Consumer Perception and Acceptance of AI-enabled Recommender System.

Recommender systems (RS) are designed to ease and enhance consumer decision-making in complex online environments. Albeit devised to be convenient and ancillary, recommender systems may, in turn, influence and even dominate consumer's choices with available means of choice architecture. This raises concerns about consumer freedom of choice, which can be hindered by a recommender system without consumers being aware of being manipulated.

In a one year project, the team from the Chair of Marketing and Consumer Research collaborated with the team from the Department of Informatics to develop a survey that uses a mock-up of an online food ordering screen and an information treatment to determine factors influencing consumer acceptance of a recommender system that employs nudging as a method to steer consumer choice in the desired direction.

The goals of the study were to determine (i) which factors influence consumer perception of an AI-enabled recommender system, (ii) whether this perception differs when nudging is included in the system and (iii) how the perceived manipulation and privacy concerns impair the acceptance of a recommender system for facilitating decision-making.

A survey based on the Technology Acceptance Model (TAM) was constructed to determine consumer perception and acceptance of a recommender system.

The main findings of the study included that
▶ Consumer acceptance is substantially determined by perceived system effectiveness and, to a lesser degree, by perceived ease of choice.
▶ Negative consumer concerns appeared to revolve around the information and algorithms used by an RS but not the methods of choice architecture used to modify choice environments.
▶ Perceived manipulation and privacy concerns negatively affected users' acceptance of a recommender system.
▶ Tracking user's online activities without asking for permission and engaging in data trading were examples of conducts by e-commerce platforms that cause consumer's privacy concerns.

From these findings, the team provided recommendations for AI-based e-commerce platforms to provide transparency on their handling of user's data and the reasons why certain items are recommended. Moreover, when business owners prompt certain products on AI-based e-commerce platforms, they should be more specific about the attributes of highlighted products. Instead of such descriptions as "popular choice" or "expert's recommendation", less ambiguous attribute descriptions like "healthier choice", "budget choice", or "most energy-efficient" can better facilitate consumers to navigate and select the products with features that meet their needs.

Plans for 2021
As the project winds down, the team is considering possible extensions of the research to include conducting more realistic and interactive experiments with a real recommender system or testing how people's perceived manipulation, acceptance of nudges and RS vary with different types of nudges. They will also complete the publication of the manuscript in the Journal of Interactive Marketing. ●

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Consumers' concerns appeared to be centered around the algorithms and the use of private information by a AI-enabled recommender system, but not around the possible modification of the choice environment.

Nudge me if you can ...

But I just want a Beacon Cheeseburger

This is healthier

This is popular

yummy!

2020 Papers, Projects and Achievements Highlights
▶ Best Poster Award 2020 (2nd place) at the TUM Research Fest
▶ Do Nudges Matter? Consumer Perception and Acceptance of Recommender Systems with Different Types of Nudges, Journal of Interactive Marketing (under review) (Dolgopolova, I., Li, B., Roosen, J.)
▶ Consumer Perception and Attitude towards AI-Based Recommender Systems and the use of digital nudging in online choice environments (an example of an online food ordering screen) (Masters Thesis)
▶ Nudging Healthy Food Choices via a Recommendation System: Consumer Trust and Privacy Concerns (Masters Thesis)

2020 Conferences
▶ 3rd FAccTRec Workshop on Responsible Recommendation at RecSys 2020, September 2020
▶ The Responsible AI Forum (TRAIF) Preview 2020, November 2020
▶ Semester Seminar of the Department of Agricultural Economics and Rural Development at the University of Göttingen 2020, December 2020