

EMPLOYERS' AND AGENTS' PERSPECTIVES OF THE CONDITION OF THE CONSTRUCTION INDUSTRY IN SOUTH AFRICA

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Annual monitoring of the condition of the South African construction industry is vital to enable government and other role players to evaluate the impact of current interventions and to timely and pro-actively implement revised legislation, strategies and development programmes to act as an updated roadmap for the future well-being and growth of the industry. This monitoring of the construction industry is done annually by the Construction Industry Development Board (cidb) in partnership with the Department of Quantity Surveying and Construction Management of the University of the Free State. A database with contact particulars of employers, contractors and agents involved in 3441 projects completed in 2008 was compiled. Three separate survey forms were faxed or e-mailed to the contractors, employers and agents of these projects. Their responses were captured in a Microsoft Access database. From the 3441 completed projects in the database, 1169 survey forms were received back from contractors, 602 from agents and 332 from employers. The scope of this paper is limited to the results received from the employers and agents. The average perspectives of the respondents were determined for different project types, employer categories and provinces. The main findings were that contractor quality was discarded as being of any importance in many tenders allocated. Agents were only paid on time on 47% of all projects completed. There is a strong indication of political intervention in the tender adjudication procedures of many employers. This research contributes to the understanding of the construction industry and highlights existing problems to solve on the way forward. Government can make use of the results obtained to timely and pro-actively take action, or implement revised legislation, strategies and development programmes to ensure the well-being and growth of the industry.

Keywords: construction industry indicators, key performance.

INTRODUCTION

The Construction Industry Development Board (CIDB) Act (Republic of South Africa 2000) was passed in 2000 to establish a statutory body aimed at driving an integrated construction industry development strategy. This body was required as the construction industry plays an indispensable role in the South African economy in providing the physical infrastructure which is fundamental to the country's development. The construction industry operates in a uniquely project-specific and complex environment, combining different investors, clients, contractual arrangements and consulting professions. It impacts directly on communities and the

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public at large and its improved efficiency and effectiveness will enhance quality, productivity, health, safety, environmental outcomes and value for money to the South African society. In terms of this act the CIDB ‘may develop target and performance indicators related to those best practice standards and guidelines and establish mechanisms to monitor their implementation and evaluate their impact’.

Construction Industry Indicators (CIIs) have been developed by the Department of Public Works and the cidb with assistance from the CSIR (van Huyssteen, van Heerden, Perkins and Gyimah, n.d.: Online) to play a useful role in developing a sustainable industry and to be adopted as a tool for improving performance in the South African construction industry. The CIIs of the cidb rely heavily on international experience and particularly those indicators adopted in the United Kingdom. In the United Kingdom the first Key Performance Indicators (KPIs) were published in 1999 in response to the Rethinking Construction report by Egan (1998). These KPIs had three objectives, namely (Rethinking Standards in Construction 2006: 3).

- To provide companies and projects with a simple method of establishing a performance measurement system.
- To provide organizations with a straightforward method of benchmarking their performance against others in the construction industry; and
- To track long term trends in performance, and specifically, to demonstrate whether the construction industry was achieving the targets set out in Rethinking Construction.

Cost, time and quality are the three basic and most important performance indicators in construction projects followed by others such as safety, functionality and satisfaction (Chan and Ada 2004: 203-221). Based on the Egan report the Movement for Innovation and Construction Best Practice Programme (CBPP) was formed and is now recognized as a leading organization involved in the production of KPIs within the industry (Beatham, Anumba and Thorpe 2004: 93-117). The KPIs launched by the CBPP are: client satisfaction, product and service, profitability, productivity, defects, safety, predictability of time and cost, construction time and construction cost. These KPIs were benchmarked within the construction industry and have been very successful in introducing many companies to the subject of performance measurement (Beatham *et al.* 2004: 93-117).

The CIDB CIIs measure the performance of the South African construction industry by measuring employer satisfaction with the project milestone dates achieved, construction costs versus tender amount, contractors’ performance, agents’ (consultants’) performance, and the quality of materials used. The contractors’ satisfaction is measured by their profitability, the quality of the contract documentation, the efficiency, openness and transparency of the contract adjudication process, the management of variation orders and claims, payment delays and the performance of their materials suppliers. The procurement indicators measured are obtained from the agents involved and include contractor performance issues utilized in the adjudication of tenders, the type of procurement procedure used, and the contracting strategy adopted.

The CIDB CIIs described above have been captured since 2003, and are currently being captured in partnership with the Department of Quantity Surveying and Construction Management of the University of the Free State. This paper is part of a series of annual papers (Marx 2008; 2009) presenting the results of this continuous

survey project. It is a report on the results of the 2009 survey for projects completed in 2008.

