

# Contractor Competence in cidb Grades 2 to 4: A pilot study

## ABSTRACT

As part of its local economic development initiative the government continues to support the creation of women owned construction companies, especially in the provision of low-income housing. These small contractors are however plagued by issues of quality of production and sustainability of their enterprises, which impact on the overall delivery of housing. The cidb has developed a tool for assessing the competence of contractors registered in the cidb Grades 2 to 6. The cidb Competence Standard for Contractors establishes the minimum acceptable competences necessary for running a contracting enterprise and for supervising building and construction. The standard, based on nationally recognised contractor training programmes assesses the contractors competence in the areas of business management, building and constructions works management (operational and supervision) and legislation related to construction works. A pilot was undertaken to assess the competence of contractors who were enrolled in contractor development programmes across the country. Briefly, the contractors were subjected to a three-hour interview with a panel of industry experts to assess their knowledge, skills and application of different construction principles in their businesses. The results of the assessments indicate that many contractors have a good understanding of the skills and competencies required to manage sustainable construction companies. Significant gaps were identified in areas such as tendering, production and business management inclusive of cash flow projections. This pilot highlights some of the critical areas of construction that need to be emphasised in contractor development programmes to create profitable and sustainable contractors that deliver quality infrastructure.

Keywords: Local Economic Development, Contractors, Competence Standard, Quality Infrastructure

## 1 INTRODUCTION

The human settlements in South Africa, indeed its construction and infrastructure sub-sectors, is an important segment of the country's economy. Yet, this important part of the economy is replete with infrastructure that is poorly designed, constructed and maintained. At the core of this problem is the lack of adequate competencies both at management and technical levels to manage the processes that create and sustain infrastructure assets. Dlungwana and Wall (2014) cite a number of South African studies (McGrath and Akoojee, 2007; Kraak, 2005 and cidb, 2007) that document the challenge of skills resources and needs and the negative impact the problem has on infrastructure environment and other economic sectors. The wastage due to poorly built and maintained buildings amounts to billions of rands. Fatalities and poor health hazards and other negative social impacts are occurring at an increasing rate as a result of inadequate skills, as happened recently when a landmark building in central Johannesburg was burned down (<https://www.news24.com/SouthAfrica/News/fatal-johannesburg-building-fire-reignites-20180906>).

Some of the critical research questions that the study is attempting to address are:

- How can requisite competencies be attained by contractors who do not have the relevant industry qualifications?
- What improvements should be considered to enhance the current contractor development programmes?

While there is no shortage of contractor development programmes in the country, it is not clear that these programmes have a systematic and methodical approach of assessing the skills of contractors that can enable such contractors to sustain their businesses while providing safe and quality infrastructure to clients. This study attempts to answer these questions and thus plug this glaring knowledge gap in the industry.

## 2 BACKGROUND

The Competence Standard provides for a standard method of assessment and recognition of the competencies of a contracting enterprise within a cidb Class of Construction Works and construction

category. Recognition of minimum competence requirements within a construction category satisfies the recognition criteria for all lower construction categories within a Class of Construction Works.

