

Kansei engineering approach for designing a self-monitoring blood glucose application

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Deskripsi Lengkap: <https://lib.ui.ac.id/detail?id=9999920522175&lokasi=lokal>

Abstrak

The proportion of people with diabetes in Indonesia is 6.9%, of whom, 90% suffer from type 2 diabetes. To control diabetes, the International Diabetes Foundation has a self-monitoring blood glucose program (SMBG) that is designed to gather detailed information about blood glucose, which can be used to define the required dietary and physical activity. In Indonesia, SMBGs have not been applied widely due to some difficulties with the SMBG application, including difficulty with interpreting blood glucose levels and the required food consumption. The rapid development of smartphones and the internet in recent years may provide a solution for SMBG applications in Indonesia. Therefore, the aim of this research is to design an SMBG application that meets the needs of people with diabetes. In designing the application, the Kansei Engineering method was used due to its ability to capture impressions of the product that reflect hidden needs. Kansei Engineering was applied to translate the patient's perception into design elements. Statistical analysis – particularly Factor Analysis and Partial Least Squares Analysis – were used to support the Kansei Engineering method. Statistical analysis indicated that four main design components needed to be considered in the design, including 'data record persistence', 'ease of use', 'data presentation', and 'visual attractiveness'. These four components were used as the basic design concepts, which were transferred to new design specifications based on Partial Least Squares Analysis. The selected design elements (or premium Kansei) were 'color scheme – light', 'language – Bahasa', and 'input dialog – typing'. The result of this research is a design for an SMBG android-based application that is easy to use and also provides appropriate information to patients with diabetes so they can plan their diet program.