97. Assessment of factors affecting septic tanks performance: a case of Chuka Municipality, Kenya.

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Abstract

A septic tank is an underground, onsite, small scale sewage treatment setup, which collects the sewage for the decomposition activity by bacterial action. The Sustainable Development Goal Agenda 6.2 targets to achieve universal basic sanitation and hygiene (United Nations, 2018). Septic tanks in Chuka Municipality have been collapsing leading to loss of life and destruction of property. The main objective of the study was assessing the factors affecting septic tanks performance in Chuka Municipality. This was achieved by looking at the effect of level of skills of artisans, the approval mechanisms, and cost of construction on the performance of septic tanks. A sample of 110 respondents was used in the study. Data was collected from artisans, public health officers, public works officers, and homeowners by use of semi-structured questionnaires and interviews. The findings indicated the presence of a significant association between skills of construction workers (chi-square statistic of 12.34, with a p-value of $0.002 < 0.05$), approval mechanisms (chi-square statistic of 8.45 and a p-value of $0.015 < 0.05$), and performance of septic tank systems. The association between cost of construction (chi-square statistic of 5.67 with a p-value of $0.058 > 0.05$). The study was limited by lack of cooperation from some respondents who were reluctant to participate in the exercise, thinking that the issues under study are sensitive enough to jeopardize their careers. Based on the findings, the study makes the following conclusion: the expertise of artisans, strong regulatory oversight and approval mechanisms significantly impacts septic tank performance. These recommendations will assist policy-makers and construction practitioners in the field pay more relevance to construction codes and standards.

Keywords: *Concrete stuctures, Septic tank, artisan expertise*