



**RESULTS OF THE 2012 SURVEY OF THE**

**cidb**

**CONSTRUCTION INDUSTRY INDICATORS**

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## 1. 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 necessary as the construction industry plays an indispensable role in the South African economy by 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 South African public at large, and its improved efficiency and effectiveness will enhance quality, productivity, health, safety, environmental outcomes and value for money. In terms of this act, the cidb 'may develop target and performance indicators related to 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 the assistance of 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:

- To provide companies and projects with a simple method of establishing a performance measurement system;
- To provide organisations 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.

(Rethinking Standards in Construction, 2006: 3)

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 recognised as a leading organisation 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, 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 UK KPIs are updated annually each June and published by Construction Excellence ([n.d.]: online).

The Australian construction industry is also busy establishing a KPI measurement process. Furneaux, Hampson, Scuderi & Kajewski, (2010) reviewed the current international approaches, evaluated the weaknesses and suggested a format for reporting KPIs at a national level.

The cidb CIIs are project specific indicators which are different from general economic indicators. The cidb CIIs measure the performance of the South African construction industry at individual project level. For completed projects employer satisfaction is measured for project milestone dates achieved, contractors' performance, agents' (consultants') performance, and the quality of materials used. Contractors' satisfaction is measured by their profitability, the performance of the employers and their agents, the quality of the contract documentation, 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 evaluated in the adjudication of tenders, the type of procurement procedure used, and the contracting strategy adopted. The agents' satisfaction with the time allowed by employers for planning, delays in the payment of professional fees and deviations by employers from their own approved procurement procedures are also measured.

The literature survey shows that it is mainly in the United Kingdom and South Africa where key performance indicators, at project level, are used to monitor the condition of their construction industries. These indicators are used as a tool to improve industry performance. The quality and professionalism of the different role players involved are tested by several of these indicators.

Annual monitoring of the condition of the South African construction industry by using construction indicators is vital to enable government and other role players to evaluate the impact of current interventions for timely and pro-active implementation of revised legislation, strategies and development programs to act as an updated roadmap for the future wellbeing and growth of the industry. This is the purpose of this research. The cidb CIIs described above have been captured since 2003 and results in a series of annual papers (Marx 2011) presenting the outcomes of this continuous survey project. This is a report on the results of the survey undertaken in 2012 for projects completed in 2011.

## 2. METHODOLOGY

The performance indicators used are project related. Therefore, contractors registered with the cidb were contacted to obtain information about their projects completed. A database, with contact particulars of contractors, employers and agents involved in 2998 projects completed in 2011, 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. Although the contact particulars of those directly involved in the projects were requested, there was no control over the respondents' actual involvement or in-depth knowledge of the projects. The content of the questionnaires related to the specific key performance indicators monitored. The perspectives of the respondents were determined for different project types, employer categories and provinces. All questionnaires made use of the scale shown in Table 1 to measure satisfaction levels.

**Table 1** Definition of the % satisfaction levels

Dissatisfied			Neither satisfied nor dissatisfied				Satisfied		
10	20	30	40	50	60	70	80	90	100

## 3. SCOPE

The CIIs of the cidb need to evolve from the lessons learned from previous surveys, and are therefore subject to change and refinement. Furthermore, the CIIs used were only mainline indicators. Questions were not asked to pin-point the exact reasons for all problems experienced. The CIIs considered were 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 2998 completed projects in the database, the contact particulars of 2998 contractors, 2775 employers and 1397 agents were available. Survey forms were received back from 1006 contractors, 498 employers and 418 agents reflecting response rates of 33,6% (41,3%), 17,9% (19,9%) and 29,9% (29,9%) respectively. The percentages in brackets are the response rates for the previous survey. The response rate for the contractors was actually slightly better (+ 2,3%) than indicated as approximately 70 responses were not incorporated in the database as it became clear that these were not received from main contractors as required, but from sub-contractors.

## 4. DISCUSSION OF THE CONTRACTORS' SURVEY RESULTS

### 4.1 Contractor survey response distribution per project type and employer category

Table 2 gives the distribution of the 1006 survey forms received from contractors for projects completed in 2011. The number and percentage of survey forms completed are indicated for different employer categories and project types.

**Table 2** Contractor survey response distribution per project type and employer category 2011

Project Type	Total No. of Projects	36	23	4	14	14	7	2	0	% of Total Survey Results
Residential Building	53	31	2	4	13	2	-	1	-	5
Non-residential Building	193	74	31	14	48	15	3	8	-	19
Civil Works	383	122	40	20	55	85	54	7	0	38
Mechanical Works	79	31	18	4	10	6	5	4	1	8
Electrical Works	263	84	136	-	11	25	3	4	-	26
Special Works	35	16	9	3	2	3	1	1	-	4
Not specified	0	-	-	-	-	-	-	-	-	0
<b>Total No. of Projects</b>	<b>1006</b>	358	236	45	139	136	66	25	1	
<b>Employer Category</b>		Private Sector	Public Corporation e.g. ESKOM, ACSA	National Department	Provincial Department	Metropolitan Council	Regional / District Council	Public Private Partnership	Not specified	

The majority of responses received came from civil works projects (38%), non-residential building projects (19%) and electrical works projects (26%). The results in this report are presented per project type and per client category to ensure that the results for some types of projects do not disappear in the average of all projects.

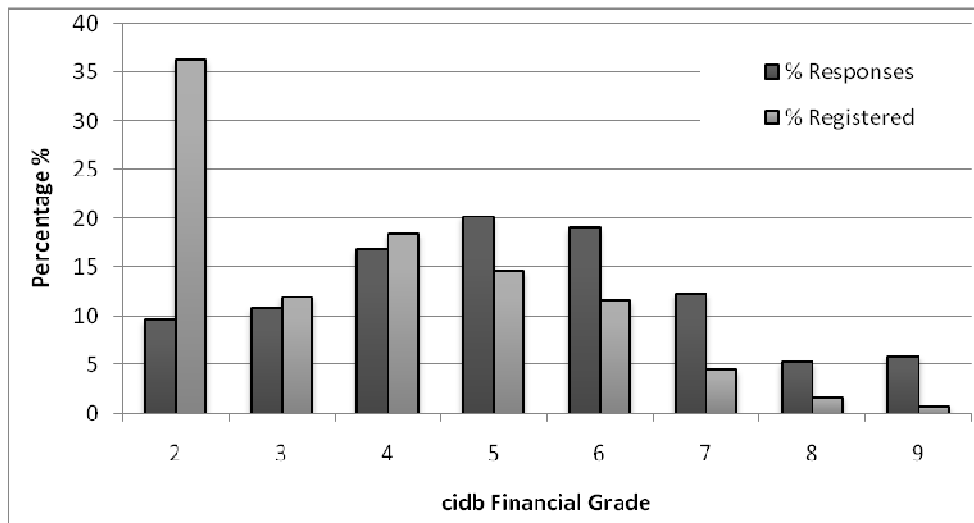
Projects of the private sector (36%), public corporations (23%), provincial departments (14%) and metropolitan councils (14%) were best represented in the survey. The responses received were well distributed between the different project types as well as between the employer categories. The number of responses received in each category should always be considered when evaluating the results.

