

Factors Affecting to the Awareness of Green Computing among State University Students in Sri Lanka

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Abstract

Green computing is a vital concept that promotes the environmentally responsible use of information technology to conserve energy, reduce electronic waste, and encourage sustainable digital practices. As frequent users of digital technologies and future professionals, university students play a crucial role in supporting and spreading green computing practices. However, limited research in the Sri Lankan context has explored the level of awareness among students and the factors influencing it. This study addresses this gap by examining the factors of green computing awareness among state university students in Sri Lanka. The research investigates five independent variables: knowledge, institutional support, government policies, responsibility for the environment, and compatibility. A quantitative research design was applied, and data were collected through a structured questionnaire from 384 undergraduate students across 17 state universities in Sri Lanka using cluster sampling. Data analysis included reliability and validity testing, descriptive statistics, correlation, and regression analysis. The model explained 53.5% of the variance in awareness ($R^2 = 0.535$). Results indicate that all five factors significantly and positively influence awareness: knowledge ($\beta = 0.339$, $p < .001$), institutional support ($\beta = 0.234$, $p < .001$), government policies ($\beta = 0.154$, $p = .022$), responsibility for the environment ($\beta = 0.168$, $p = .011$), and compatibility ($\beta = 0.107$, $p = .044$). Among these, knowledge had the strongest influence, followed by institutional support. Importantly, the findings highlight that awareness cannot be fostered by knowledge alone but also requires institutional backing, supportive policies, environmental responsibility, and alignment with students' lifestyles and technological habits. This study bridges a regional research gap and offers actionable insights for policymakers, educators, and university administrators to design programs and policies that enhance sustainable IT practices. Promoting green computing at the university level not only cultivates environmentally responsible students but also contributes to Sri Lanka's national sustainability agenda and global environmental goals.

Keywords: compatibility, environmental responsibility, government policies, green computing, institutional support