

DII-2015 CONFERENCE

Performance Evaluation of Contractor Development Programmes in South Africa

Abstract

Purpose: Contractor Development Programmes (CDPs) are aimed at creating an enabling environment for the survival and sustainability of Small, Medium and Micro Enterprises (SMMEs) contractors. Albeit, literature informs that the opinions of beneficiaries of these CDPs have not been adequately evaluated to assess the impact of these CDPs. The purpose of this study was to establish the extent to which these CDPs have helped to improve contractors' management skills and also the extent to which the CDPs have ensured contractors' upgrade in CIDB registration status.

Design/Methodology: A questionnaire survey, made up of close-ended as well as open-ended questions were administered to the respondents to establish their views on the achievements of the CDPs, the statistical programme SPSS was used to analyse the data, Cronbach Alpha Coefficient was used to test the reliability of the data collected. And the correlation between the CDPs and their intended outcomes were analysed using the T-test.

Findings: The results from the research showed that the CDPs were achieving their objectives of improving of management skills and ensuring contractor upgrade in CIDB registration status. The important observation was that continuous contractor mentorship (CCM) must be made an integral part of every successful CDP.

Originality/value: This study has revealed that to improve the benefits of CDPs, all implementing stakeholders must introduce CCM into their programmes instead of the once of mentorship programmes that currently exist.

Research limitations/implications: The research focused on contractors as a whole and did not separate them into their fields of specialities. The questionnaire survey was conducted in only Gauteng Province of South Africa and not the entire country.

Practical implications: The study will assist in guiding CDP stakeholders of the need to modify the programmes to meet the beneficiaries' objectives.

Keywords: CDPs, Improvement, Mentorship, Performance, Upgrade.

1. Introduction

Contractor Development Programmes (CDPs) have been seen as the panacea needed to assist Small, Medium and Micro Enterprises (SMMEs) to develop their capabilities to the standard of large enterprises. The CDP in South Africa can be traced back to 1995 when the National Department of Public Works (NDPW) introduced programmes aimed at assisting contracting organisations owned by Previously Disadvantaged Individuals (PDI) develop their expertise and managerial skills so that they can compete with established construction firms (NDPW, 2004:3).

Subsequent to this initial programme, most provincial governments established CDPs with the same objectives as that of the NDPW. The modelling, configuration and the execution of some of these programmes have been widely researched (CIDB, 2011:1-35), South African Construction Excellence Model (SACEM) (Dlungwana, et al, 2002:1-8) and the Integrated Emerging Contractor Development Model (IECDM) (Hauptfleisch, et al, 2007:1-13).

Even though there are some positive outcomes achieved by some of these CDPs in the past as postulated by McCutcheon and Parkins (2003), Havemann (2001), Söderbaum (2001) and Mojapelo, et al (2001), there still appears not to be enough literature on the effectiveness of these CDPs and whether they are beneficial to the end users. As Jacquet (2002:7) observed: *“The greatest challenge that exist today in South Africa lies at the fact that no data is available on how effective interventions are, whether they are achieving successes, and which sector require most assistance”*.

The Construction Industry Development Board (CIDB, 2011) concurs with this assertion by recommending that the CPDs must be evaluated to seek “the perceptions of the programme beneficiaries on the direct effects of the programme in addressing their needs” (CIDB, 2011:84).

The participation of SMMEs in the construction industry is significant and their contribution to the industry is clear and cannot be overlooked especially when considering the importance of the construction industry to most national economies. In Sri Lanka, for example, the construction industry contributed almost 8 percent of the Gross Domestic Product (GDP) and was 7th among 13 major sectors contributing to the country’s GDP (Chamber of Construction Industry Sri Lanka, 2012:2). In South Africa, the construction industry contributed almost 4 percent to the GDP in 2012 (Industry Insight, 2012:17).

For most parts of the world, the construction industry is very critical. In India, the construction industry is the second largest employer after agriculture. The industry employs about 18 million people directly and 14 million people indirectly (IHG Global Insight, 2009:7). In Palestine, the construction industry contributed about 26 percent to the country’s economy in 2000 (Mahamid, 2011:1).