### 4.2 Contractor survey response distribution per contractor financial grade

The contractors are registered with the cidb in different financial grades, indicating their financial capability to complete projects of certain maximum values. The grading is as follows: Grades 1 to 9 correspond with project values of R0,2 million; R0,65 million; R2 million; R4 million; R6,5 million; R13 million; R40 million; R130 million and no limit respectively. Of all the respondents 10 % did not

indicate their financial grade. Figure 1 shows a comparison between the distribution of the survey forms received from different financially graded contractors and the distribution of the financial grades of contractors registered with the cidb.

Grade 1 (small) contractors were not targeted in this survey due to the fact that most of them do not possess a facsimile machine or have an e-mail address. The response received was well distributed as it follows the distribution of the contractors registered in each financial grade. Figure 1 shows that for the higher financially graded contractors (Grades 5 to 9) the percentage responses received were slightly higher than the percentage of contractors registered in each financial grade. For the lower financially graded contractors (Grades 2 to 4) the opposite was true. It is only the Grade 2 contractors from whom much better participation is required for future similar annual surveys.



**Figure 1** Contractor survey response distribution per contractor financial grade 2011

### 4.3 Contractor profitability per project type

Table 3 indicates the distribution of contractor profitability for different project types and shows that for 3% of all the projects completed the contractors made a loss.

**Table 3** Contractor profitability per project type 2011

Profitability	% of Projects per Project Type						% of all Projects
	Residential Building	Non-residential Building	Civil Works	Mechanical Works	Electrical Works	Special Works	
Loss	-	3	6	-	1	6	3
0 – 5%	28	39	23	11	20	14	25
6 – 10%	49	30	37	22	30	46	33
11 – 15%	13	20	17	27	20	11	19
>15%	10	8	17	40	29	23	20
Project Type	Residential Building	Non-residential Building	Civil Works	Mechanical Works	Electrical Works	Special Works	

The project types, with the highest percentage of projects with profitability of more than 15%, were mechanical works projects (40%), electrical works projects (29%) and special works projects (23%). The results show that residential and non-residential building projects were less profitable than all other project types. This may be due to the complexity of building projects and the large number of parties involved.

Table 4 shows the profitability of contractors per financial grade. It is interesting to note that Grade 2 contractors, who are typically small and less experienced, made a loss on none of their projects. This is better than the loss performance of all other contractors. Furthermore, if the projects on which a good profit of more than 10% was made are combined the Grade 2 contractors made more than 10% profit on 70% of all their projects which is much better than the performance of any of the other higher financially graded groups of contractors.

**Table 4** Profitability of contractors per financial grade 2011

Profitability	% of Projects in each Financial Grade								
	2	3	4	5	6	7	8	9	
Loss	-	3	3	2	5	4	2	12	
0 - 5%	12	13	13	37	27	26	28	31	
6 - 10%	18	36	36	37	37	33	52	23	
11 - 15%	21	23	26	12	18	21	11	13	
>15%	49	25	22	12	13	16	7	21	
Contractor Financial Grade	2	3	4	5	6	7	8	9	

There is thus no relationship between profit and the financial grade of a contractor. There should be more emphasis on developing good small contractors, and not only to achieve a higher financial grade, as small contractors can make just as good a profit as their larger and higher graded counterparts.

#### 4.4 Performance of the employer and the employer's agents

The contractors' satisfaction with the employer and agents (consultants) was tested with regard to their overall performance, the quality of the tender documents and specifications, and the management of variation orders and claims. Table 5 shows the results obtained with the satisfaction levels as defined in Table 1. The contractors' highest dissatisfaction with the overall performance of employers was expressed for national department (9%) and public private partnership (8%) projects. The metropolitan councils had the lowest percentage of projects (69%) for which the contractors expressed their satisfaction with the overall performance of the employers. This is followed with 71% for national department and 72% for public private partnership projects.

Compared to the performance of the employers, the contractors were dissatisfied with the overall performance of the agents for a higher percentage of projects for all employer categories excluding provincial departments ranging from 2 to 15%. The reason why the contractors were less satisfied with the agents than with the employers themselves may be that the agents, on behalf of the employers, had to enforce quality and made sure that over-payments were not made. Agents, working for national departments received a satisfactory performance on only 67% of the projects. This was the lowest score for all employer categories.

**Table 5** Contractors' level of satisfaction with the employers' and agents' performance 2011

Satisfaction Level: % Distribution															
Employer Category	D = Dissatisfied			N = Neither satisfied nor dissatisfied						S = Satisfied					
	D	N	S	D	N	S	D	N	S	D	N	S	D	N	S
Private Sector	3	18	79	6	21	73	3	21	76	4	22	74	6	21	73
Public Corporation	3	19	78	3	26	71	1	22	77	6	21	73	8	21	71
National Department	9	20	71	11	22	67	11	18	71	11	29	60	11	20	69
Provincial Department	6	20	74	4	18	78	4	26	70	15	22	63	16	19	65
Metropolitan Council	2	29	69	3	27	70	4	30	66	3	33	64	4	33	63
Regional / District Council	1	17	82	2	12	86	3	14	83	1	20	79	8	21	71
Public Private Partnership	8	20	72	15	10	75	0	28	72	4	36	60	12	32	56
<b>Satisfied with</b>	Employer Overall			Agent Overall			Documentation / Specifications			Management of VO's			Management of Claims		

Table 5 shows that with the exception of national departments only 0 to 4% of the contractors were dissatisfied with the quality of the contract documentation and specifications. For national department projects this figure was 11%. They expressed their satisfaction with the documentation and satisfaction on only 66% of all metropolitan council projects completed.



