APPLICATION OF USER INTERFACE AND USER EXPERIENCE (UI/UX) FOR SMART GREENHOUSE MOBILE APPLICATION DESIGN

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ABSTRACT

Smart greenhouse can remotely control and monitor the planting environment through mobile applications. However, many smart greenhouse mobile applications need more attractive user interface designs and limited features, making the system less effective for greenhouse monitoring and controlling. This research aims to design a smart greenhouse mobile application incorporating user interface and user experience principles. The performance of the designed system is evaluated using the System Usability Scale (SUS) assessment. The design process follows five design thinking principles, including empathize, define, ideate, prototype, and test, facilitate identifying user problems and ensure the design prototype aligns with user needs. The design prototype is created using the Figma application. Based on feedback from ten potential users, the performance test results indicate a usability score of 82.75, which falls within the adjective excellent and grade A category . This outcome demonstrates that the application design for the smart greenhouse, developed with a focus on user interface and user experience, has been successfully developed to create an attractive interface and features that meet user needs.

Keywords: smart greenhouse, user interface, user experience, design thinking, system usability scale (SUS)

PERANCANGAN DESAIN APLIKASI *MOBILE SMART GREENHOUSE* MELALUI PENERAPAN *USER INTERFACE* DAN *USER EXPERIENCE* (UI/UX)

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INTISARI

Smart Greenhouse dapat mengontrol dan memonitor lingkungan tanam dengan jarak jauh melalui aplikasi *mobile*. Namun beberapa aplikasi *smart greenhouse* yang ada saat ini memiliki desain antar muka atau *user interface* yang kurang menarik. Selain itu, keterbatasan fitur menyebabkan sistem yang dibangun kurang kompleks bagi upaya monitoring dan kontrol *greenhouse.* Penelitian ini bertujuan untuk merancang desain aplikasi *mobile smart greenhouse* melalui penerapan *user interface* dan *user experience* serta melakukan uji kinerja sistem desain melalui penilaian *System Usability Scale* (SUS). Prinsip *design thinking* meliputi *empathize, define, ideate, prototype,* dan *test* memudahkan proses identifikasi masalah pengguna, pencarian ide, hingga pembuatan *prototype* desain berjalan sesuai kebutuhan pengguna. *Prototype* desain dibuat dengan aplikasi Figma. Berdasarkan uji kinerja terhadap 10 calon pengguna, desain *aplikasi mobile smart greenhouse* dinyatakan *acceptable* dengan angka *usability* sebesar 82,75 dan masuk dalam kategori *adjective excellent* dengan *grade* A. Perancangan desain aplikasi *mobile smart greenhouse* berhasil dilakukan dengan menerapkan *user interface* dan *user experience* sehingga aplikasi memiliki tampilan yang menarik serta memberikan fitur sesuai dengan kebutuhan pengguna. Desain aplikasi yang dirancang sesuai dengan kebutuhan pengguna memberikan pengalaman interaksi yang baik kepada pengguna.

Kata Kunci*:* *smart greenhouse, user interface, user experience, design thinking, system usability scale* (SUS)