RESEARCH METHOD

A database, with contact particulars of employers, contractors and agents involved in 3441 projects completed in 2008, was compiled. Three separate survey forms were faxed or e-mailed to the contractors, employers and agents of these projects. Their responses were captured in a Microsoft Access database. The average perspectives of the respondents were determined for different project types, employer categories and provinces. All questionnaires made use of the following scale to measure different satisfaction levels: A score of 10% to 30% means dissatisfied, 40% to 70% means neither satisfied nor dissatisfied and 80% to 100% means satisfied.

SCOPE

The CIIs of the CIDB need to evolve from the lessons learned from previous surveys, and are therefore subject to change and refinement. The CIIs considered in this report are only the project related indicators. The CIDB also measures health and safety and empowerment progress which are not discussed in this report. Other economic indicators such as production prices, and building plans passed are published elsewhere.

From the 3441 completed projects in the database, 1169 survey forms were received back from contractors, 602 from agents and 332 from employers. This paper is limited to the most important results obtained from the employer and agent survey forms.

DISCUSSION OF THE AGENTS' SURVEY RESULTS

Project type and employer category distribution of responses received

Table 1 gives a summary of the survey forms completed by agents. The number of survey forms completed is indicated for different employer categories and project types, with the purpose to evaluate whether responses were obtained for all types of construction projects and all the different employer bodies. There has been a significant increase in the number of responses received for projects completed in 2008 compared to the previous surveys. This is due to the fact that a much larger database of projects completed was compiled than in previous years.

The Table shows that the largest group of responses received were from civil works (38%) and non-residential building projects (26%) and projects of the private sector (33%), provincial departments (20%) and regional district councils (19%) were best represented in the survey.

The percentage responses received from the different provinces were also correlated with the construction activities in these provinces to make sure that a well distributed response was obtained. This was found to be the case.

It is important to note that in certain categories, only one survey form was received and therefore the opinion, from a single agent, can not be considered an average response. The results are presented per project type and per client category to ensure that the results for less represented project types do not disappear in the average of all projects.

Table 1: Agent survey responses received for project types and employer categories 2008

Project Type	Total No.	33%	10%	5%	20%	11%	19%	2%	0%	% of Total Survey Results
Residential Building	47	31	3	1	9	2	-	1		8%
Non-residential Building	155	72	8	14	34	6	18	3		26%
Civil Works	230	50	21	9	40	36	71	3		38%
Mechanical Works	47	5	3	3	21	4	11	-		8%
Electrical Works	89	30	22	2	9	12	12	1	1	15%
Special Works	34	12	5	2	9	4	2	-		5%
Not Specified	-	-	-	-	-	-	-	-		0%
	602	200	62	31	122	64	114	8	1	Total No.
		Private sector	Public Corporation e.g. ESKOM, ACSA	National Department	Provincial Department	Metropolitan Council	Regional / District Council	Public Private Partnership	Not Specified	

Employer Category

Contractor performance issues utilized in the adjudication of tenders

Agents were requested to indicate which contractor performance issues were taken into account during the tender adjudication process and the results are indicated in Table 2 for different employer categories.

Table 2: Contractor performance issues used in the adjudication of tenders 2008

Performance Issues	% of Projects in each Employer Category using different Performance Issues							
Financial offer	29	10	10	16	9	10	13	
Financial offer and preference	10	33	27	53	44	57	12	
Financial offer and quality	23	17	7	5	11	3	25	
Financial offer, quality and preference	38	40	56	26	36	30	50	
	Private Sector	Public Corporation e.g. ESKOM, ACSA	National Department	Provincial Department	Metropolitan Council	Regional / District Council	Public Private Partnership	

Employer Category

Table 2 shows that even the private sector incorporated preference in 48% of all their projects. No longer are price and quality the only issues evaluated and tender allocation based on financial offer, quality and preference was most popular (38%).

Table 2 shows that there were still a large number of projects where financial offer and preference were the only criteria used to allocate tenders. It is alarming that financial offer and preference were the only criteria considered in 53%, 44% and 57% of projects for provincial departments, metropolitan councils and regional/district councils respectively. In other words, the quality i.e. capability, training, performance and track record, of the contractors, were considered as being of no importance. This political strategy to support and build emerging contractors should be re-evaluated by government.

Agents' satisfaction with the time allowed for planning

Table 3 shows the agents' satisfaction level with the time allowed by the employer for planning. Except for the low scores of 40% and 60% for particular single projects, a low score of 64% was achieved for electrical projects of metropolitan councils and 66% for the non-residential buildings projects of public corporations. According to the results received the time allowed for thorough planning and documentation is, generally speaking, not problematic.