The management of variation orders (VO's) and claims seem to be problematic for national and provincial department projects as the contractors expressed their dissatisfaction with 11 to 15% of their projects. The contractors were satisfied with the management of VO's on only 60% of national department and public private partnership projects. For management of claims, contractors were satisfied with only 56% of public private partnership projects and 63% of metropolitan council projects.

To determine whether the contractors' financial grade played any role in the evaluation of the overall performance of the employer bodies and agents, Table 6 was compiled. As the financial grade increases it is interesting to note some growth, although not continuous, in the dissatisfaction of contractors with their employers. For Grade 7 to 9 contractors there was a noticeable reduction in the percentage of projects where the contractors were satisfied with their employers and agents. The reason may be that these higher grade contractors are more sophisticated and expect more from their employers and agents.

**Table 6** Contractors' level of satisfaction with the employer's and agent's overall performance per contractor financial grade 2011

Satisfaction Level: % Distribution						
	D = Dissatisfied			N = Neither satisfied nor dissatisfied		S = Satisfied
Contractor Financial Grade	D	N	S	D	N	S
2	0	17	83	5	19	76
3	1	15	84	2	10	88
4	3	24	73	3	29	68
5	2	12	86	4	15	81
6	4	24	72	2	20	78
7	11	22	67	10	21	69
8	9	26	65	5	25	70
9	10	27	63	15	33	52
<b>Satisfied with</b>	Employer Overall			Agent Overall		

Table 7 shows the contractors' levels of satisfaction with the overall performance of the employer bodies in different provinces. The values in brackets indicate the number of projects on which the distribution of satisfaction levels was based. The reliability of the conclusions reached from the data is lower for those employer bodies in provinces where only a few responses were received and this should always be kept in mind.

**Table 7** Contractors' level of satisfaction with the employers' overall performance per province 2011

Satisfaction Level: % Distribution (The number in brackets is the number of projects involved)																		
Employer Category	D = Dissatisfied			N = Neither satisfied nor dissatisfied			S = Satisfied			D = Dissatisfied			N = Neither satisfied nor dissatisfied			S = Satisfied		
	D	N	S	D	N	S	D	N	S	D	N	S	D	N	S			
Private Sector	0	9 (33)	91	0	22 (18)	78	3	15 (66)	82	2	19 (62)	79	3	14 (35)	83			
Public Corporation	6	18 (17)	76	9	36 (11)	55	6	15 (52)	79	0	26 (46)	74	0	0 (27)	100			
National Department	22	22 (9)	56	0	0 (7)	100	0	25 (8)	75	50	50 (2)	0	0	0 (5)	100			
Provincial Department	0	57 (23)	43	27	27 (11)	46	12	12 (17)	76	4	7 (27)	89	0	0 (20)	100			
Metropolitan Council	0	17 (6)	83	0	29 (7)	71	4	31 (26)	65	0	25 (16)	75	0	20 (10)	80			
Regional / District Council	0	0 (7)	100	20	0 (5)	80	0	20 (5)	80	0	6 (18)	94	0	17 (6)	83			
Public Private Partnership	0	0 (1)	100	0	0 (1)	100	17	17 (6)	66	0	40 (5)	60	-	- (-)	-			
<b>Province</b>	Eastern Cape			Free State			Gauteng			KwaZulu-Natal			Limpopo					

**Table 7** (Continued) Contractors' level of satisfaction with the employers' overall performance per province 2011

Satisfaction Level: % Distribution (The number in brackets is the number of projects involved)																		
Employer Category	D = Dissatisfied			N = Neither satisfied nor dissatisfied			S = Satisfied			D = Dissatisfied			N = Neither satisfied nor dissatisfied			S = Satisfied		
	D	N	S	D	N	S	D	N	S	D	N	S	D	N	S			
Private Sector	4	23 (44)	73	0	21 (24)	79	45	11 (9)	44	3	21 (67)	76						
Public Corporation	0	22 (46)	78	14	43 (7)	43	17	0 (6)	83	0	17 (24)	83						
National Department	0	100 (2)	0	0	0 (2)	100	0	50 (2)	50	12	13 (8)	75						
Provincial Department	6	25 (16)	69	0	10 (10)	90	34	33 (3)	33	0	17 (12)	83						
Metropolitan Council	0	0 (6)	100	0	40 (5)	60	0	25 (4)	75	2	36 (56)	62						
Regional / District Council	0	25 (8)	75	0	100 (1)	0	0	100 (2)	0	0	21 (14)	79						
Public Private Partnership	0	0 (4)	100	100	0 (1)	0	0	0 (1)	100	0	33 (6)	67						
<b>Province</b>	Mpumalanga			North West			Northern Cape			Western Cape								

Sufficient data was available to conclude that the contractors' satisfaction level is low for the provincial departments in the Eastern Cape (43%) and Free State (46%). This is also true of the public corporations in the Free State (55%). Various employer bodies perform well in many provinces.

#### 4.5 Delays in the start of construction

The contractors were asked whether the employer caused any delays preventing them from starting on site after they provided their guarantees. Table 8 shows that national department and public private partnership employers caused delays at 20% of all their projects while public corporations were responsible for delays at 18% of all their projects. These delays are normally related to planning issues such as budget restraints, final approvals, registration of property in the employers' name etc.

**Table 8** Employer responsible for delays preventing contractor access to site 2011

Employer Category	% of Projects	
	Yes	No
Private Sector	9	91
Public Corporation	18	82
National Department	20	80
Provincial Department	14	86
Metropolitan Council	10	90
Regional/District Council	8	92
Public Private Partnership	20	80

#### 4.6 Payment delays

The average number of days delay between certification and receipt of contractor payment of interim and final certificates is shown in Table 9.

**Table 9** Days delay between certification and contractor payment per employer category 2011

Avg. Days Delay	% of Projects per Employer Category							% of all Projects
≤ 14	10	8	11	12	4	8	12	9
14 to 30	39	40	42	32	40	42	40	39
30+ to 60	41	36	20	33	34	36	36	36
60+ to 90	5	9	14	9	15	5	4	8
90+ to 120	2	5	-	11	2	5	8	4
120+	3	2	13	3	5	4	-	4
Employer Category	Private Sector	Public Corporation	National Department	Provincial Department	Metropolitan Council	Regional / District Council	Public Private Partnership	

The different contract documents used for projects had different requirements regarding timeous payment of certificates, but payment within a month was considered to be reasonable. It is of great concern that only 48% of all contractors were paid on time (< 30 days). This figure is slightly better than the 46% obtained from the previous annual survey.

