Lund University

MAMN50

Theoretical Perspectives in Interaction Design

From Convenience to Caution: The Impact of AI Recommendations on Privacy and User Trust

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Contents

Abstract

Artificial intelligence has revolutionized various sectors, with recommendation systems becoming integral to enhancing user experiences in online shopping and social media. However, the widespread adoption of AI recommendations comes with significant challenges, particularly concerning user privacy and trust. Our study delves into the dual nature of AI recommendation systems highlighting their benefits in creating tailored user experiences while also addressing the inherent risks, such as privacy concerns and potential algorithmic biases. By analyzing user perceptions through comprehensive surveys and employing theoretical frameworks like the Unified Theory of Acceptance and Use of Technology 2 (UTAUT 2), this paper seeks to provide a nuanced understanding of the factors influencing the acceptance and effectiveness of AI recommendations. Our findings underscore the necessity for transparency and ethical considerations in designing these systems, aiming to balance technological advancements with user trust and well-being.

1 Introduction

Artificial intelligence has sparked a global revolution, with recommendation systems standing out as a prominent application field in recent years. Leveraging AI, companies have elevated user experiences by seamlessly integrating enriched amenities into daily routines and facilitating decision-making [1]. These systems adeptly identify items aligning with users' preferences, drawing insights from their past interactions and presenting options in an engaging manner. Recommendation engines are commonly used in the entertainment industry to keep users glued in front of their screens. [2] We can get in touch with the recommendation system in every corner of everyday life. When we are browsing the online shopping website, many recommended items are offered to us to facilitate our choosing process, and many advertisements are aligned with our preferences. When using YouTube, we consistently notice that the recommended videos correspond closely to our search queries, followed by a cascade of additional relevant content suggestions. The recommendation systems greatly facilitate our consumption process and provide us with a better entertainment experience.

Although recommendation systems offer various advantages, their acceptance and usage are still hindered by obstacles such as privacy concerns, limited familiarity with new technology, and technological constraints [3]. Privacy concerns are particularly significant, as some customers are skeptical about recommendation systems, fearing that their data will be used without permission and potentially leaked to other platforms. Additionally, the recommendation results can occasionally be subpar or repetitive, which is a technological constraint

that may lead users to reject the system entirely. This issue is exacerbated if there is no option to disable the recommendation feature within an application. Therefore, designers of recommendation systems must consider not only algorithmic improvements but also factors influencing user acceptance.

In this paper, we endeavor to identify the pivotal factors shaping the adoption of recommendation systems and the risks associated with AI-powered recommendation systems, particularly within shopping services and social media applications. This objective will be pursued through a combination of user research and theoretical analysis. For our user research, we administered a questionnaire to capture diverse user perspectives comprehensively. Moreover, we leverage the Unified Theory of Adoption and Use of Technology 2 (UTAUT 2) model [4] to formulate and substantiate arguments based on our research findings.

Section 2 of this paper will delve into existing research concerning users' risk considerations in AI recommendation systems. Mainly we will focus on a journal by Sorban and analyze how AI recommendations can increase the risks to consumer well-being. [5] Following that, Section 3 will center on our chosen methodology to elucidate our research approach. In Section 4, we will present the outcomes of our user research, employing both quantitative and qualitative analyses. Section 5 will employ the UTAUT 2 model to extend the discussion of our findings. Finally, this paper concludes with a discussion of limitations and a summary of our key findings.

2 Related Work

Sorban's paper provides a detailed analysis of various dimensions of risk associated with AI-powered recommendation systems in streaming services [5], as outlined in Table 1.

Affected right	**Risk**
Dignity – human autonomy	Lack of transparency – black box
Integrity	May lead to addiction Inappropriate content
Privacy	User profiling and data leakage Data publishing Algorithm design User interface design Experimentation on user groups
Freedom of information	Filter bubble Lack of transparency – black box
Equality, non-discrimination	Activity bias Algorithmic bias Cognitive bias of the user
Diversity	Lack of transparency – black box with lack of diversity in the recommendations

Table 1: Risk map of AI-powered recommendation systems

The discussion begins with the examination of human autonomy and dignity, emphasizing how recommendation algorithms can limit users' freedom of choice by filtering content options. The opacity of algorithmic decision-making processes, often treated as "black boxes," further complicates user understanding and consent. Transparency is highlighted as crucial to preserving dignity, allowing users to make informed choices about the content they consume.

Integrity concerns are raised next, focusing on the potential psychological impacts of recommendation systems, including excessive usage and exposure to inappropriate content. The analysis underscores the importance of safeguarding users' mental well-being and ensuring that content recommendations align with individual preferences and cultural sensitivities.

