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Semantic Alignment and Value Co-Creation in Digital Ecosystems: An AI-Supported Network Analysis of the Gastronomy Open Ecosystem (GOe)

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Abstract

Digital ecosystems are attracting increasing attention as platforms where innovation, sustainability, and various types of knowledge are shared and organized. While many previous studies have addressed the structural characteristics of these ecosystems, less attention has been paid to the semantic functioning of institutional discourses within digital ecosystems. This study examines how the concepts of innovation, sustainability, and heritage are discursively represented within the Gastronomy Open Ecosystem (GOe), one such digital ecosystem. Drawing on the service-dominant logic (SDL) approach, the study was designed within an AI-supported analytical framework that integrates natural language processing (topic modeling and transformer-based semantic embeddings) with network analysis. The study's dataset consists of publicly available text content collected from the GOe website and its digital community platform. The findings show that innovation-focused themes occupy structurally central positions within the institutional discourse, while gastronomic heritage and sustainability demonstrate a strong semantic alignment with innovation despite their relatively marginal positions within the network. These findings suggest that digital communication displayed through GOe is organized not only through structural distinctiveness but also through complementary structural and semantic patterns. This study contributes to the literature by demonstrating how AI-supported semantic analysis and network analysis can be integrated to examine the discursive structure of digital gastronomy ecosystems. The approach proposed in this research offers a systematic perspective for analyzing corporate discourse, semantic alignment, and digital communication within gastronomy platforms, rather than examining actual ecosystem interactions.

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