

A guiding framework for enhancing database security in state-owned universities in Zimbabwe

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Abstract

This study sought to design a framework to enhance database security in state-owned universities. Database security has been a cause for concern for state-owned universities following many reported cases of state-owned universities that were repeatedly hacked locally and the fact that internationally and there seems to be no strategy in place to guide database security mechanisms in state-owned universities. The study followed a positivist research philosophy using a hypothetical model to test various hypotheses. Through the lens of activity, Social Technology System and deterrence theories, using a survey method to gather the information, the hypotheses were tested and analyzed to further understand security vulnerabilities, security controls and ideal architectural requirements of database security. Quantitative data were collected from 104 respondents using questionnaires. A deductive approach was employed to ensure that the proposed strategy was designed after collecting the necessary data. The quantitative data were analyzed using SPSS version 22. The research findings highlighted the following issues that affect database security: human factor, work environment and technology in use. These issues lead to data exposure, data theft, data corruption, loss of revenue and loss of goodwill. Finally, a framework was proposed that would enhance database security in state-owned universities.