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# USER CONTROL AND ACCEPTANCE OF RECOMMENDER SYSTEMS

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## ABSTRACT

Recommender systems (RS) are systems that use historical information about user-item interaction in each online environment and suggest new items to users. Because of their high commercial importance, both their initial applications and research has focused on making them more accurate. However, it was later observed that users' preference changes over time and systems fail to catch up to those changes. Hence, the importance of personalization of RS had been concluded [1]. System engineers introduced control mechanisms which aimed to "involve the users in personalization process and have an immediate effect on recommendations" [2]. Previous research concluded ambiguous effects of those mechanisms. This raises the question about the acceptance of such systems which is the main objective of this study.

Traditionally, the acceptance of a particular technology is determined by one's behavioral intentions to use it [3]. Technology acceptance model (TAM) has been a seminal work in IT acceptance and adoption [4]. The core theory suggests that BI is affected by perceived ease of use and perceived usefulness. TAM has been extended and used extensively in numerous settings in IS literature. We also use TAM and broaden it with user control as an additional moderating variable. We hypothesize that control mechanisms have three main effects in this framework: a) it increases perceived usefulness b) it decreases perceived ease of use c) it has direct effect on behavioral intentions.

We develop an experimental design where a participant is presented with a choice task to select five options from a given choice set following a pre-defined user preference. Pre-defined preference allows us to evaluate their performance and tie their remuneration to it. Study subjects are also presented recommended options which in their initial state are detached from the pre-defined user preference. Participants can use control mechanisms to personalize the recommendations. By means of available tools, they can determine the level with which recommender system reflects their (pre-defined) tastes. Such setting allows us to study which part of performance differential is due to quality of recommendations. The ability to sort the options across any of the features is added to the interface. Notice, that even though using this feature could potentially help subjects to solve the task it does not provide a useful input to the recommender system and, therefore, does not change recommended options. Hence, it can be seen as a manifestation of the illusion of control.

Our study allows to explicitly evaluate trade-off between user control and RS acceptance. We also address the generalizability issue of the previous studies investigating user control. Additionally, this study can enable system designers to optimize user participation in personalization.

## Keywords

Recommender systems, technology acceptance, user control, personalization.

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