Having recognised the SMME construction businesses' potentials to contribute to national economies, it is worth noted that the various initiatives aimed at improving contractors' performance in South Africa seemed to have failed to ameliorate contractors' ability to run successful business. Greyling (2012:43) lamented that most SMME contractors do not have enough understanding of the basic contracts being used in the country. Coupled with the lack of understanding of basic contracts, most SMME contractors lack the knowledge of tendering and procurement and as a result they forfeit an average of 7% of their profit margin due to wrong costing and pricing calculations (Greyling, 2012:7). Furthermore, construction clients are generally dissatisfied with the quality of work delivered by SMME contractors (Mbachu and Nkado, 2006 and Smallwood, 2010:941). The CIDB (2011:4) reported that 10% of Department of Human Settlement's budget for 2009/10 was used to repair houses due to poor quality of work from SMME contractors.

There are numerous literature on the development and implementation of CDPs and models in the country (CIDB, 2011:1-35; Dlungwana, et al, 2002:1-8; Hauptfleisch, et al, 2007:1-13). Despite these numerous studies, there appeared to be limited literature on how the beneficiaries of these programmes perceive them. It is therefore warranted that research be conducted to ascertain the perception of the beneficiary contractors on whether the CDPs assisted in ameliorating contractors' management skills and whether the CDPs have translated into an upgrade in CIDB grading.

2. Background

The concept of CDP started around 1969 when the ILO initiated World Employment Programme (WEP). The WEP then transformed into small contractor development programmes in Sub-Saharan- Africa in the 1970s due to the lack of local, indigenous contractors to enforce the policy and overriding presence of large foreign contractors (Croswell and McCutcheon, 2001). The small contractor development programmes have been successful in some sub-Saharan such as Ghana, Kenya, Lesotho and Malawi (Larcher, 1998; Ofori, 2002; Eyiah, 2004). Based on the small contractor development programmes, the National Department of Public Works (NDPW) of South Africa in 1995 introduced programmes aimed at assisting contracting organisations owned by Previously Disadvantaged Individuals (PDI) to develop their technical and managerial skills to enable them compete with established construction firms (NDPW, 2004:3).

Historically, most countries have developed their local contractors (Larcher, 1998; Croswell and McCutcheon, 2001; Verwey, and Havemann, 2001; Ofori, 2012) to withstand challenges and adversities caused to them by foreign construction companies and for South Africa, the marginalisation caused by historical events.

It should be remarked that the challenges facing SMME contractors in South Africa are not only historic but also from current challenges such as globalisation, demographic changes, and demand for green and sustainable building, technical advancement and threats from emerging economies (DBIS, 2013:7). Therefore it is prudent that all contractor development

stakeholders keep track of the charges and requirements of the industry to enable them to be abreast with all aspects of the sector.

CDPs are capable of influencing contractors' human resource development; materials development; engineering development; company growth; development of documentation, routines and working environment; institution building and evolution of working environment (Ofori, 2012:8). Croswell and McCutcheon (2001:365-379) observed that successful CDP should have certain approaches which include inter alia;

- continuity of contracting opportunities;
- training and ongoing mentoring;
- high level support and
- institutional support.

Croswell and McCutcheon (2001: 365-379) further recommended that a successful programme be structured as a series of consecutive contracts, during which the fundamentally-trained small contractor is progressively mentored until he or she finally becomes able to act independently, that is having the entrepreneurial approach towards marketing for work and tendering successfully to ensure their sustainability.

The South African CDPs came into being at the roots of a constitutional requirement as set out in section 217 (1 - 3) of the Constitution of the Republic of South Africa, 1996 (Act 108 of 1996), which requires that any contract for the supply of goods and services to every state, provincial and local government organ or whatever other institution must be conducted in a system which is fair, just, transparent, competitive and cost-effective. The constitution does not prohibit the organs of state or institutions referred to in the above sub-section from implementing a procurement policy providing for (a) categories of preference in the allocation of contracts (b) the protection or advancement of persons, or categories of persons, disadvantaged by unfair discrimination and it also sets aside the framework within which the policies mentioned above may be implemented to be dictated by the national legislation (CIDB, 2011:15-16).

CIDB (2011:76-78) identified the best practices for as successfully CDP implementation as the implementing client knowing the rationale for the programme. Furthermore, a successful CDP must have political and administrative backing and the size of the programme should be determined by the implementing agents. The programmes should also have clear entry and exit points and commitment of funds from management and political bodies where applicable.

The selections of contractors into the CDPs and the procurement strategies of the programmes should be transparent, open, cost-effective and fair. Finally, the documentation for the CDP implementation should be simplified to conform to the CIDB Standards for Uniformity. Literature informed that the common elements for a successfully CDP implementations include the integration of classroom work, field work and mentoring as depicted by Figure 1.