With regard to early payment the provincial departments and metropolitan councils performed the worst, with payments made within 30 days on only 44% of their projects. The best performing client categories with 53% and 52% of project payments made within a month were national departments and public private partnerships respectively. Regional district councils and public private partnerships paid on time on respectively 6 percentage points more and 12 percentage points fewer projects than in the previous annual survey.

The worst performing employers, with really late payments, were the national departments who paid 27% of their contractors only after 60 days or more. This was followed by provincial departments (23%) and metropolitan councils (22%).

Contractors refrain from standing up to their contractual right to be paid on time for fear of losing job opportunities in the future. This creates major cash flow problems for contractors and the cidb should communicate this with client bodies. This payment problem has been known for many years and it seems as if there is a lack in the will and capability of employers to do something about it.

These payment results are also shown in Table 10 as the percentage of projects with timeous payment to contractors (< 30 days) per employer category in different provinces. The results are disturbing as many employer bodies in various provinces pay only a small percentage of their contractors on time. This table can be used to pin-point those employer bodies where urgent improvement is required. However, one has to keep in mind the impact that the small number of projects in some cases has on the reliability of the conclusions reached.

#### **4.7 Performance of materials suppliers**

Contractors were requested to indicate their satisfaction level with the overall performance of the materials suppliers, the ability of the suppliers to keep to their quoted / agreed upon delivery schedules and whether the materials delivered on site complied with the specifications. The results are indicated in Table 11.

The contractors were least satisfied with the overall performance of the suppliers for civil, special and building projects where they were only satisfied with 70%, 74% and 75% of the projects respectively.

**Table 10** Timeous payment (< 30 days) of contractors per province and employer category 2011

Employer Category	% of Projects where Contractor is paid within 30 days (The value in brackets is the number of projects involved)								
	Private Sector	48 (33)	50 (18)	44 (66)	65 (62)	66 (35)	41 (44)	21 (24)	33 (9)
Public Corporation	29 (17)	73 (11)	63 (52)	33 (46)	56 (27)	43 (46)	43 (7)	33 (6)	58 (24)
National Department	44 (9)	86 (7)	63 (8)	50 (2)	0 (5)	50 (2)	50 (2)	100 (2)	50 (8)
Provincial Department	26 (23)	18 (11)	24 (17)	67 (27)	60 (20)	50 (16)	30 (10)	33(3)	58 (12)
Metropolitan Council	50 (6)	71 (7)	15 (26)	63 (16)	80 (10)	50 (6)	40 (5)	25 (4)	41 (56)
Regional / District Council	71 (7)	80 (5)	20 (5)	33 (18)	50 (6)	50 (8)	0 (1)	0 (2)	71 (14)
Public Private Partnership	100 (1)	100 (1)	33 (6)	20 (5)	-	50 (4)	0 (1)	100 (1)	83 (6)
<b>Province</b>	Eastern Cape	Free State	Gauteng	KwaZulu-Natal	Limpopo	Mpumalanga	North West	Northern Cape	Western Cape

Table 11 shows that the problem lies with the suppliers' capability to deliver rather than with the quality of the materials. This is so as the percentage of projects where the contractors were satisfied was larger for material delivered per specification than it was for the suppliers' capability to keep to the agreed upon delivery schedule. Generally speaking, the contractors' level of dissatisfaction was very low for all project types.

**Table 11** Contractors' level of satisfaction with the materials suppliers' performance per project type 2011

Satisfaction Level: % Distribution									
Project Type	D = Dissatisfied N = Neither satisfied nor dissatisfied S = Satisfied								
	D	N	S	D	N	S	D	N	S
	Residential Building	0	25	75	0	23	77	0	15
Non-residential building	0	21	79	1	21	78	0	14	86
Civil Works	1	29	70	2	22	76	1	12	87
Mechanical Works	1	22	77	3	20	77	0	11	89
Electrical Works	4	18	78	4	20	76	1	12	87
Special Works	0	26	74	0	26	74	0	9	91
<b>Satisfied with</b>	Overall performance			Keep to agreed upon delivery schedule			Material delivered as per specification		

The materials suppliers' overall performance was also evaluated in terms of the contractors' financial grade as indicated in Table 12. Grade 7 & 8 contractors were least satisfied with the overall performance of their material suppliers with only 56 and 57% of their projects where they were satisfied. It is likely that these suppliers could not keep up with the possibly larger orders placed. Table 13 shows the materials suppliers' overall performance per province. North West (56%), Northern Cape (59%) and the Free State (63%) provinces had the lowest percentage of projects where the contractors were satisfied with the overall performance of the materials suppliers.

**Table 12** Contractors' level of satisfaction with the materials suppliers' overall performance per contractor financial grade 2011

Satisfaction Level: % Distribution			
Contractor Financial Grade	D = Dissatisfied	N = Neither satisfied nor dissatisfied	S = Satisfied
	D	N	S
2	0	16	84
3	0	29	71
4	2	20	78
5	2	20	78
6	0	22	78
7	6	38	56
8	0	43	57
9	4	25	71

**Table 13** Contractors' level of satisfaction with overall performance of materials suppliers per province 2011

Satisfaction Level: % Distribution			
Province	D = Dissatisfied	N = Neither satisfied nor dissatisfied	S = Satisfied
	D	N	S
Eastern Cape	1	28	71
Free State	2	35	63
Gauteng	1	18	81
KwaZulu-Natal	1	22	77
Limpopo	3	16	81
Mpumalanga	2	18	80
North West	0	44	56
Northern Cape	11	30	59
Western Cape	1	27	72

## 5. DISCUSSION OF THE AGENTS' SURVEY RESULTS

### 5.1 Agent survey response distribution per project type and employer category

Table 14 gives a summary of the 418 survey forms received from agents for projects completed in 2011. 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.

Table 14 shows that the largest group of responses received were from civil works (49%) and non-residential building projects (22%). Projects of the private sector (25%) and metropolitan councils (28%) were best represented in the survey.

