storage achieved rankings within the top six. Further, it is notable that relative to SCs, management (top), administration (project), time performance, and safety (occupational) achieved rankings within the top four.

Table 3: Comparison of the mean performance of the GC and SAPOA ratings of GCs relative to the mean importance of twenty-six aspects according to the GC’s clients and SCs

Aspect	Rating (II)			Ranking		
	Mean Importance	Mean Performance	SAPOA rating of GCs	Mean Importance	Mean Performance	SAPOA
Administration (project)	3.56	3.70	2.63	6	2	4=
Claims orientated	3.10	3.20	2.11	13	19	16
Communication	3.72	3.45	2.23	2	10	12
Concern for the environment	2.60	2.75	1.67	22	26	25
Facilities (change rooms,	2.76	3.19	1.54	18	20	26
Health (occupational)	3.21	3.33	1.97	10=	14	22
Hoarding/site enclosure	2.75	3.31	2.00	19	15	21
Housekeeping	3.07	3.50	2.06	14	6=	18=
Industrial relations	2.97	3.00	2.39	15	24	8
Management (Site)	3.70	3.52	2.76	3	5	3
Management (Middle)	3.49	3.47	2.82	8	11=	2
Management (Top)	3.63	3.85	2.97	4	1	1
Material waste	2.54	2.94	1.88	23=	25	23
Plant & equipment (condition)	2.83	3.30	2.38	17	16	9=
Post project service	3.21	3.48	2.06	10=	9	18=
Public relations	2.70	3.42	2.06	20	13	18=
Quality	3.86	3.50	2.63	1	6=	4=
Relations with site neighbours	2.65	3.28	2.20	21	17	13
Remaining within budget*	3.13	3.47	2.43	12	11=	7
Safety (occupational)	3.54	3.65	2.38	7	4	9=
Signage (project)	2.41	3.23	2.14	26	18	15
Site offices	2.93	3.49	2.34	16	8	11
Storage	2.42	3.18	2.09	25	21	17
Time performance	3.62	3.68	2.60	5	3	6
Worker attire	2.54	3.16	1.80	23=	22	24
Worker skills	3.24	3.06	2.15	9	23	14

II values $> 2.4 \leq 3.2$, indicate that performance relative to the aspects can be deemed to be between average to good / good. Relative to clients, it is notable that material waste, concern for the environment, worker skills, and industrial relations fall within

this range. Similarly, relative to SCs it is notable that facilities, worker skills, material waste, and concern fall within this range.

Table 3 enables a comparison to be made between the mean importance of aspects, the mean rating of the GC, and the rating of general contractors (GCs) by members of the South African Property Owners Association (SAPOA) during the previous 'image of contractors' study (Smallwood, 2001). It is significant that all mean performance ratings of the GC are higher than those for GCs in general according to SAPOA. However, it is notable that relative to six aspects the GC's mean performance rating is lower than the mean importance rating, albeit it marginally so relative to two aspects ($\leq 5\%$ difference), namely management (site) and management (middle). However, there is a fair difference relative to three aspects ($> 5 \leq 10\%$): communication; quality, and worker skills.

Table 4 indicates the SC rating of the GC in terms of performance relative to nineteen activities of management work in terms of an II with a minimum value of 0, and a maximum value of 4.0. It is notable that all nineteen activities have II values above the midpoint value of 2.0, and therefore performance can be deemed to be above average.

Table 4: Rating of the GC in terms of functions and activities of management work

ASPECT	Response (%)						II	Rank
	COMME NT	VERY POOR	Poor	Average	Good	Excellent		
Forecasting (predicting the future)	9.1	0.0	0.0	18.2	63.6	9.1	2.90	18
Establishing objectives (what needs to be done)	0.0	0.0	0.0	0.0	45.5	54.5	3.55	1=
Programming (planning the sequence of work)	0.0	0.0	0.0	9.1	27.3	63.6	3.55	1=
Scheduling (planning the time needed for the work)	0.0	0.0	9.1	9.1	18.2	63.6	3.36	5
Budgeting (allocating resources to do the work)	9.1	0.0	0.0	0.0	72.7	18.2	3.20	8=
Developing policies (guidelines for standard issues)	18.2	0.0	0.0	18.2	45.5	18.2	3.00	16=
Developing procedures (steps on how to do the task uniformly)	0.0	0.0	0.0	36.4	45.5	18.2	2.82	19
Developing organization structure (identifying and grouping the work)	9.1	0.0	0.0	9.1	63.6	18.2	3.10	13=
Delegating (entrusting responsibility and authority)	0.0	0.0	0.0	0.0	72.7	27.3	3.27	7
Developing relationships (make it possible for cooperation)	0.0	0.0	0.0	0.0	54.5	45.5	3.45	3
Decision making	9.1	0.0	0.0	9.1	45.5	36.4	3.30	6
Communicating e.g. NMC to subcontractors	0.0	0.0	0.0	18.2	45.5	36.4	3.18	11=
Motivating	0.0	0.0	0.0	18.2	45.5	36.4	3.18	11=
Selecting people	9.1	0.0	0.0	27.3	36.4	27.3	3.00	16
Developing people e.g. training	9.1	0.0	0.0	0.0	54.5	36.4	3.40	4
Developing performance standards (the criteria used to assess results)	9.1	0.0	0.0	9.1	54.5	27.3	3.20	8=
Measuring performance	9.1	0.0	0.0	9.1	63.6	18.2	3.10	13=
Evaluating performance	9.1	0.0	0.0	0.0	72.7	18.2	3.20	8=
Correcting performance	9.1	0.0	0.0	18.2	45.5	27.3	3.10	13=

