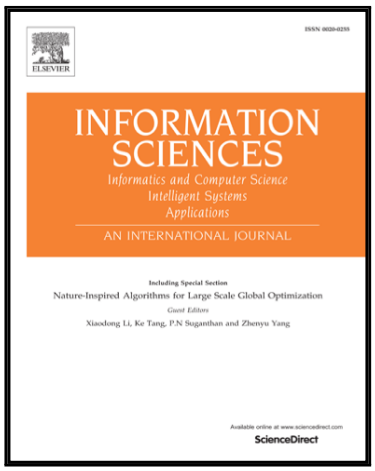

Clicking position and user posting behavior in online review systems: A data-driven agent-based modeling approach

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Clicking position and user posting behavior in online review systems: A data-driven agent-based modeling approach

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Abstract: In online review systems, a participant's level of knowledge impacts his/her posting behaviors, and an increase in knowledge occurs when the participant reads the reviews posted on the systems. To capture the collective dynamics of posting reviews, we used real-world big data collected over 153 months to drive an agent-based model for replicating the operation process of online review systems. The model explains the effects of clicking position (e.g., on a review webpage's serial list) and the number of items per webpage on posting contributions. Reading reviews from the last webpage only, or from the first webpage and last webpage simultaneously, can promote a greater review volume than reading reviews in other positions. This illustrates that representing primacy (first items) and recency (recent items) within one page simultaneously, or displaying recent items in reverse chronological order, are relatively better strategies for the webpage display of online reviews. The number of items plays a nonlinear moderating role in bridging the clicking position and posting behavior, and we determine the optimal number of items. To effectively establish strategies for webpage design in online review systems, business managers must switch from reliance on experience to reliance on an agent-based model as a decision support system for the formalized webpage design of online review systems.

Keywords: Agent-based modeling; Big data; Online review systems; Clicking position; Posting behavior

1. Introduction

Owing to rapid advancements in network technology, a novel class of social media businesses has emerged, based on online review systems (ORSs). Consumers rely on ORSs for reviews by a community and as a way to share knowledge and find information. Online reviews have significant effects on consumers, and have received significant attention from business managers. Research studies have reported the effects of online

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