Privacy emerges as a central challenge, with particular attention to user profiling, data leakage, and algorithmic design. The discussion highlights the ethical implications of unsolicited data collection and the risks of experimentation on user groups without informed consent. Examples of privacy breaches and the manipulation of user data underscore the need for robust privacy protections in recommendation systems.

The analysis also addresses issues related to freedom of information and expression, emphasizing the risk of filter bubbles and the potential for recommendation systems to shape users' media consumption habits. Concerns about the gatekeeping power of streaming ser-

vice providers and the impact on content creators' visibility and credibility are discussed in the context of freedom of expression.

Finally, the analysis examines the principles of equality, non-discrimination, and diversity. Biases inherent in recommendation algorithms, including activity bias and algorithmic bias, are explored, along with their implications for user experience and content diversity. Regulatory obligations to promote European audiovisual culture and the role of recommendation systems in supporting niche content are also discussed.

Overall, the analysis provides a comprehensive overview of the ethical and legal implications of AI-powered recommendation systems in streaming services, highlighting the complex interplay between technology, user rights, and societal values.

3 Method

3.1 Questionnaire

In the Appendix, you can find the questions we asked our users to collect data for our research. The whole questionnaire can be divided into 4 parts. The first part includes the first two questions, which aim to gain basic information. The second part is designed to ask our participants about their preferences for AI recommendation systems in social media, including social platforms and the usage of the AI recommendation systems. The third part is about the AI recommendation systems in shopping websites, and the content is almost the same as the second part. The last part is about the risk of AI recommendation and how satisfied people are with AI recommendation systems, which is the last four questions.

The inclusion of both multiple-choice and open-ended questions in our questionnaire was instrumental in capturing a diverse range of responses from participants. While multiple-choice questions provide structured data that can be easily quantified and analyzed, the open-ended questions allowed participants to express their thoughts, opinions, and experiences in their own words. The valuable insights provided through these open-ended responses enriched our understanding of consumers' perceptions and attitudes toward AI recommendations, complementing the quantitative data obtained from the multiple-choice questions. By incorporating open-ended questions, we were able to capture nuanced perspectives and uncover additional themes and insights that may have been overlooked with a solely quantitative approach. The qualitative data gleaned from participants' notes facilitated a deeper exploration of the factors influencing consumers' risk perceptions and shed light on their underlying motivations and concerns. Moving forward, we recognize the importance of maintaining a balance between structured and open-ended questions in our surveys to ensure a comprehensive understanding of the research topic and to leverage the strengths of both

quantitative and qualitative data in our analysis.

3.2 Theory and Framework

The UTAUT Model 2, or Unified Theory of Technology Adoption and Use 2, is an extension and modification of the original UTAUT model [6] to better fit the consumer environment. The core concept of the UTAUT Model 2 integrates constructs from pre-existing technology adoption models to explain an individual's intention to use technology and subsequent use behavior. The following is a summary of the key components and constructs of the UTAUT 2 model [4]:

Component	**Definition**
Performance expectancy (PE)	The extent to which individuals believe using technology improves job performance
Effort Expectancy (EE)	The ease of use of the technology. The simpler the technology, the greater its acceptance.
Social Influence (SI)	The extent to which individuals believe that other people close to them think that they should use the new system.
Facilitating Conditions (FC)	The degree to which individuals consider that the organizational and specialized infrastructure to be in place to support the utilization of the system
Hedonic Motivation (HM)	The degree of enjoyment from the use of technology has an influential impact on the willingness to use it.
Price Value (PV)	The trade-off between the perceived benefits of applications and the monetary cost of using them
Habit (HT)	The extent to which people tend to automate behaviors through learning

Table 2: UTAUT 2

The model also proposes direct and indirect relationships between these constructs, i.e. facilitating conditions and habits influence usage behavior directly or indirectly through behavioral intentions. The extended model (UTAUT 2) is designed to provide a more in-depth explanation of technology adoption and use, and is therefore particularly valuable for under-

standing consumer adoption of technological innovations such as social media applications and shopping websites.

In addition to these factors, this paper [7] also included technology fear (TF) and trust (TR) to further extend the UTAUT 2 model. We believe these components are crucial to our work. Within the realm of recommendation systems, user trust, and technology fear emerge as significant factors influencing the adoption of this innovative technology. Consequently, we have formulated our arguments within the framework of the UTAUT 2 model to account for these considerations.

Arguments 1 (A1). Performance expectancy positively affects the user experience of recommendation systems.

Arguments 2 (A2). Hedonic motivation positively influences the user experience of recommendation systems.

Arguments 3 (A3). Technology fear negatively influences the user experience of recommendation systems.

Arguments 4 (A4). Trust positively influences the user experience of recommendation systems.

4 Results

In total, we got 64 answers from our questionnaire. We will analyze the data from 4 perspectives: General Information, Social media with AI recommendation system, AI and interaction design for the Shopping applications, and Risks of AI recommendations.