Table 3: Agents' satisfaction level with time allowed for planning

Project Type	% Satisfaction for different Client Categories						
	Private Sector	Public Corporation	National Department	Provincial Department	Metropolitan Council	Regional / District Council	Public Private Partnership
Residential Building	85	83	60 (1)	74	80	-	40 (1)
Non-residential Building	77	66	79	80	77	76	83
Civil Works	83	80	87	79	81	78	90
Mechanical Works	80	83	90	98	93	83	-
Electrical Works	74	76	75	77	64	73	60 (1)
Special Works	80	86	90	76	88	80	-
The value in brackets is the number of projects involved							

Deviation from the tender adjudication procedures

Agents were posed the question whether the employer awarded the tender to the responsive tenderer who achieved the best tender score during the tender evaluation process.

The tenders were evaluated by the agents according to the employer's own approved tender evaluation procedures. Non-responsive tenders received were ignored. Table 4 shows the percentage of contracts that were not awarded to the responsive tenderer with the best tender evaluation score per employer category and province. The conclusion can only be that this indicates some form of political intervention, manipulation of results or corrupt / fraudulent practices. The results are quite shocking bearing in mind that it is not based on perceptions of the aggrieved tenderers, but on the knowledge of the independent agents of the employers. The national departments, except in the Gauteng province, performed very well. Table 4 shows in which provinces and for which employer categories tender adjudication practices should be investigated.

Payment delays

The average number of days delays between submission of professional fee accounts and receipt of payment is shown in Table 5. The agents' fees were paid within 30 days for only 47% of all projects completed. The provincial departments were the slowest payers of fees with fees only paid after more than 90 days on 17% of all their projects. Late payment of agents' fees cause cash flow problems.

Table 4: Contracts not awarded to the tenderer with best tender score

Employer Category	% Contracts not awarded to the responsive tenderer with best tenderer score								
Private Sector	0	25	9	11	9	0	67	37	38
Public Corporation	0	7	0	80	43	0	0	33	0
National Department	0	20	0	0	0	-	0	0	0
Provincial Department	0	50	29	25	33	0	0	6	0
Metropolitan Council	25	3	20	0	0	0	0	0	0
Regional / District Council	14	14	10	8	0	13	0	3	7
Public Private Partnership	-	0	-	0	-	0	33	0	0
	Free State	Gauteng	KwaZulu-Natal	Limpopo	Mpumalanga	North West	Northern Cape	Western Cape	Eastern Cape
	Province								

Table 5: Payment delay of agents' fees for different employer categories 2008

Avg. Days Delay	% of Projects with Payment Delay per Employer Category							% of all Projects
≤ 14	9	8	10	3	2	18	50	9
14 to 30	36	36	48	44	39	32	25	38
30+ to 60	38	48	26	29	45	41	25	38
60+ to 90	10	3	10	7	9	9	-	8
90+ to 120	3	2	3	2	3	-	-	2
120+	4	3	3	15	2	-	-	5
	Private Sector	Public Corporation	National Department	Provincial Department	Metropolitan Council	Regional / District Council	Public Private Partnership	

DISCUSSION OF THE EMPLOYERS' SURVEY RESULTS

Project type and employer category distribution of responses received

Table 6 provides a summary of the survey forms completed by employers for projects completed in 2008. The number of survey forms completed is indicated for different employer categories and project types.

The table shows that the majority of responses were for civil works (40%) and non-residential building projects (23%). The results are presented per project type and per employer category to ensure that the results for less represented project types do not disappear in the average of all projects. The percentage survey results received from each province was also correlated with the construction activities in the particular province to establish whether the survey captured a well distributed response from all provinces. This was found to be the case.

Table 6: Employer survey responses received for different project types and employer categories 2008

Project Type	Total No.	30%	18%	7%	14%	16%	12%	2%	1%	% of Total Survey Results
Residential Building	26	12	7	1	2	2	1	0	1	8%
Non-residential Building	77	34	9	9	11	3	10	1	-	23%
Civil Works	134	23	23	8	24	32	21	3	-	40%
Mechanical Works	24	12	3	1	3	4	0	1	-	7%
Electrical Works	53	12	19	3	3	9	7	0	-	16%
Special Works	16	5	0	1	2	3	2	3	-	5%
Not Specified	2	-	-	-	-	1	-	-	1	1%
	332	98	61	23	45	54	41	8	2	Total No.
		Private sector	Public Corporation e.g. ESKOM, ACSA	National Department	Provincial Department	Metropolitan Council	Regional / District Council	Public Private Partnership	Not Specified	
		Employer Category								

Construction commencement milestone dates

Table 7 shows the actual project commencement and completion times achieved for different project types. It is not known whether the reason for a late start was because of contractors who could not produce their guarantees on time, or because of employers who did not have the sites ready to hand over to the contractors. Table 7 shows that only 73% of all residential building projects were completed on time. It is not known if the reason for this is lack of contractor capacity, managerial skills, finances, know-how or perhaps unrealistic construction periods specified by agents or employers.