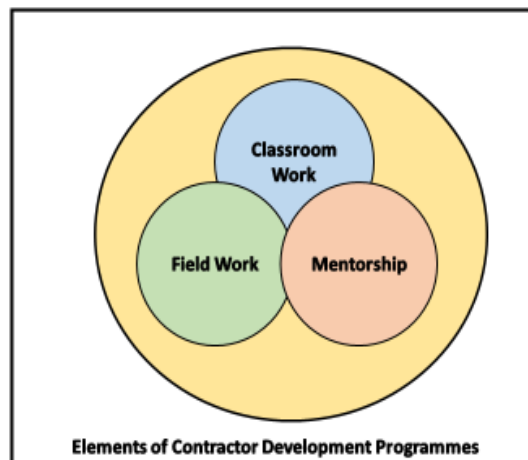


Figure 1: Elements of Successful CDP (Author's own design)

3. Method

The research method employed to achieve the objectives of the study was self-administered questionnaire sent to the respondents by hand and by email.

The survey was limited to mainly contracting firms registered with the CIDB in categories 1 to 7 who fall in the description of small, medium and macro enterprise as they were the targets of the CDPs. The list for the survey sample was established from the construction, education and training authorities (CETA) database in Johannesburg.

In addition the department of National Public Works offices in Pretoria was contacted for contact details of contracting firms who had undergone their contractor development programme under the Expanded Public Works Programme (EPWP).

Other respondents were obtained through links with ESKOM's training academy, Khuthaza, Gauteng Department of Transport's Maintenance section and CIDB's contractors' registration register. The researchers' network links in the construction industry were also utilised to reach out to more potential respondents.

Questionnaires were delivered to respondents' offices in person and in most cases the researcher waited for the questionnaires to be completed and handed back to the researcher. This approach was taken in order to increase the response rate to the questionnaires. However, a few of the questionnaires were emailed to respondents and were returned via electronic mail as well.

A total of one hundred and twenty eight (128) questionnaires were distributed to respondents and one hundred and four (104) questionnaires were received from the respondents translating to a response rate of 81%. According to Baruch and Holtom (2008), Nulty (2008) and Fincham (2008) a response rate of 81% is acceptable for a survey.

Cronbach's Alpha Coefficient was used as a measure of the internal consistency index and an alpha of 0.956 was recorded which implied that the research instrument was 96% reliable. The good thing about an internal consistency index of reliability is that it is assessed after only one test administration and consequently evades the problems associated with testing over multiple time periods (Miller, 1986: 2).

Rating scale was used to measure qualitative variables, such as beliefs, positions, perceptions and many other behavioural variables.

The rating average was computed as follows:

$$\frac{X_1W_1 + X_2W_2 + X_3W_3 \dots\dots\dots X_nW_n}{\text{Total}}$$

Total

Where: W = weight of answer choice;

X = response count for answer choice.

Finally, the study also employed a two-sample t-test to establish the correlation between the inputs of the CDPs and their intended outputs. P-values were used to measure the discrepancy of the fitness of the null hypothesis. A p-value <0.05 indicates the difference was statistically significant. The data was analysed using SPSS and the outcomes were presented as tables and figures to address the research objectives. The research objectives were to:

- Investigate the extent to which the CDPs have helped in improving contractors' management skills and;
- Investigate the extent to which the CDPs have ensured contractors' upgrade in CIDB registration status.

4. Findings and Discussion

4.1 Implementation of the CDPs

The respondents were requested to rate how the CDPs were implemented and whether they thought the CDPs were achieving their intended goals. The results from the survey indicated a weighted mean of 3.30 overall on the implementation of CDPs (Table 1). This value was below the 3.5 rating which leans more to the 'strongly agree' rating. 99% of the respondents either 'agreed' or 'strongly agreed' to contractor development programmes being implemented properly and to their satisfaction. The respondents rated highly at 3.56 the statement that 'the trainers delivered and explained the training clearly'. The least rated statement at 3.14 was that there was a single point of contact and the statement that 'the training met their set

objectives' was rated to at 3.17 which leans more towards disagreed than agreed. This rating therefore contradicts the overall finding that the respondents were satisfied with the implementation process. It was observed that the three attributes of CDPs namely, Classroom work, Site work and Continuous mentorship scored ratings of 3.43, 3.32 and 3.35 respectively, these ratings placed them between strongly agreed and agreed. The proposals made by most of the respondents in the open ended questions in the questionnaire for continuous mentoring instead of the once off mentoring seemed to indicate that mentoring was lacking in the CDPs they underwent and this was supported by the rating of 3.21 achieved by the statement 'the mentoring processes were helpful'.