Figure 1.1 Organogram for a Contracting Enterprise

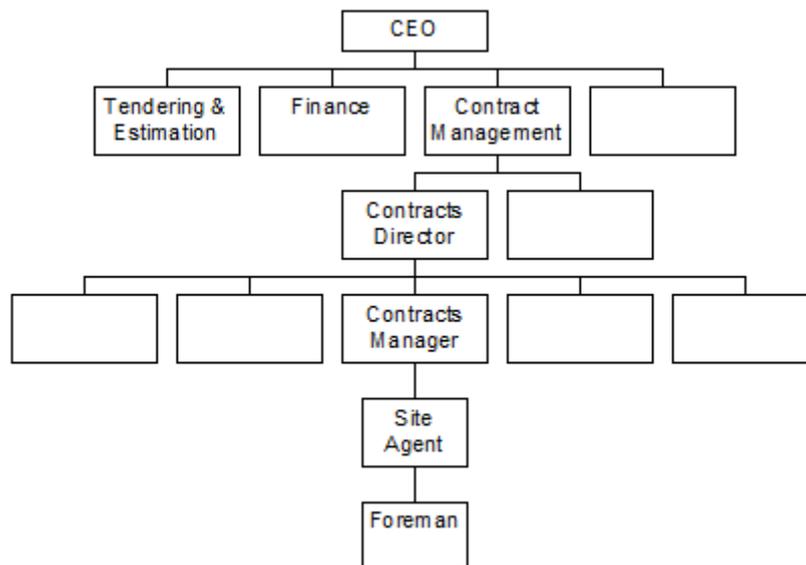


Fig 1.1 above illustrates the key functional roles in a conventional contracting enterprise. In a small contracting enterprise the owner performs most of the duties and only employs key staff as and when required. The most common configuration of companies registered in the lower cidb contractor categories of grades 1 to 6 is a company with an entrepreneurial owner with little or no knowledge of the construction industry. In these cases, the owner manages the business aspects of the company and employs construction professionals to supervise the technical aspects. Alternatively, old construction workers with technical expertise decide to start their own companies and invest in a construction enterprise. In such cases the technically qualified person employs a business management professional to undertake financial management roles and facilitate the success of the company.

This configuration is further reproduced in conventional contractor development programmes run and managed by provincial departments of public works and the Expanded Public Works Programme (EPWP). Consequently, the cidb Competence Standard for Contractors was designed to assess competencies of more than one person per contracting entity. The Competence Standard for Contractor provides for the competencies to reside with the owner and/or key nominated representatives of the contractor. Where the competencies reside with a nominated representative, the nominated representative must either be an employee of the company, or must be accessible to the company for the duration of any construction works to be undertaken by the contracting enterprise, and must be declared on tender.

In the case where a contractor or his/her nominated representative do not have the formal qualifications for the competence level applied for; cidb conducts an external assessment of their competencies through interviews and a submission of a portfolio of evidence; a process referred to as an Assessment of Prior Learning (APL). The APL is based on a set of standardised questions pegged against minimum National Qualifications Framework (NQF) requirements of formal qualifications for the required competencies. This paper presents the findings of the initial phase of the assessment of contractors as they exited from client contractor development programmes. The paper looks at the attainment of the requisite competencies by contractors who did not have the requisite qualifications and makes recommendations for the improvement of contractor development programmes.

### 3 LITERATURE REVIEW: SKILLS DEVELOPMENT MODELS

Some of the scholars that popularised the concept of core competence or competencies include Hamel and Prahalad (1994). They defined core competence as *'a bundle of skills and technologies*

*that enables a company to provide a particular benefit to customers (1994:219).*' Burgelman *et al* (2004:112) describe core competencies as corporate resources that may be reallocated by corporate management. Critically, core skills/competence should result in a competitive advantage which in turn should sustain a business enterprise.

Historically, Excellence Models have been remarkable for their ability to develop skills and competence development of staff within business enterprises in many countries throughout the world. Perhaps, two of such popular models are the Malcom Baldrige National Quality Award developed in the USA (Brown, 1996) and the European Foundation for Quality Management's Excellence Model. Both models were developed by the quality movements in the USA and Europe respectively. Over the years many other countries have tweaked these versions and adopted them for their own use.

In South Africa, the South African Excellence Foundation developed the South African Excellence Model, based on similar successful models from other countries, and the model was adjusted accordingly for local conditions (Ladzani, 2006). The Council for Scientific and Industrial Research developed a construction sector version, the South African Construction Excellence Model (SACEM) (Dlungwana *et al*, 2002). The SACEM is a business assessment tool developed to assess the performance of contractors by addressing a number of the competence areas categorised into logical evaluation criteria.

The common theme with these models is their ability to adopt best industry practices through the use of Total Quality Management (TQM) approach, including safety and environmental management. These models and many others have evolved over time but retain some common structures that have made them relevant for assessing the skills for small and large enterprises.

