

THE HONG KONG POLYTECHNIC UNIVERSITY DEPARTMENT OF MANAGEMENT AND MARKETING

Departmental Research Seminar

Identifying Purchase-Evoking Social Media Posts: A Theory-Driven Deep Multimodal Learning Framework

By

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Date : 8 Jun 2026 (Mon)

Time : 2:30pm – 4pm

Venue : M802, PolyU

Abstract

Social media plays an increasingly important role in shaping consumer purchase behavior and informing operational decisions. However, the multimodal nature of social media content, which often combines text and images, makes it difficult for firms to extract actionable insights. To address this challenge, we propose a theory-driven Quality-Credibility-Complementarity Deep Multimodal Learning (QCC-DML) framework. Specifically, we extend the traditional Information Adoption Model (IAM), originally developed for text-based content, to interpret multimodal social media posts. By incorporating content complementarity between text and images, post quality, and source credibility, the proposed framework identifies social media posts that evoke consumer purchase intentions. Based on the identified purchase-evoking posts, we construct purchase-evoking frequency (PEF), defined as the number of purchase-evoking posts that mention a specific product feature. Using social media data and sales data from a partner kitchenware manufacturer, we validate the economic relevance of the proposed framework by showing that PEF has a significant positive effect on product sales. PEF captures feature-level demand signals from social media and indicates which product features are gaining traction among consumers. In addition, this impact varies across product attributes and distribution channels. Specifically, the impact of PEF is stronger for search goods (versus experience goods) and online sales (versus offline sales). This study contributes to the operations management literature by showing how multimodal social media analytics can support data-driven operational decision-making. From a practical perspective, the proposed framework helps firms detect evolving consumer preferences and supports more informed decisions in areas such as product design, inventory planning, and supply chain coordination.

Prof. Hsing Kenneth Cheng currently teaches information technology strategy, electronic commerce and supply chain management, and object oriented analysis and design. His research interests focus on analyzing the impact of Internet technology on software development and marketing, and information systems policy issues, in particular, the national debate on network neutrality. Prior to joining UF, he served on the faculty at The College of William and Mary from 1992 to 1998.

All interested are welcome.



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