Table 1 - Implementation of contractor development programmes

ID	Implementation of CDP	Strongly Agree (4)	Agree (3)	Disagree (2)	Strongly disagree (1)	Not Sure (0)	TOTAL (%)	Weighted average rating
1	The trainers delivered and explained the training clearly?	57	42	1	-	-	100	3.56
2	The time allowed for the classroom work was appropriate?	46	52	-	1	-	100	3.43
3	The site work was adequate?	32	68	-	-	-	100	3.32
4	The mentoring processes were helpful?	24	74	1	1	-	100	3.21
5	Continuous mentorship will be very helpful to the successful CDP implementation?	37	61	2	-	-	100	3.35
6	The materials given at the training were effective and helpful?	33	66	-	1	-	100	3.31
7	There was a single point of contact for communication between trainers and trainees?	16	82	2	-	-	100	3.14
8	The training was scheduled and communicated to clearly?	30	68	1	1	-	100	3.27
9	The training was executed according to the predetermine schedule?	26	74	-	-	-	100	3.26
10	The training met their set objectives?	18	81	1	-	-	100	3.17
	Mean percentage	31.90	66.80	0.90	0.40	-	100	3.30

4.2 Improvement of management skills of the CDPs

One of the objectives of the study was to investigate the extent to which the CDPs have assisted in improving contractors' management skills. A weighted average rating of 3.38 was achieved for the CDPs improvement of contractors' managerial skills. As can be seen in Table 2, the results showed that 90% of the respondents either agreed or strongly agreed to the assertion that the training improved their management skills. The weighted average rating was determined to be 3.38 indicating a leaning towards agreeing as opposed to strongly agree. 76% of the respondents indicated that the training had given them more confidence in management skills and rated this statement at 3.75 entailing a strongly agreed. However respondents did not think that the training had necessarily enabled them to complete projects as that statement achieved a rating of 3.27 which leans more towards disagree. The rating of 3.33 for 'the training has improved my knowledge on estimating and tendering' placed the statement closer to agree than strongly agreed.

Table 2 - Improved Management Skills

ID	Improved Management Skills	Strongly Agree (4)	Agree (3)	Disagree (2)	Strongly disagree (1)	Not Sure (0)	TOTAL %tage	Weighted average rating
1	The training has given me more confidence in my managerial skills?	76	23	1	-	-	100	3.75
2	The training has improved my knowledge on estimating and tendering?	35	64	-	1	-	100	3.33
3	The training has broadened my knowledge on project planning?	40	59	-	1	-	100	3.38
4	The training has enhanced my knowledge on financial planning?	50	49	1	-	-	100	3.49
5	The training has enhanced my confidence in contract laws and claims?	32	66	1	1	-	100	3.29
6	The training has improved my ability to market my services to clients?	31	67	1	1	-	100	3.28
7	The training has enhanced my knowledge of effective quality control?	33	65	2	-	-	100	3.31
8	The training has enabled me to complete projects within the contract period?	29	69	2	-	-	100	3.27

9	The training has assisted me to complete projects within project budget?	36	62	1	1	-	100	3.33
Mean percentage		40.22	58.33	1.00	0.56	-	100	3.38

4.3 Contractor upgrades

As depicted in Figure 2, 8% of the companies represented by the respondents were registered in Grade 1 before the CDP, but this changed to 1% after the CDP indicating a drop in numbers and hence suggesting an upgrade. This was also the case for those that had indicated that they had been registered in Grade 2. 50% of the respondents indicated that they had been registered in Grade 2 before CDP, but this statistic changed to 10% after training completion, 31% had Grade 3 before CDP, but this figure changed to 46% after CDP. Grade 4 companies were at 7% before CDP, but improved to 24% on completion from CDP, again, there were 2% of Grade 5 companies before CDP but this figure increased to 13% after CDP, Grade 6 had 1% before CDP, but improved to 3% after training completion, Grade 7 companies made up of 1% before CDP, and this too changed to 2% and finally 1% of the companies were able to attain Grade 8 after graduation from CDPs. The movement in the percentage registrations namely from high to low percentages in the lower categories and low to high percentage in the higher categories seemed to indicate an improvement in registrations after undergoing the CDP.