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 14** Agent survey response distribution per project type and employer category 2011

Project Type	Total No. of projects	25	13	5	19	28	8	2	0	% of Total Survey Results
Residential Building	26	15	-	3	7	1	-	-	-	6
Non-residential Building	93	38	12	6	31	6	-	-	-	22
Civil Works	205	30	22	8	33	83	22	7	-	49
Mechanical Works	22	4	2	1	2	5	8	-	-	5
Electrical Works	57	12	17	1	4	19	3	1	-	14
Special Works	15	5	1	1	2	5	1	-	-	4
Not Specified	-	-	-	-	-	-	-	-	-	0
<b>Total No. of Projects</b>	<b>418</b>	104	54	20	79	119	34	8	0	
<b>Employer Category</b>		Private Sector	Public Corporation e.g. ESKOM, ACSA	National Department	Provincial Department	Metropolitan Council	Regional / District Council	Public Private Partnership	Not Specified	

### 5.2 Contract documentation

The agents indicated the form of contract used for their projects and if significant amendments were necessary such as mitigation of risk and delegation of responsibility. The results are shown in Table 15.

The JBCC form of contract was most popular for residential (81%) and non-residential (78%) building projects. The GCC form of contract was most popular for civil works (81%) and mechanical works (64%) contracts. For electrical works the GCC (34%) and NEC (28%) were popular forms of contract. Table 15 also shows that it was necessary to significantly amend the contracts to suit particular needs, especially when the FIDIC (51%) form of contract was used.

**Table 15** Type of contract document used for different project types 2011

Project Type	% Contract Document Type usage for each Project Type					Total
	GCC	NEC	JBCC	FIDIC	OTHER	
Residential Building	11	-	81	8	-	100
Non-residential Building	9	3	78	2	8	100
Civil Works	81	2	4	11	2	100
Mechanical Works	64	4	14	18	-	100
Electrical Works	34	28	19	14	5	100
Special Works	55	-	45	-	-	100
<b>Contract Document Type</b>	GCC	NEC	JBCC	FIDIC	OTHER	
<b>% Projects with Contract Document significantly amended</b>	23	25	29	51	7	

### 5.3 Contractor performance issues utilised 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 16 for different employer categories.

**Table 16** Contractor performance issues used in the adjudication of tenders per employer category 2011

Performance Issues	% of Projects in each Employer Category using different Performance Issues						
	Private Sector	Public Corporation e.g. ESKOM, ACSA	National Department	Provincial Department	Metropolitan Council	Regional / District Council	Public Private Partnership
Financial offer	42	24	15	10	7	6	-
Financial offer and preference	13	30	50	49	61	56	-
Financial offer and quality	19	20	5	5	5	9	-
Financial offer, quality and preference	26	26	30	36	27	29	100
<b>Employer Category</b>	Private Sector	Public Corporation e.g. ESKOM, ACSA	National Department	Provincial Department	Metropolitan Council	Regional / District Council	Public Private Partnership

Table 16 shows that even the private sector incorporated preference in 39% of all their projects. No longer are price, or price and quality, the only issues evaluated. A large percentage of projects, where financial offer and preference were the only criteria used to allocate tenders, is shown for various employer categories. It is alarming that financial offer and preference were the only criteria considered for a large percentage of tenders of national departments (50%), provincial departments (49%), metropolitan councils (61%) and regional/district councils (56%). In other words, the quality (i.e. capability, training, performance and track record) of the contractors was considered as being of



no importance to select a contractor to do work for the employer. Furthermore, there has been an increase in this tendency since the previous survey. This political strategy to support and build emerging contractors should be re-evaluated by government.

#### 5.4 Procurement procedures used to solicit tenders

Table 17 shows the procurement procedures used to solicit tenders per employer category. Except for the private sector and public private partnership projects, open tenders were the most popular procurement procedure followed for all employer categories. In the private sector, the most popular procurement procedures were negotiated (26%) and nominated / selected (27%). Public private partnerships mostly made use of qualified procurement procedures.

**Table 17** Procurement procedures used to solicit tenders per employer category 2011

Procurement Procedure	% of Projects in each Employer Category using different Procurement Procedures						
	Private Sector	Public Corporation e.g. ESKOM, ACSA	National Department	Provincial Department	Metropolitan Council	Regional / District Council	Public Private Partnership
Negotiated	26	13	-	1	2	-	-
Nominated / Selected	27	20	5	10	3	12	-
Open	17	48	85	79	87	79	13
Qualified	10	4	-	3	3	-	87
Quotation	19	13	5	6	3	6	-
Two Envelope System	1	2	5	-	1	3	-
Two Stage System	-	-	--	1	1	-	-
<b>Employer Category</b>	Private Sector	Public Corporation e.g. ESKOM, ACSA	National Department	Provincial Department	Metropolitan Council	Regional / District Council	Public Private Partnership

#### 5.5 Contracting strategies adopted

The distribution of contracting strategies adopted by different employer categories is shown in Table 18. The design by employer strategy was most popular for all employer categories.

#### 5.6 Agents' satisfaction with the time allowed for planning

Table 19 shows the agents' satisfaction level with the time allowed by the employer for project planning with the satisfaction levels as defined in Table 1. Agents expressed their satisfaction with the time allowed for planning for only 56% of public corporation projects. This was followed with satisfaction on only 62% of the projects from provincial departments. The results further show that agents were dissatisfied with the time allowed for planning for 10% of all national department projects. If insufficient time is allowed for planning it normally leads to poor contract documentation, many variation orders, additional costs, and time delays that are detrimental to the success of any project.

**Table 18** Contracting strategies adopted per employer category 2011

Contracting Strategy	% Projects with Contracting Strategy per Employer Category					
	Private Sector	Public Corporation	National Department	Provincial Department	Metropolitan Council	Regional/District Council
Design & Build	11	4	-	3	8	12
Develop & Construct	4	4	15	11	7	6
Design by Employer	69	85	60	73	78	79
Management Contract	5	2	10	6	3	-
Construction Management	11	5	15	7	4	3
<b>Employer Category</b>	Private Sector	Public Corporation	National Department	Provincial Department	Metropolitan Council	Regional/District Council

**Table 19** Agents' satisfaction level with time allowed for planning 2011

Satisfaction Level: % Distribution			
Employer Category	D = Dissatisfied	N = Neither satisfied nor dissatisfied	S = Satisfied
	D	N	S
Private Sector	3	28	69
Public Corporation	7	37	56
National Department	10	10	80
Provincial Department	5	33	62
Metropolitan Council	5	18	77
Regional / District Council	3	29	68
Public Private Partnership	0	0	100

### 5.7 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 20 shows the percentage of contracts that were not awarded to the responsive tenderer with the best tender evaluation score per employer category and province. It is important to keep in mind the impact of the number of projects involved on the reliability of the conclusions reached.