#### **4 RESEARCH METHODOLOGY**

An assessment tool was developed by industry experts using an iterative, peer review methodology. Briefly, the competences required to run a successful and sustainable business were defined using the literature and conventional business maturity models. The criteria, extracted from these models, were then used to identify business management competence areas inclusive of planning, financing, human resources and construction contracting. Supervision was assessed using criteria such as programming and project planning, productivity, health, safety and environment as well as quality management.

The draft tool was developed in a form of a case study that would elicit appropriate responses from the contractors based on their knowledge and experience. The tool was workshopped with a panel of industry experts to validate the content and appropriateness for assessing construction businesses. The tool was then adjusted and piloted with contractors who had been in the industry for at least ten years and were running successful construction companies. The pilot was intended to further validate the appropriateness of the tool for assessing the subject matter, standardise the terminology used, make it user friendly. The tool was lastly subjected to an evaluation of its reliability when applied by different assessors by comparing the outcomes of assessment of the same candidate by different assessors. Concurrence of the results of assessments conducted on the same candidate by different assessors was taken to indicate the reliability of the assessment tool and the validity of the method of assessment. The tools were then finalised and applied to a larger population of contractors.

The study population comprised of contractors exiting contractor development programmes run and managed by provincial Departments of Public Works and the Expanded Public Works Programme (EPWP). The EPWP contractor development programme offers training to two persons per contracting entity, an owner business manager, who is trained in business management principles and a supervisor who undertakes the works management on site.

All contractors in the programmes had to be registered on the cidb register of contractors at the initiation of the programme, and participated in a three-year contractor development programme that entailed classroom instruction on different aspects of construction business and practical experience from projects awarded by EPWP client departments to apply their classroom learning. Lastly, all participants had successfully upgraded by at least one level on the cidb Register of Contractors. The sample of this study is all grade 2 to 4 contractors who exited development programmes in 2017 and presented themselves for assessments by the cidb panel of assessors.

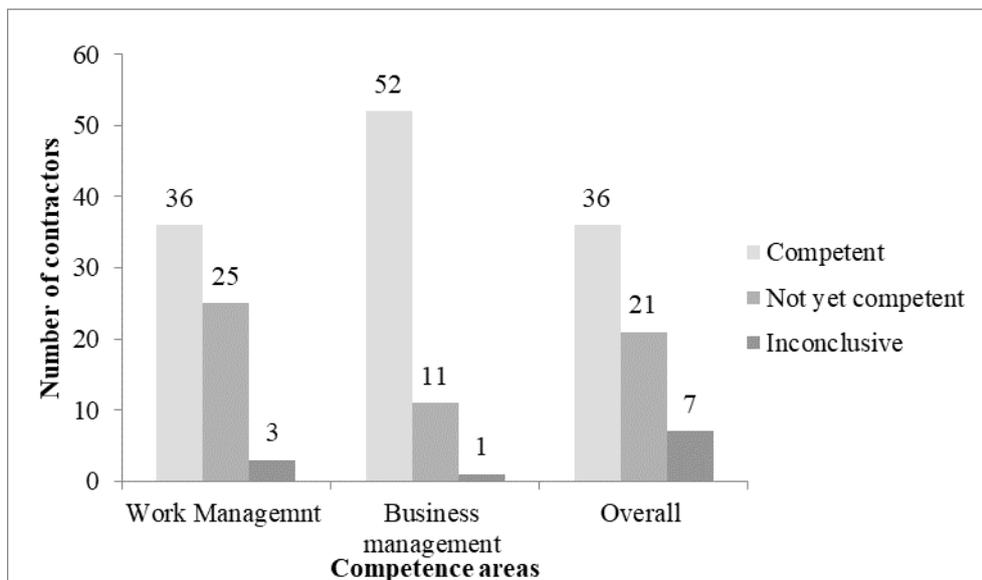
Representatives of the contracting entity, namely, the business owner and supervisor were subjected to a three-hour interview by industry experts and all the responses recorded. The outcome of the assessment interview was compared with model answers indicative of what was expected from a competent construction practitioner to do in practice. All competence shortcomings were noted and recorded as recommendations for further training for the contracting entities assessed. In essence, the methodology used was a 'mixed methods' approach gathering both qualitative and quantitative data. For the sake of brevity to meet the prescribed length of paper, only quantitative data will be covered here.

