Personalising The Consumer Experience Using An AI-Driven Hybrid Recommender System

Personalisation in the online environment is increasingly prevalent due to the emergence of AI-driven algorithms and recommender systems (Hutmacher and Appel, 2023) which enable precise personalisation. However, the predominant emphasis in recommender systems research lies in enhancing its algorithm performance instead of comprehensively understanding the interests and behaviour of consumers who use the system (Bawack et. al., 2022).

Recommender systems present consumers with personalised products that align with their preferences which alleviate consumers' information overload and improve the quality of their decisions (Aljukhadar et. al., 2013). On the other hand, Huang and Zhou (2019) claimed that when consumers are exposed to very limited product alternatives their choice decisions are negatively affected.

While there is extensive literature that examines the effects of information framing on consumers' behaviour and purchase intentions (Levin et. al., 1988; Shan et. al., 2022), minimal research has explored the effects of different types of user-based recommendation framings generated by an AI-based hybrid recommender system on consumers behaviour, which would affect consumers using it (Xiao and Benbasat, 2007).

Therefore, this research advances our knowledge of consumer behaviour with personalised recommendations generated by an AI-based hybrid recommender system by examining the effects of recommendation framing and recommendation size on consumers' behaviour with an AI-based hybrid recommender system. Additionally, by investigating the effects of personalised recommendations generated by an AI-based hybrid recommender system on consumers' click-through and conversion rates.

The methodology begins with a pre-test manipulation check conducted on an online survey platform to ensure the effectiveness of the variables. Next, an AI-based hybrid recommender system prototype is developed. Subsequently, a series of experimental studies are conducted – (i) A one-way direct effect study is undertaken to examine the primary effect of personalisation on actual customer behaviour. (ii) Two separate 2x2 experimental designs are implemented – one involving personalisation and framing, and the other on personalisation and information load. (iii) A more comprehensive 2x2x2 experimental design is employed to investigate the effects of personalisation, framing, and information load. This approach

allows for a comprehensive understanding of the multifaceted aspects of personalisation generated by an AI-based hybrid recommender system and its influence on consumer behaviour across various experimental conditions.

This research contributes to knowledge in three folds. Firstly, it analyses actual consumer behaviour in response to recommendations generated by an AI-based hybrid recommender system within the automotive sector. Secondly, it advances our understanding of personalisation and consumer behaviour within the context of recommender systems. Additionally, it addresses a gap in the existing literature by examining the effects of different types of user-based framing on consumer behaviour, providing insights into this underexplored area. From a managerial perspective, this research underscores the potential to improve the accuracy and quality of recommendations by delving into consumer behaviour with recommender systems (Bawack et al., 2022). Furthermore, understanding consumers' preference towards recommendation size and framing type enhances the persuasiveness of recommendations. Lastly, the study mitigates the cost and risk associated with developing a fully functional recommender system that may not align with consumer preferences (Adomavicius et al., 2013; Bawack and Bonhoure, 2023).

Keywords: Recommender Systems, Artificial Intelligence, Personalisation, Consumer Behaviour