Online Algorithms and Consumer Decision-Making: A Case of Amazon Recommendations

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Automated recommendation systems run by Artificial Intelligence (i.e., machine learning algorithms) have two-fold influences on consumers. First, the systems can accelerate consumers decision. Second, the systems can also prevent consumers from additionally searching alternatives due to suggested results creating an anchor effect (Adomavicius et al., 2013). Based on the features of automated recommendation systems, the study examined if consumers would experience limited product alternatives when they search online marketplaces, such as Amazon, due to an automated recommendation system. The study collected experimental data using computer algorithms through nine Amazon accounts that were ordered to search 20 keywords 500 times in three categories. Three accounts for tech-related keywords, another three accounts for fashion-related keywords, and the last three accounts for nutrition-related keywords. After a 500-time search, the nine accounts began to search intersectional keywords 30 more times.

The nine accounts showed different search results. Specifically, even though the three accounts in each category utilized the same set of 20 keywords, the search from the keywords in a random order made the different results. Additionally, the last 30 times of using intersectional keywords did not change the search results made based on the first 500 times of search history.

Consumer behavior and consumers' decision-making can be changed while recommendation systems in online marketplaces are not quickly adjustable enough to reflect those possible changes. The algorithm of the recommendation is rather fixed in the major keywords that were the most frequently searched.

The findings do not devalue the automated recommendation system of online marketplaces but suggest a potential issue of its flexibility and adjustability. The findings also indicate the importance of consumer information and knowledge of how the online marketplace recommendation system works. Therefore, more discussion should be made to improve the automated recommendation to better reflect consumer decision-making.

References

Adomavicius, G., Bockstedt, J. C., Curley, S. P., & Zhang, J. (2013). Do recommender systems manipulate consumer preferences? A study of anchoring effects. *Information Systems Research*, *24*(4), 956-975.

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