Understanding Mobile Health App Perceptions: Large Language Models for Scalable Consumer Insights

Miriam Alzate
Universidad Publica de Navarra
Paula Vidaureta
Nair Center ((Navarra Artificial Intelligence Research Center) and UPNA
Andrea Morales-Garzón
Universidad de Granada
Karel Gutiérrez-Batista
Universidad de Granada

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Abstract

Consumer perceptions of mobile Health (mHealth) apps shape their satisfaction and sustained use, especially as digital health technologies advance. This research explores user perceptions through two interconnected studies analyzing 849,918 online reviews of top mHealth apps in the US. Apps are categorized into tracking, nutrition, step counters, and rest/meditation. Study 1 employs BERT-based topic modeling and KMeans clustering to extract key topics and classify them under Keller's brand association dimensions: product attributes, non-product attributes, functional benefits, and emotional benefits. Study 2 develops a fine-tuned DistilBERT classification model to predict these dimensions across any review dataset, offering scalable insights. By bridging marketing, artificial intelligence, and digital health, this research contributes to understanding consumer behavior and advancing strategies to improve app design, user satisfaction, and public health outcomes.

Keywords: mHealth apps, Large Language Models (LLM), Natural Language Processing (NLP)

Track: Digital Marketing & Social Media