

## **ABSTRACT**

### **DESIGNING PROTOTYPE OF AN INTEGRATED WASTE MANAGEMENT SYSTEM APPLICATION AS AN INNOVATION FOR WASTE MANAGEMENT**

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In 2021, the volume of waste in Indonesia reached 18.2 million tons per year, and in Bandung, the total amount of waste generated in 2023 was 1,609.76 tons per day. This figure is significantly higher than in previous years. The increase is largely due to the public's lack of time to sort their waste for recycling, high waste collection fees, an inefficient payment system, and a lack of transparency regarding where the waste ends up, leading to a sense of irresponsibility among the population. As a result, Indonesia has become the second-largest contributor to global waste. Ironically, the Indonesian government has committed to reducing waste by 70% by 2025 to achieve SDG Number 11: Sustainable Cities. With the advancement of technology, these issues can be addressed through digitalization and integration. There is a need for an application that can solve these problems: an integrated waste management application that is expected to assist the community and the government in reducing the waste problem in Indonesia. The design of the application was conducted using the design thinking method, and the research was carried out through qualitative methods, with data collected through observation, interviews, and questionnaires, and subsequently analyzed using visual analysis and comparative matrix analysis. This research is expected to be useful in understanding the process of designing an application that effectively achieves its primary goal: an integrated waste management system.

**Keywords:** Waste, Waste Management, Integration, Application, Sustainable Cities