

AN EXPLORATIVE STUDY FOR THE DEVELOPMENT OF AN
AUTOMATION TENDER PROCESSES: A CASE OF KWAZULU –
NATAL (KZN) DEPARTMENT OF PUBLIC WORKS

Scelo Mhlongo and Prof Aiyetan

Durban University of Technology, Durban, South Africa

CITC-14 | SEPTEMBER 2-5, 2024
HOSTED BY FEDERAL UNIVERSITY OF RIO DE JANEIRO
RIO DE JANEIRO, BRAZIL

CITC GLOBAL
Construction in the 21st Century



Introduction & Background

- Tendering refers to the process of selecting a contractor to construct a building (Edquist, Nicholas, Vonortas & Zabaka 2014). Tendering systems can be categorized as public and private tendering system, further broken down into selective and nominated tendering, open tendering and negotiated tendering for the purposes of building, management, and collaboration.
- A construction project consists of complex processes involving stakeholders, long project durations, and long contractual relations (Oyegeke and Dickson, 2020). The tendering has not been given adequate attention in project management in KZN PWDs, and the entire South African construction industry has been flooded by corruption (Oyegeke and Dickson, 2020).
- Processes, in turn, are underpinned by methods like a documented, systematically ordered collection of rules and procedures, like the formal steps to be taken in the performance of a specific task, which are informed and shaped by the policy of the organization (IOS, 2018).

Aim, Objectives, and Scope

- Aim
 - This study aims to investigate factors that militate against tendering processes with a view of developing an automation system for tendering processes at the KwaZulu-Natal (KZN) Department of Public Works.
- Objectives
 - To identify and assess the factors causing poor tendering in KZN Department of Public Works
 - To evaluate the effect of lack of automation tender processes in KZN department of public works
 - To evaluate the benefits of automation tendering system for the delivery of construction project in KZN PWD

Research Design and Methodology

- Both qualitative and quantitative studies were undertaken. A case study of the KZN DPW on tendering and procurement practices was conducted.
- The sample frame consists of professionals working for KZN DPW. The population comprised contractors (100), architects (50), quantity surveyors (50) and construction managers (100). Most of the sample surveyed ranged in age from 30 to 50 years old.
- The years of experience most of the sample surveyed were between 10 and 15 years, with the highest qualifications being B-Tech and a diploma, both at 21.4 %. The most common types of projects handled are new projects, rated at 42.7 %.
- Contractors and construction managers have a large sample size, and simple random probability selection techniques were used in the selection of respondents. Based on the discussion above, the respondents for the study were deemed to have adequate knowledge of the construction processes.

Results (1)

Table 1. Factors causing poor tendering in KZN Department of Public Works.

Factor	Mean Score	Standard Deviation	Weighted Mean	Ranking
Corruption constrains militating against effective tendering system	4.1	1.0	4.09	1
Political constrains and unethical practices	4.1	1.0	4.06	1
Poor tender planning	3.4	0.9	3.37	3
Competency of professional's teams	3.3	0.8	3.31	4
Effective of tender process	3.3	0.8	3.31	4
Benefits of automating processes	2.8	1.3	2.85	6

Results (2)

Table2. Effect of lack of automation tender processes in KZN department of public works

Factor	Mean Score	Standard Deviation	Weighted Mean	Rank
Time	3.4	0.8	3.39	1
Cost	3.3	0.7	3.25	2
Quality	3.0	0.8	2.95	3
Safety	2.4	0.9	2.44	4

Result 3

Table 3. Benefits of automation tendering system for the delivery of projects in KZN PWD

Factor	Mean Score	Standard Deviation	Weighted Mean	Ranking
Reduced corruption	4.3	0.9	4.33	1
Reduction in the use of paper	4.3	1.0	4.29	2
Competitiveness enhancement by providing transparency	4.2	0.9	4.22	3
Efficiency	4.0	1.0	3.98	5
Reduction in cost of tendering	4.0	1.1	4.00	4
Cost reduction	3.7	0.9	3.65	7
Proportionality	3.5	0.9	3.52	9

Discussions, Conclusions & Recommendations (2)

- Discussion
- The study finding on corruption and politics as factors contributing the most to poor tendering processes agrees with Phiri and Smallwood's (2010) finding that corruption is rooted in poorly functioning institutions as well as in policies that undermine free trade and competition in South African tendering processes.
- Conclusion
- The study concludes that, in relation to the factors causing poor tendering, corruption, political constraints and unethical behaviour are the topmost. Time and cost increases are the effects of a poor tendering system, and among the benefits that can accrue due to automating processes, the reduction of corruption and transparency are the topmost.
- Recommendation
- According to the research findings, the KZN DPW must consider adopting an automated tendering system to improve the current tendering processes. It is recommended that the KZN DPW consider upgrading the manual use of automated tendering systems to move with time as the world is moving to digital systems.