

ABSTRACT

As awareness of sustainability and energy efficiency continues to grow, battery-powered electric vehicles have emerged as an innovative and environmentally friendly transportation alternative. One of the key components in these vehicles is the Battery Management System (BMS), which requires a user interface capable of conveying technical information in real-time and in an easily understandable manner. This study aims to identify and classify informative dashboard features that influence user satisfaction using the Kano Model approach, as well as to propose a battery condition monitoring feature to support driving efficiency and safety. A total of 17 dashboard features were analyzed and categorized based on the Kano framework. The results show that no features were classified as Must-be. Approximately 29% of the features, such as the speedometer and SOC gauge, fall under the One-Dimensional category, which directly impacts user satisfaction. About 47% were categorized as Attractive, including features like distance-to-empty and interactive maps, while 18% were classified as Indifferent, meaning they do not significantly affect user satisfaction. In addition, a prototype feature for BMS balancing was developed and integrated into the Human Machine Interface (HMI). This feature enables users to monitor battery cell conditions in real-time, allowing drivers to manage the battery more effectively. The findings of this study are expected to serve as a foundation for developing informative and user-oriented electric vehicle dashboards that support sustainable transportation practices.

Keywords: *Battery Management System (BMS), Dashboard, Human Machine Interface (HMI), Kano Model, Electric Vehicles.*