In KwaZulu-Natal the tender recommendations were overruled in 33% of tenders awarded in the provincial department and regional district councils and for 20% of metropolitan council tenders. The provincial departments in general performed better than in the previous survey. The national departments performed very well except in the Free State.

The results are in some cases disturbing, bearing in mind that they are not based on the perceptions of aggrieved tenderers, but on the knowledge of the independent agents of the employers. This suggests

that there may be some form of political intervention, manipulation of results or corrupt / fraudulent practices. However, if the tenderer with the best tender score was tied up with too many current commitments and this was not considered during the calculation of the tender points, the tender might have been fairly awarded to someone else. Table 20 shows in which provinces and for which employer categories tender adjudication practices should be investigated.

**Table 20** Contracts not awarded to the tenderer with best tender score per employer category and province 2011

Employer Category	% Contracts not awarded to the responsive tenderer with best tender score (The value in brackets is the number of projects involved)								
	Eastern Cape	Free State	Gauteng	KwaZulu-Natal	Limpopo	Mpumalanga	North West	Northern Cape	Western Cape
Private Sector	0(8)	40 (5)	38 (26)	33 (12)	17 (6)	0 (4)	0 (3)	57 (7)	25 (32)
Public Corporation	18 (11)	0 (3)	22 (9)	18 (11)	0 (7)	0 (3)	0 (6)	0 (1)	33 (3)
National Department	0 (2)	50 (2)	0 (2)	0 (3)	0 (1)	0 (1)	- (-)	0 (2)	0 (7)
Provincial Department	0 (9)	14 (7)	0 (4)	33 (15)	11 (19)	0 (5)	- (-)	0 (3)	13 (16)
Metropolitan Council	0 (6)	13 (8)	11 (18)	20 (15)	0 (6)	20 (5)	25 (4)	10 (10)	5 (44)
Regional / District Council	0 (3)	0 (2)	0 (1)	33(15)	0 (2)	0 (8)	0 (2)	-	0 (1)
Public Private Partnership	-	-	-	0 (1)	-	-	0 (7)	-	-
Province	Eastern Cape	Free State	Gauteng	KwaZulu-Natal	Limpopo	Mpumalanga	North West	Northern Cape	Western Cape

## 5.8 Professional fee payment delays

The average number of days delay between submission of professional fee accounts and receipt of payment is shown in Table 21. The agents' fees were paid within 30 days for only 45% of all projects completed. The worst early paying employers were the regional district councils who only paid 21% of their agents within 30 days. On the other hand national departments were the best early payers who paid 70% of their agents within 30 days. The employers who paid the largest number of their agents only after 60 days were the provincial departments (22%), metropolitan councils (18%) and regional district councils 18%.

Table 22 shows timeous (< 30 days) payment of agent's fees per province and employer category that can be used to more specifically evaluate the performance of employers. The results are quite disturbing, bearing in mind that the employers were in breach of the contracts with their agents. Agents refrain from standing up to their contractual right to be paid on time for fear of losing new project appointments in the future.

**Table 21** Payment delay of agents' fees per employer category 2011

Avg. Days Delay	% of Projects with Payment Delay per Employer Category							% of all Projects
≤ 14	23	5	10	0	3	9	87	10
14 to 30	35	41	60	39	34	12	13	35
30+ to 60	25	42	20	39	45	61	0	38
60+ to 90	11	4	0	14	10	12	0	10
90+ to 120	5	4	5	4	2	6	0	4
120+	1	4	5	4	6	0	0	3
<b>Employer Category</b>	Private Sector	Public Corporation	National Department	Provincial Department	Metropolitan Council	Regional / District Council	Public Private Partnership	

**Table 22** Timeous payment (< 30 days) of agents per employer category and province 2011

Employer Category	% of Projects where the agent is paid within 30 days (The value in brackets is the number of projects involved)								
Private Sector	50 (8)	60 (5)	62 (26)	58 (12)	50 (6)	50 (4)	0 (3)	71 (7)	61 (31)
Public Corporation	55 (11)	67 (3)	22 (9)	27 (11)	71 (7)	33 (3)	67 (6)	0 (1)	67 (3)
National Department	50 (2)	100 (2)	100 (2)	0 (3)	0 (1)	0 (1)	-	100 (2)	100 (7)
Provincial Department	22 (9)	71 (7)	25 (4)	60 (15)	20 (5)	40 (5)	-	33 (3)	63 (16)
Metropolitan Council	50 (6)	25 (8)	42 (19)	20 (15)	33 (6)	0 (5)	50 (4)	70 (10)	37 (46)
Regional / District Council	0 (3)	0 (2)	0 (1)	7 (15)	50 (2)	38 (8)	50 (2)	-	100 (1)
Public Private Partnership	-	-	-	0 (1)	-	-	100 (7)	-	-
<b>Province</b>	Eastern Cape	Free State	Gauteng	KwaZulu-Natal	Limpopo	Mpumalanga	North West	Northern Cape	Western Cape

### 5.9 Agents who tendered for projects

Table 23 shows the percentage of projects per employer category where agents became involved by tendering for work. Agents working for metropolitan councils, regional / district councils and public private partnerships tendered for 73%, 74% and 88% of all their projects respectively. The low tender percentages for provincial departments (27%) indicate that they still procure professional services by means of a roster system.

**Table 23** Agents who tendered for projects per employer category 2011

<b>% of Projects where Agents tendered for work</b>						
18	49	55	27	73	74	88
Private Sector	Public Corporation e.g. ESKOM, ACSA	National Department	Provincial Department	Metropolitan Council	Regional / District Council	Public Private Partnership
<b>Employer Category</b>						

## 6. DISCUSSION OF THE EMPLOYERS' SURVEY RESULTS

### 6.1 Employer survey response distribution per project type and employer category

Table 24 provides a summary of the 498 survey forms received from employers for projects completed in 2011. The number of survey forms completed is indicated for different employer categories and project types.