This study reports on the findings of the initial iteration of the cidb contractor competence assessments and makes recommendations for the improvement of the client managed contractor development programmes.

## 5 FINDINGS AND DISCUSSION

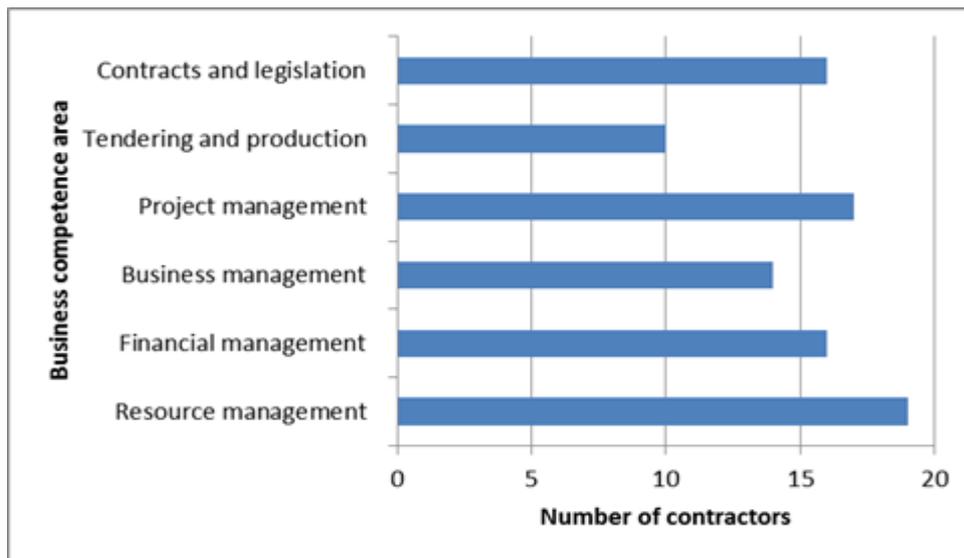
There were in sixty four (64) contractors assessed in cidb grades 2 to 4 and the results are presented in Figure 1 below. There were 56% (36/64) contractors assessed as competent, 33% (21/64) not yet competent with 11% (7/64) being declared as inconclusive. The inconclusive results are cases where the interview over ran the three-hour time and the contractor was only assessed in one competence area, or where the contractor claimed to have academic qualifications in the competence area but had not yet submitted proof of qualifications.

**Figure 1: Competence results for grade 2 to 4 contractors**



There were more contractors competent in business management (82%) than works management (56%). Business management competence enables the contractor to make profits on their projects, upgrade on the cidb register of contractors and become sustainable. The core areas of business management in construction contracting include an understanding and application of construction contracts and legislation compliance, tendering and productions management, project programming and progress monitoring, business, and financial and resource management, including human resources management and health, safety and environmental management.