Table 7: Project start and completion milestone dates 2008

Project Type	Start on time %	Finish on time %
Residential Building	88	73
Non-residential Building	96	86
Civil Works	95	82
Mechanical Works	96	87
Electrical Works	96	92
Special Works	88	88
Overall	95	84

Construction cost overspending

Table 8 shows the construction cost overspending for projects completed in 2008. The percentage overspending (+) was calculated as follows: The sum of the tender values of all projects of a specific project type, and for a specific employer category, was calculated excluding contingencies. In a similar way the sum of the practical completion values of this group of projects was calculated. The total overspending of the group was expressed as a percentage of the total tender value of the particular group of projects. It is important to realize that the percentage overspending is an average for a particular group of projects where there may have been savings on some and overspending on other projects. Therefore, the Table only gives some indication of overspending problems experienced in a particular group of projects. The number of projects involved is also shown in brackets to identify where a large overspending is of no concern because it was for one project only. The national departments had an average 33% overspending on their civil projects and 16% overspending on their non-residential building projects. The private sector experienced 16% overspending on their non-residential projects and 14% overspending on their mechanical projects. There are many factors that may contribute to this overspending such as bad planning, incorrect initial measurement of work, unforeseen conditions on site, and a change in the scope of the works.

Table 8: Project construction cost overspending 2008

Project Type	% Overspending in terms of tender value of total group							
Residential Building	0 (11)	-8 (9)	0 (1)	-	-27 (2)	1 (1)	-	
Non-residential Building	16 (30)	6 (8)	16 (9)	9 (9)	6 (3)	0 (10)	0 (1)	
Civil Works	4 (22)	2 (23)	33 (8)	6 (24)	12 (32)	2 (21)	0 (3)	
Mechanical Works	14 (12)	1 (3)	50 (1)	0 (3)	6 (4)	-	21 (1)	
Electrical Works	4 (12)	2 (16)	0 (3)	-16 (3)	2 (9)	2 (7)	-	
Special Works	-1 (5)	-	270 (1)	0 (2)	9 (3)	0 (2)	0 (3)	
The number in brackets is the number of projects involved	Private sector	Public Corporation e.g. ESKOM, ACSA	National Department	Provincial Department	Metropolitan Council	Regional / District Council	Public Private Partnership	

Customer satisfaction

Table 9 shows the average level of employer satisfaction for different project types.

These are the performance levels of their agents and contractors and the quality of materials used. Bearing in mind that a score of 80% means satisfied, Table 9 shows

that employers were satisfied with the overall performance of their agents (except for special works) and the quality of materials used on site. For all the contractor related indicators the contractors for non-residential building projects received the lowest score throughout, ranging from 66% to 75%. Generally speaking the average satisfaction levels expressed by the employers were high.

Table 9: Customer satisfaction 2008

Project Type	Employers' % Level of Satisfaction with						
Residential Building	82	69	66	72	75	72	80
Non-residential Building	82	82	83	82	80	78	85
Civil Works	82	82	81	83	82	84	86
Mechanical Works	83	82	80	82	81	83	84
Electrical Works	87	85	86	86	87	88	90
Special Works	79	79	79	78	75	78	80
	Overall performance of Consultants	Overall performance of Contractor	Ability of Main Contractor to finish on time	Quality of Completed Work	Main Contractor's Resolution of Defective Work	Work Defect free at Practical Completion	Overall quality of Materials used

CONCLUSIONS

The main findings of the 2009 survey for projects completed in 2008 were as follows.

- Agents were satisfied with the amount of time allowed by employers for planning.
- Only 47% of agents were paid on time within 30 days.
- Only 73% of residential building projects were finished on time.
- National departments experienced 33% overspending on civil projects.
- Employers were, generally speaking, satisfied with the overall performances of their agents and contractors. The contractors' performances on residential building projects received the lowest scores throughout.
- It is of great concern that contractor quality was discarded as being of any importance in 53%, 44% and 57% of tenders allocated for provincial departments, metropolitan councils and regional/district councils respectively.
- There is a strong indication of political intervention in the tender adjudication procedures of many employers.

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