**Table 24** Employer survey response distribution per project type and employer category 2011

Project Type	Total No. of projects	27	23	4	14	24	5	3	0	% of Total Survey Results
		Private Sector	Public Corporation e.g. ESKOM, ACSA	National Department	Provincial Department	Metropolitan Council	Regional / District Council	Public Private Partnership	Not Specified	
Residential Building	42	26	3	2	4	5	1	1	-	8
Non-residential Building	95	27	14	9	22	17	1	5	-	19
Civil Works	192	34	40	7	31	62	17	1	-	39
Mechanical Works	47	14	16	2	9	5	1	-	-	10
Electrical Works	96	21	36	1	2	29	1	6	-	19
Special Works	26	10	6	-	3	3	2	2	-	5
Not Specified	-	-	-	-	-	-	-	-	-	0
<b>Total No. of Projects</b>	<b>498</b>	132	115	21	71	121	23	15	-	
<b>Employer Category</b>		Private Sector	Public Corporation e.g. ESKOM, ACSA	National Department	Provincial Department	Metropolitan Council	Regional / District Council	Public Private Partnership	Not Specified	

The table shows that the majority of responses were for civil works (39%), non-residential building projects (19%), and electrical works projects (19%). Projects of the private sector (27%), public corporations (23%) and metropolitan councils (24%) were best represented in the survey. 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.

## 6.2 Construction commencement and finish on time

Table 25 shows the percentage of projects with the project commencement and completion dates achieved for different project types and employer categories. It is not known whether the reason for a late start was contractors who could not produce their guarantees on time, or employers who did not have the sites ready to hand over to the contractors. Table 25 shows that 96% of all projects started on time and 87% of all projects finished on time. The finish on time date included any normal extension of time allowed for by the contract. The project type with the lowest percentage completion on time was civil projects with 83%. The public private partnership category was the employer category with the lowest rate for timeous completion (80%). It is not known if the reason for late completion is lack of contractor capacity, managerial skills, finances, know-how or perhaps unrealistic construction periods specified by agents or employers.

**Table 25** Project start and completion on time 2011

Project Type	Start on Time %	Finish on Time %
Residential Building	95	88
Non-residential Building	100	93
Civil Works	95	83
Mechanical Works	98	87
Electrical Works	96	88
Special Works	92	92
<b>Overall</b>	<b>96</b>	<b>87</b>

Employer Category	Start on Time %	Finish on Time %
Private Sector	96	86
Public Corporation	95	89
National Department	100	95
Provincial Department	96	87
Metropolitan Council	98	84
Regional / District Council	91	100
Public Private Partnership	93	80

## 6.3 Employer satisfaction

Table 26 shows the level of employer satisfaction for different project types with the satisfaction levels as defined in Table 1. These are their satisfaction with the performance levels of the agents and contractors and the quality of materials used. The employers were satisfied with their agents' overall performance on 84 to 92% of all projects. Their highest dissatisfaction with their agents was expressed for mechanical works projects where they were dissatisfied with 8% of the projects.

**Table 26** Employers' level of satisfaction per project type 2011

Satisfaction Level: % Distribution																		
Satisfied with	D = Dissatisfied			N = Neither satisfied nor dissatisfied						S = Satisfied								
	D	N	S	D	N	S	D	N	S	D	N	S	D	N	S	D	N	S
Overall performance of Agents	0	8	92	2	9	89	4	12	84	8	3	89	3	8	89	0	11	89
Overall performance of Contractors	0	5	95	0	17	83	5	13	82	6	7	87	0	4	96	0	12	88
Ability of Main Contractor to finish on time	0	7	93	2	20	78	7	14	79	6	13	81	1	7	92	4	8	88
Quality of Completed Work	0	10	90	1	16	83	4	9	87	4	4	92	0	8	92	0	12	88
Main Contractor's Resolution of Defect Work	0	21	79	2	20	78	5	14	81	2	11	87	0	9	91	0	19	81
Work Defect Free at Practical Completion	3	33	64	2	30	68	1	17	82	0	9	91	0	11	89	0	8	92
Overall Quality of Material used	0	5	95	0	12	88	1	10	89	0	4	96	0	1	99	0	4	96
<b>Project Type</b>	Residential building			Non-residential building			Civil Works			Mechanical Works			Electrical Works			Special Works		

The employers were satisfied with their contractors' overall performance with the highest satisfaction levels expressed for residential building projects (95%) and electrical works projects (96%). For mechanical works projects the highest dissatisfaction level of 6% was expressed.

For the ability of the main contractor to finish on time the employers expressed their highest satisfaction level for residential building projects (93%) and electrical work projects (92%) and the highest dissatisfaction level for mechanical works projects (6%).

For the quality of completed work the employers expressed their satisfaction with 92% of the mechanical works projects and their dissatisfaction with 4% of the mechanical and civil works projects.

Electrical works projects received the highest satisfaction (91%) for the main contractors' resolution of defective work. For work defect free at practical completion the lowest satisfaction level was expressed for residential (64%) and non-residential building projects (68%).

Employers were in general very satisfied with the quality of materials used.

Table 27 shows the employers' satisfaction level with the overall performance of the contractors per province. There is an indication of low performance for certain project types in various provinces.

Employers were dissatisfied with the overall performance of their civil works contractors for 10% of the projects in the Free State, 9 % in Limpopo and 7% in Mpumalanga and the Western Cape. For mechanical works projects dissatisfaction was expressed for 6% of the projects in KwaZulu-Natal and for 7% of the projects in the Western Cape.

**Table 27** Employers' level of satisfaction with the overall performance of contractors per province 2011

Satisfaction Level: % Distribution															
Project Type	D = Dissatisfied N = Neither satisfied nor dissatisfied S = Satisfied (The value in brackets is the number of projects involved)														
	D	N	S	D	N	S	D	N	S	D	N	S	D	N	S
Residential Building	0	0 (2)	100	0	0 (2)	100	0	0 (7)	100	0	0 (6)	100	0	0 (2)	100
Non-residential Building	0	20 (15)	80	0	0 (6)	100	0	11 (19)	89	0	29 (17)	71	0	20 (10)	80
Civil Works	0	11 (18)	89	10	20 (10)	70	4	7 (27)	89	4	21 (24)	75	9	9 (22)	82
Mechanical Works	0	0 (1)	100	0	0 (1)	100	0	25 (4)	75	6	0 (16)	94	0	0 (1)	100
Electrical Works	0	0 (5)	100	0	0 (6)	100	0	4 (27)	96	0	6 (17)	94	0	8 (12)	92
Special Works	0	0 (2)	100	0	0 (1)	100	0	25 (4)	75	0	0 (4)	100	0	0 (2)	100
<b>Province</b>	Eastern Cape			Free State			Gauteng			KwaZulu-Natal			Limpopo		



