

Instagram Reels Engagement Drivers: Machine Learning Insights into Celebrities, and Brands

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Abstract

This study explores the key drivers of engagement on Instagram Reels using advanced machine learning techniques. Leveraging a dataset of 438 Reels from top celebrities, brands, and organizations, the research identifies the most significant features influencing engagement rates, including content type, emotional tone, and demographic appeal. Results reveal that celebrity-driven content, creative activities, and visually diverse elements significantly boost audience interaction, while positive emotional tones and innovative content combinations enhance performance. The analysis integrates Random Forest regression and K-Means clustering to provide actionable insights for marketers and content creators. The findings bridge theoretical frameworks such as the Uses and Gratifications Theory with data-driven methodologies, offering a comprehensive understanding of short-form video engagement dynamics. This study contributes to optimizing digital strategies, ensuring higher engagement in the evolving social media landscape.

Keywords: *Instagram Reels, Engagement Rate, Machine Learning*

Track: *Digital Marketing & Social Media*