**Figure 2: Training needs identified in business management**

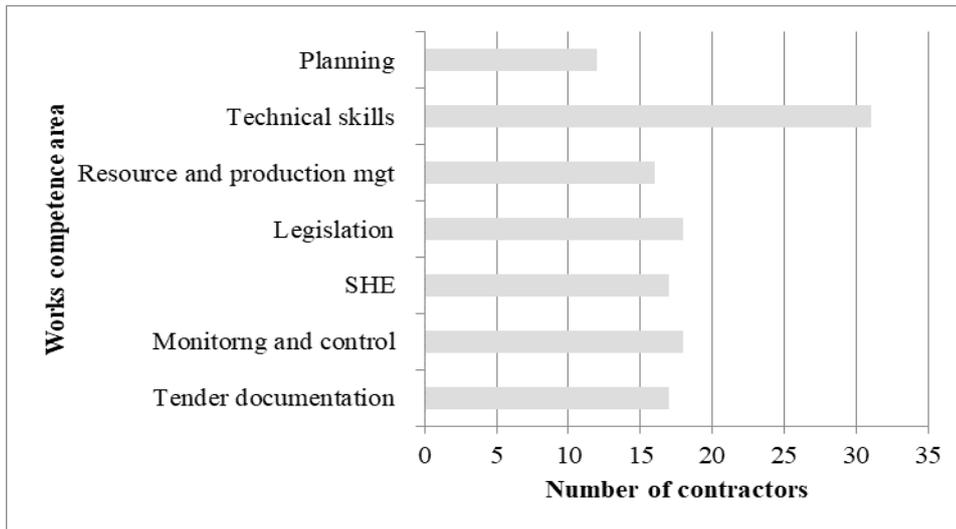


The assessment included an identification of competence areas where the contractors required further input to meet the requirements of the cidb Competence Standard for Contractors. Figure 2 above presents the areas that were identified as requiring further input within the business management competence area. According to Figure 2 above, the areas where most contractors required input were resource management (30%; 19/64), with 25% (16/64) requiring further training in financial management and contracts and legislation. The competence areas where most contractors demonstrated higher competence and therefore fewer needed top-up training are business management (11%; 7/64) and tendering and production (15%; 10/64).

The contractors showed the least competence in the areas of works management, with the least competence shown for technical skills (48%; 31/64). The works management area where contractors showed higher competence levels were planning with 19% (11/64) requiring input, resource and production management (25%; 16/64) and safety, health and environmental management (25%; 17/64).

Contractor performance and contracting enterprise sustainability are dependent on the technical and business management competence of the people running the company. When a company has technically sound people, they are able to price their jobs correctly, attain productivity rates that enable them to complete their jobs on time, to the quality specified by the client and ultimately make profit on their projects. Profitable construction enterprises are more likely to have an owner or personnel with sound business management practices

**Figure 3: Training needs identified in works management**



Contractor development programmes take entry level contractors and train them in business management and technical skills required to implement their projects successfully, within scope, time and cost. The findings of the competence assessments show that only 56% of contractors who have participated in a three-year development programme are regarded as competent on exit. There were more contractors assessed as competent in business rather than works management. This is of concern as the primary function of a construction entity is to deliver projects to clients. Low level of works management competence among contractor development graduates means that clients are at risk of getting poor quality workmanship that adversely affects service delivery. This is borne out by the cidb Construction Industry Indicators that have shown that clients were not satisfied with the performance of contractors on 16 per cent of the work carried out in 2015 (cidb, 2016)

About a quarter of the contractors (23%) were regarded as not yet competent in all of the criteria tested in the assessments. These are contractors who still require significant input and support to reach a level of competence regarded as sufficient to run a successful construction projects.

## **6 CONCLUSION AND FURTHER RESEARCH**

The study concludes that only half of contractors enrolled on contractor development programmes exit the programme with industry relevant skills and competences posing a risk to clients who may use these contracts, as well as to the contractors who may lose money implementing unsuccessful, loss making projects.

The study recommends that in order to improve the outcomes of contractor development programmes and train contractors to levels of competence that can ensure successful project implementation, contractor development practitioners must pay particular attention to technical construction skills. Programmes must also enhance the overall works management training especially in areas of legislation, monitoring and control, as well as tender documentation.

This paper only reports on the assessment of grades 2 to 4 entry level contractors, who may have only been in the industry for a short time. Further this is an on-going project and the competence levels may change as the numbers of contractors assessed increases.

## **7 ACKNOWLEDGEMENTS**

The authors wish to acknowledge the construction industry development board for sharing its data and permitting information to be published. It is hoped that by contributing in this manner the stakeholders in the human settlements sector will be empowered and informed about the development of skills promotion in the sector.

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