**Table 27** (Continued) Employers' level of satisfaction with the overall performance of contractors per province 2011

Satisfaction Level: % Distribution (The value in brackets is the number of projects involved)												
Employer Category	D = Dissatisfied			N = Neither satisfied nor dissatisfied			S = Satisfied					
	D	N	S	D	N	S	D	N	S	D	N	S
Residential Building	0	25 (4)	75	0	0 (2)	100	0	0 (1)	100	0	6 (16)	94
Non-residential Building	-	- -	-	0	0 (1)	100	0	25 (4)	75	0	13 (23)	87
Civil Works	7	7 (15)	86	0	0 (10)	100	0	29 (7)	71	7	13 (59)	80
Mechanical Works	0	17 (6)	83	50	50 (2)	0	0	0 (2)	100	7	0 (14)	93
Electrical Works	0	0 (9)	100	0	0 (6)	100	0	0 (1)	100	0	8 (12)	92
Special Works	0	0 (4)	100	-	- -	-	0	100 (1)	0	0	13 (8)	87
<b>Province</b>	Mpumalanga			North West			Northern Cape			Western Cape		

#### 6.4 Employers' own capacity

Table 28 shows the percentage of contracts per employer category where agents were not appointed. All client bodies rely heavily on the support of agents. This indicates that there is nearly no departmental capacity in among others the engineering, architectural and quantity surveyor fields of work. Furthermore, it is quite likely that the small percentage of projects they handled themselves were projects such as large refurbishment contracts where technical and professional expertise was not required. It is of great concern that role players in the construction industry have to communicate with officials in government departments who have no or very little understanding of the contractual procedures and technical complexities inherent to construction projects.

**Table 28** Employer's own capacity per employer category 2011

% of Projects where Agents were not appointed						
7	11	10	13	10	17	13
Private Sector	Public Corporation e.g. ESKOM, ACSA	National Department	Provincial Department	Metropolitan Council	Regional / District Council	Public Private Partnership
<b>Employer Category</b>						

## 7. CONCLUSIONS AND RECOMMENDATIONS

### 7.1 Conclusions

The main findings of the 2012 survey for projects completed in 2011 were as follows:

- 1) Contractors made a loss on 3% of all projects completed.
- 2) Mechanical (40%) and electrical (29%) works projects showed the highest percentage of projects with contractor profit larger than 15%.
- 3) Residential and non-residential building projects were least profitable for contractors.
- 4) There was no relationship between profit and the financial grade of contractors, as small contractors made large profit on many more projects than the higher graded contractors.
- 5) The contractors were dissatisfied with the overall performance of their employers for 9% of national department projects 8% of public private partnership projects and 6% of provincial department projects. Metropolitan councils had the lowest percentage of projects (69%) completed where the contractors expressed their satisfaction with the overall performance of the employer.
- 6) The contractors were dissatisfied with the overall performance of the agents for 11% of national department projects and 15% of public private partnership projects.
- 7) Higher financially graded contractors expressed larger dissatisfaction with the overall performance of their employers.
- 8) Contractors expressed their dissatisfaction with the quality of the documentation and specifications for 11% of national department projects completed. Contractors were only satisfied with the documentation for 66% of the metropolitan projects.
- 9) The management of variation orders (VO's) seemed to be problematic for national and provincial department, metropolitan council and public private partnership projects as the contractors expressed their satisfaction with only 60 to 64% of these projects. Projects where the contractors expressed their highest dissatisfaction with the management of VO's were for national department projects (11%) and provincial department projects (15%).
- 10) For management of claims, contractors were satisfied with only 56 to 69% of national and provincial department, metropolitan council and public private partnership projects.
- 11) Only 48% of all contractors were paid on time (within 30 days). This performance was slightly better than the 46% result of the previous survey.
- 12) With regard to early payment the metropolitan councils and provincial departments performed the worst, with payments made within 30 days on only 44% of their projects.

- 13) The worst very late payer were the national departments who paid 27% of their contractors only after 60 days or more.
- 14) The contractors level of dissatisfied with the overall performance of the materials suppliers were very low for all project types.
- 15) It is of great concern that contractor quality was discarded as being of any importance for a large percentage of tenders allocated to contractors by national departments (50%), provincial departments (49%), metropolitan councils (61%) and regional/district councils (56%).
- 16) Agents were satisfied with the amount of time allowed for planning for only 56% of public corporation projects and 62% of provincial department projects. The largest percentage of projects for which they expressed their dissatisfaction was 10% for national departments.
- 17) There was a strong indication of some form of political intervention, manipulation of results or corrupt / fraudulent practices in the tender adjudication procedures of some employer bodies and in particular in KwaZulu-Natal.
- 18) Only 45% of agents were paid on time within 30 days. The regional district councils were the worst on time payers (21%). Provincial departments paid 22% of their agents only after more than two months.
- 19) Agents working for metropolitan and regional / district councils tendered for 73% and 74% of all their projects respectively. Public corporation, and provincial and national departments made more use of a roster system to procurement professional services.
- 20) Employers indicated that 96% of their projects started on time and 87% finished on time.
- 21) Employers were satisfied with the overall performances of their agents for 84% to 92% of the projects completed. Dissatisfaction was expressed for 8% of the mechanical projects.
- 22) Employers were satisfied with the overall performance of the contractors for 82% to 96% of the projects completed. Dissatisfaction was expressed for 6% of mechanical works projects.
- 23) The employers were dissatisfied with the ability of mechanical and civil works contractors to finish on time for 6 % and 7% of their projects respectively and with the quality of the completed work for 4% of civil works projects.
- 24) Employers were generally satisfied with the quality of materials used for all project types.
- 25) Employer bodies have very little in-house capacity.

## **7.2 Recommendations**

The following recommendations stem from this research:

- 1) Government should address the problems leading to late payment of contractors and agents.

- 2) The results suggest that corrupt / fraudulent tender allocations occur in various government departments in various provinces that need urgent investigation.
- 3) The own capacity of government departments should be grown by appointing skilled and professionally qualified engineers, architects and quantity surveyors in key positions.
- 4) There should be more emphasis on developing good small contractors, and not only to achieve a higher financial grade, as small contractors can make just as good a profit as their larger and higher graded counterparts.
- 5) This research should be continued annually to be able to track trends over time.
- 6) While focussing on the implications of these findings for the South African context, other countries can also derive information from this report which can assist them in implementing a similar construction industry performance measuring system.

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