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AIAIB as A Smart Home Service Innovation: An Empirical Study of IoT-Based Automation, Perceived Value, Adoption Intention, and Economic Impact

Dr. Subasish Mohanty[1] and Dr. Nisha Sawant[2]
Asst. Professor (Sr. Gr.) in Commerce, Goa Multi Faculty College, Dharbandora (Goa University)[1]
Asst. Prof. in IT & Computer Applications, Goa Multi Faculty College, Dharbandora (Goa University)[2]
subasish.147@gmail.com[1] and prof.nishasawant@gmail.com[2]

Abstract: *Rapid urbanization, rising electricity costs, and sustainability concerns have intensified the demand for intelligent home automation solutions. This study empirically evaluates AIAIB (Artificial Intelligence at Its Best), an IoT-enabled smart home automation system designed to optimize lighting usage through motion-based sensing. Moving beyond a technical prototype, the research integrates perspectives from engineering, marketing, economics, and human resource management. A mixed-method approach was employed, combining system performance evaluation with a structured user survey analyzed using Structural Equation Modeling (SEM). The results demonstrate that system effectiveness significantly enhances perceived value, which in turn positively influences users' adoption intention. Economic analysis reveals meaningful reductions in electricity expenditure and operational supervision costs. The study positions IoT-based home automation not merely as a technological enhancement, but as a scalable smart service innovation with measurable commercial, economic, and workforce implications.*

Keywords: Smart home automation, IoT, perceived value, adoption intention, SEM, energy efficiency, HR implications

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