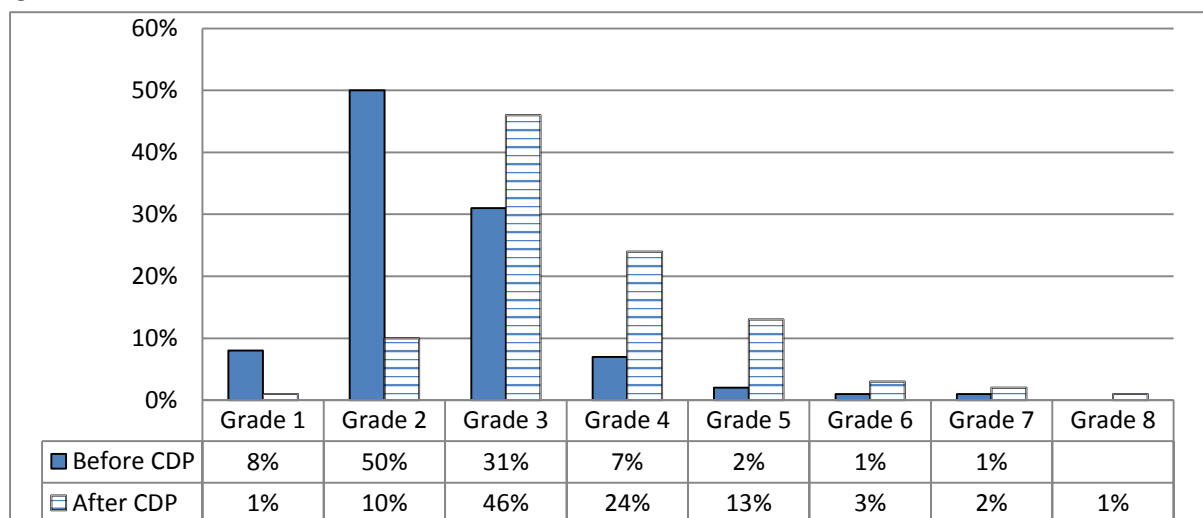


Figure 2 - CIDB grading before and after CDP

5. Summary and Recommendation

The findings of the study suggested the beneficiaries agreed that the CDPs were implemented properly, however their request for continuous mentorship programmes are supported by literature and are an indication that the CDPs requires some improvement. There was also the sentiments that the CDPs had assisted the beneficiaries to improve on their management skills, contrary to this, the findings on estimation, tendering, claims and contract laws scored average rating points. And finally, it is believed that the CDPs had helped the companies achieve higher CIDB grading.

The general impression was that the beneficiaries were satisfied with the CDPs and regarded them as being useful to their sustainability and upgrade, however, there were certain aspects or gaps such as continuous contractor mentorship during the CDPs that they suggested the implementing agencies needed to attend to in order to ensure the successful implementation of the CDPs.

It is recommended that:

- CDPs must have continuous mentorship programmes to progressively mentor contractors until they are able to act independently.
- Cost of contractor mentorship be made free or subsidised.
- CDPs should have organised intutional structures which are appropriately staffed to deliver the programmes.
- CDPs should have a well-defined training and development models with concise syllabus structure.
- CDPs should have well-defined entry and exist levels enable the implementing bodies evaluate learners performance.
- Implementing stakeholders should observe mentorship as continuous process and just a once off process.
- Mentors implementing these programmes must meet the minimum qualifications as prescribed by The South African Council for the Project and Construction Management Professions (SACPCMP).

6. Conclusion

The study revealed that to ensure successful CDPs there are some best practices to follow, most of which were recognised and followed by most of the CDPs reviewed. It was observed however that, one of the three main successful attributes of CDP which is mentorship is either not implemented or not taken serious in the CDPs reviewed. It was therefore recommended that Continuous Contractor Mentorship (CCM) be made mandatory in all CDPs to ensure their successful implementation to enable them improve contractors' management skills and also ensure their upgrade in CIDB registration status.

References

Baruch, Y. and Holtom, B.C. (2008). Survey response rate levels and trends in organizational research. *Human Relations*, 61 (8): 1139–1160. Available at <http://hum.sagepub.com> (Accessed 20 February 2014).

Chamber of Construction Industry Sri Lanka (2012). *The construction industry of Sri Lanka*. Available from: www.ccisrilanka.com. (Accessed 5 July2012).

Construction Industry Development Board (CIDB). (2011). *Review of the contractor development programmes: Towards an NCDP monitoring and evaluation system*. Pretoria: CIDB. 93.

