AI recommendation vs. user subscription: Analyzing in-feed digital advertising performance on social media platforms

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Researchers from Lehigh University, University of Hong Kong, and Wuhan University published a new *Journal of Marketing* article that

examines in-feed advertising's performance across subscription versus AI recommended news feeds.

The study is authored by Beibei Dong, Mengzhou Zhuang, Eric (Er) Fang, and Minxue Huang.

How do you get news on a daily basis? Subscribe to topics you are interested in? Or let artificial intelligence (AI) algorithms recommend news to you? Platforms like Google News, Twitter, and TikTok offer two distinct ways of curating organic content: through user subscriptions and via AI algorithms.

If, for example, you log into Twitter (now known as "X") and open the "Following" tab, you will encounter posts from the sources you have subscribed to. Or if you open the "For You" tab, you will see content recommended by AI algorithms based on what AI predicts you are interested in viewing.

These different methods of delivering content provide distinct contexts for in-feed ads. However, little is known about how the performance of in-feed ads compares between subscription and AI-recommendation channels.

In-feed ads blend into your news feed, matching the format and style of content while clearly indicating their sponsored status. These ads can take various forms, from text-based ads on Apple News to eye-catching images on Instagram and engaging videos on TikTok. In-feed advertising has seen significant growth, with 58.3% of U.S. digital display spending allocated to these ads in 2018.

The authors explain that "in-feed ads ideally fit seamlessly into the organic content stream and their effectiveness is determined by both the ads' attributes and where they are placed. We examine how the channel

affects ad effectiveness and whether the effects also depend on ad attributes." They consider two core digital ad attributes:

- Ad appeal that describes key content of the ad, which can either be informational (focusing on factual product information) or emotional (emphasizing the product experience through subtle feelings)

- An ad link that leads to consumer action, which can be direct (e.g., "buy now") or indirect (e.g., "click for more information")

Channel difference and consumer engagement

The manner in which content is delivered (through subscription or recommendation) has a big impact on how customers engage with that content. This, in turn, can determine whether they view in-feed ads as intrusive and if they decide to click on the ads and make purchases.

"We find that subscription and recommendation channels have two key differences: source credibility and content control. Subscription channels have greater source credibility and more content control because consumers can actively choose their sources, motivating them to exert greater cognitive effort in processing content. In contrast, AI-recommended content may be perceived as less credible and reliance on algorithms reduces consumers' motivation to exert cognitive effort, leading to lower engagement," the researchers claim.

Ad intrusiveness and ad performance

In the subscription channel, high customer engagement with the organic content makes readers more goal-oriented, and they thus end up perceiving ads as more annoying and interruptive. However, customers

who do click on an ad, despite the annoyance, show stronger interest and a higher conversion rate. By contrast, in the recommendation channel, customers are in an exploratory state and thus perceive ads as less intrusive. Consequently, customers are more inclined to click on ads in the recommendation channel.

The study uses two ad performance metrics for analysis: click-through rate (CTR), the ratio of clicks to exposures, and the conversion rate (CR), the ratio of purchases to clicks. In the subscription channel, higher ad intrusiveness leads to lower CTRs but higher CRs, while in the recommendation channel, lower ad intrusiveness may generate higher CTRs, but the proportion of genuine interest and subsequent purchases is smaller. "In addressing which channel has better ad performance, we show that the recommendation channel underperforms the subscription channel in converting sales, but excels at eliciting clicks," says the research team.

Takeaways for CMOs

The study offers key lessons for Chief Marketing Officers:

- If the goal is to convert ads to sales, companies should strive for high conversion rates. Conversely, if the goal is to drive traffic and generate interest, companies should strive for high click-through rates.

- If advertisers' goal is to maximize click-through rates, the [optimal strategy](#) is to release emotional ads with indirect links for both the subscription channel and the recommendation channel. Conversely, if advertisers want to maximize conversion rates, informational ads with indirect links work best for the subscription channel while emotional ads with indirect links are the best for the recommendation [channel](#).

- For recommendation channels, informational ads with direct links have the largest increase in click-through rates and the largest decrease in conversion rates. By contrast, emotional ads with indirect links have the largest decrease in click-through rates and the largest increase in conversion rates.