A Food Waste Mobile Gamified Application Design Model using UX Agile Approach in Malaysia

ABSTRACT

Food waste is a significant worldwide issue in landfill management. Due to improper implementation, technology applications related to food waste collection and its management system are still lacking in practice. The available applications have yet to address the issue of food waste management. Constructing an interactive mobile application is necessary for managing food waste collection for the decomposition process using Black Soldier Fly (BSF) treatment. Furthermore, as the mobile application requires participation from various user backgrounds, maintaining user involvement has become a priority. Gamification has emerged as one of the approaches that might favorably affect individual engagement behavior. A comprehensive game element design is required where it focuses on how gamification can influence user engagement. This study aims to model the food waste gamified mobile application design to benefit Malaysia's decomposition ecosystem. It includes gamification, management features, and data visualization for reporting and will involve users from households, businesses, and the BSF farm. This paper presents the modelling process of a new mobile application design for this concept of study. The UX agile approach was used in gathering and designing the application requirements as it allows for active participation from all stakeholders. The result shows that the experts agree on the application design. This research will indirectly benefit the BSF industry in Malaysia, and it will have a significant impact on gamification, user experience, and food waste management in the direction of a sustainable environment.