Croswell, J. and McCutcheon, R. (2001). Small contractor development and employment – A brief survey of Sub-Saharan experience in relation to civil construction. Proceedings of First International Conference on Employment Creation in Development, 2-5 April, Johannesburg, South Africa.

Department for Business, Innovation and Skills (DBIS). (2013). UK Construction: an economic analysis of the sector. Available from <https://www.gov.uk/.../bis-13-958-uk-construction-an-economic-analysis.pdf>, (Accessed 4 February 2014).

Dlungwana, W. S., Nxumalo, X. H., Huysteen, S. V., Rwelamila, P. D. And Noyama, C. (2002), The Development and Implementation of the South African Construction Excellence Model (SACEM) Proceedings, International Conference on Construction in the 21st Century (CITC2002), "Challenges and opportunities in Management and Technology" 25-26 April, 2002, Miami, Florida, USA

Eyiah, A. (2004). Regulation and small contractor development: A case of Ghana. Centre on Regulation and Competition working paper series, University of Manchester. 2-22.

Fincham, J. E. (2008). Response rates and responsiveness for surveys, standards, and the journal. *American Journal of Pharmaceutical Education*, 72(2):43.

Greyling, E. (2012). Capacity Building Programmes, Contractor Development and Empowerment, Building a capacity for sustainable delivery, 1-59.

Hauptfleisch, D., Lazarus, S., Knoetze, T., and Liebenberg, S. (2007). An integrated emerging contractor development model for the construction industry: Practical Implementation and Statistical Quantification, 1-3.

Havemann, G. and van Gass, C., (2001). WORK2001 First International Conference on Employment Creation in Development, University of the Witwatersrand. Johannesburg

IHS Global Insight (2009). India Construction: Importance of infrastructure construction in India.

Industry Insight (2011). State of the South African Construction Industry, 2nd Quarter 2011. Available from http://industryinsight.co.za/reports/industry_insight_2nd_quarter_2012.pdf, (Accessed 12 October 2013).

Jacquet, A. (2002), "Sustainable contractor development through coordinated and focused interventions". Paper presented at the build environment profession convention, 112.

Larcher, P. (1998). Privatizing road maintenance in developing countries. *International Journal of Public Sector Management*, 11 (2/3): 116-129.

Mahamid, I. (2011). Causes of Contractors' Failure: Contractors' View. Proceedings of the 2nd International Conference on Construction and Project Management, IPEDR, 15, IACSIT Press, Singapore.

Mbachu, J. and Nkado, R. (2006). Conceptual framework for assessment of client needs and satisfaction in the building development process. *Construction Management and Economics*, 24, 31–44. Taylor & Francis.

McCutcheon, R.T. and Parkins, F.L.M.T. (2002). Capacity building in the transport and development engineering at WITS University. *Innovative Research and Education at the Research Centre for Employment Creation in Construction. Towards Building Capacity and Accelerating Delivery*, Proceedings of the 21st Annual South African Transport Conference, 15 - 18 July 2002 in South Africa.

Miller, M. (1986). Reliability and Validity. *Graduate Research Methods*. Available from: http://www.michaeljmillerphd.com/res500_lecturenotes/reliability_and_validity.pdf (Accessed 16 October 2014).

Mojapelo, J. and Rakale, T. Gertzen D., (2001). Meeting the Transport Challenges in Southern Africa. Conference proceedings of a conference 16 – 20 July held in Johannesburg:

National Department of Public Works (NDPW). (2004). Contractor incubator programme: Plan. Pretoria: NDPW.

Nulty, D. D. (2008). The adequacy of response rates to online and paper surveys: What can be done? *Assessment and Evaluation in Higher Education*, 33 (3), 301–314.

Ofori, G. (2002). Challenges of Construction Industries in Developing Countries: Lessons from Various Countries.

Ofori, G. (2012), Developing the construction industry in Ghana: The case for a central agency.

Smallwood, J. J. (2010). The image of contractors: a South African case study. In: Egbu, C. (Ed) Proceedings of the 26th Annual ARCOM Conference, 6-8 September 2010, Leeds, UK, Association of Researchers in Construction Management, 939-946.

Söderbaum, F. (2001). Institutional Aspects of the Maputo Development Corridor, 1 (47): 1-28.

Verwey, I. and Havemann, G. (2001). A Project Analyses of Employment Creation Construction SMME Involvement in DBSA Funded Projects -The Involvement of Women in the Construction Sector WORK2001 conference Proceedings of the First International Conference on Employment Creation in Development 2-5 April, Johannesburg, South Africa.