Furthermore, it is significant that seven activities have II values $> 3.2 \leq 4.0$, which indicates that the GC's performance relative to these activities can be deemed to be between good to excellent / excellent: establishing objectives; programming; developing relationships; developing people; scheduling; decision making, and delegating – it is notable that budgeting, developing performance standards, and evaluating performance have II values of 3.20 fall on the cut – point and thus are marginally outside this range.

Table 5 enables a comparison to be made between the client, SC, and mean overall ratings of the GC. Most (more than the majority) of clients rate the GC 'excellent', whereas just over the minority of SCs do.

Table 5: Comparison of overall ratings of NMC.

Rating	Response (%) / II					
	Client	II	SC	II	Mean	
Very poor	0.0		0.0		0.0	
Poor	0.0		0.0		0.0	
Average	0.0	3.86	0.0	3.36	0.0	3.61
Good	14.3		63.6		39.0	
Excellent	85.7		36.4		61.1	

Respondents were required to indicate how the GC compared to other contracting organizations. The majority of clients rated the GC 'better', whereas the majority of SCs rated the GC 'much better'. However, given that the II values $> 3.2 \leq 4.0$, the GC can be deemed to be between better to much better / much better than other contracting organizations.

Table 6: Comparative rating of the GC relative to other contracting organizations.

Rating	Response (%) / II					
	Client	II	SC	II	Mean	II
Much worse	0.0		0.0		0.0	
Worse	0.0		0.0		0.0	
Neutral	0.0	3.29	0.0	3.73	0.0	3.51
Better	71.4		27.3		49.4	
Much better	28.6		72.7		50.7	

On average clients had 1.11 comments in general regarding the GC, and SCs 1.3. Selected client comments are:

- “Very professional and a pleasure to deal with, particularly for our company, which is outside the construction industry.”
- “Very good construction company, especially when they are also in control of the project.”
- “Preliminaries and mark-ups are higher than competitors, but ... has provided us excellent service.”
- “They are very willing to work together to achieve what the client wants. Find P + G a bit excessive in value.”

Selected SC comments include:

- It's a company that progresses and wants you to progress.”
- “I am happy to see management is trying to improve relations with subbies as was before. I hope that they try to continue to keep it that way.”

- "... is a company not without faults, but very easy to work with. I feel safe when I work for ..."
- "We rate them above other contractors due to quality, integrity, payment, professionalism and the like."
- "They ... are an excellent company to be associated with and we are privileged to be part of their Turnkey projects team."

CONCLUSIONS

Image is impacted upon by performance relative to both traditional and non – traditional project parameters and a range of aspects. However, relative to many parameters and aspects the degree of importance differs between clients and SCs. Claims oriented, post project service, remaining within budget and time performance are more important to clients, whereas facilities (change rooms, toilets), H&S, hoarding / site enclosure, housekeeping, plant and equipment (condition), relations with site neighbours, signage (project), site offices, and storage are more important to SCs. Quality remains No. 1 – relative to clients it impacts on the utility and life of a structure, and maintenance costs; relative to SCs it impacts upon the execution of their work. Generally clients and SCs have a positive image of the GC. Furthermore, based upon previous studies the contractor has higher ratings than GCs in general, which is reinforced by the comparative to other contracting organizations 'better to much better / much better' rating.

Clearly, the study amplifies the need for contractors, in particular GCs to assess and benchmark their performance and image. The comments in general reinforce the importance of image, in particular the comment "Very professional and a pleasure to deal with, particularly for our company, which is outside the construction industry." is a significant comment / finding, in that it amplifies the importance of customer satisfaction. Clients expect optimum service from all industries; construction included and compare the service provided by the construction industry to that provided by other industries.

There are some aspects that could be given more attention, namely material waste, worker skills, and concern for the environment. Consideration should be given to addressing the 'high' preliminaries perception.

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