

Beyond Functionality: An SBERT-Based Analysis of Technological Appropriation Modalities Using 50,000 Amazon Customer Reviews

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Abstract

Traditional models of technology acceptance primarily focus on functional attributes; however, contemporary human-machine interactions reveal complex relational dimensions that go beyond instrumental evaluation. This research aims to identify and quantify the multidimensional modalities of technological appropriation by analyzing discursive patterns in customer reviews through computational linguistics. An automated approach was employed to group reviews according to thematic similarity, relying on semantic similarity measures (SBERT-based clustering followed by k-means clustering). The corpus comprises 49,985 Amazon customer reviews systematically extracted from the Amazon Reviews 2023 dataset. The analysis reveals an optimal configuration of six clusters structured around three overarching dimensions: experiential, instrumental, and situational. The predominance of the experiential dimension confirms a paradigmatic shift toward the primacy of experience: the product is not evaluated solely for what it is, but also through the experience it affords and the context it evokes. This computational approach provides a robust alternative to declarative methods for analyzing processes of technological appropriation.

Keywords: SBERT clustering, Amazon reviews, technology appropriation, computational linguistics, human-computer interaction