4.1 General Information

90.6% of respondents were from the age group 18 to 35, and 6.3% of respondents were from the age group 35 to 50. No respondent was under age of 18 and 1 person was over 50 years old. Among all the respondents, 57.8% were students.

Almost all respondents agree that they are familiar with AI recommendation systems and most respondents find AI recommendations on these platforms relevant to their interests and preferences. For overall satisfaction with the recommendations, around half of the respondents kept a neutral attitude and 29% of respondents gave a high score.

As for their trust in AI recommendation systems, most people kept a neutral and positive attitude. Some users expressed skepticism towards recommendation systems, primarily due to concerns about the accuracy of previous suggestions and privacy issues. Additionally, nearly 40% of respondents viewed these systems as increasing their dependence on digital products. This group perceived that the recommendations closely matched their preferences,

which in turn encouraged them to spend more time using the system. As for privacy, most people felt uncomfortable regarding the utilization of their personal data.

When it came to the overall idea of the AI recommendation system, most people mentioned that it was interesting and useful. However, some people mentioned their concerns related to information safety and privacy. They thought their information was leaked without permission and sometimes they could not find a way to disable this function. A few people thought it was useless and just a waste of their time.

For improvement, most people mentioned they want to have control over the degree of personalization and want the system can be more intelligent and provide them with more comprehensive information.

4.2 Social media with AI recommendation system

4.2.1 Social media preference

The results are shown in Fig.1.

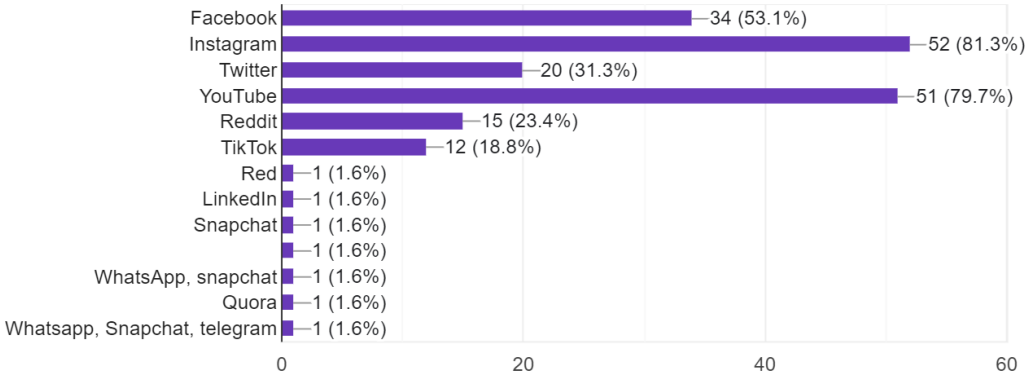

Fig. 1: Social media reference results

Generally, Instagram and YouTube were two of the most popular social networking apps, as 81.3% of respondents used Instagram and 79.7% used YouTube. Facebook also had a significant user base, with a rate of 53.1%. Twitter, Reddit and TikTok enjoyed fewer users than we expected, which are 31.3%, 23.4% and 18.8%. Also, almost everyone uses more than one platform.

Specifically, for the age group 18 to 35, Instagram and YouTube were still the most popular platforms, but the percentages had both reduced to 50%. The rankings of the other platforms remain unchanged, but the gap in their proportions has narrowed.

For the age group 35 to 50, things were different. Facebook became the most popular social media, followed by Instagram and YouTube. However, the gap between these three platforms was quite small and between the others was quite huge. Thus, Facebook, Instagram and YouTube were considered the most popular platforms among this age group.

As for those over 50, the data size was too small, and thus we did not analyze it here. In summary, Instagram and YouTube are the most popular platforms among our participants.

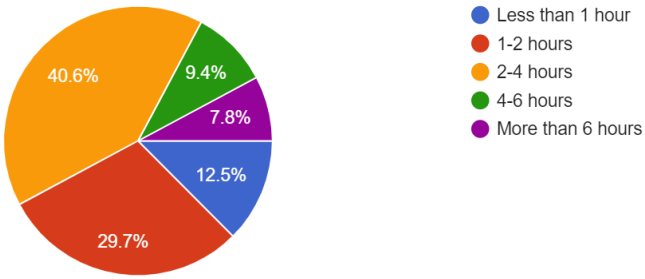

Fig. 2: Time spent on social media

For the time spent on social media, the results are shown in Fig.2. From the figure, 40.6% of people spent 2 to 4 hours per day and 29.7% of people spent 1 to 2 hours per day. Considering the age, in the age group 18 to 35, 41.4% of people spent 2 to 4 hours per day, and 27.6% of people spent 1 to 2 hours per day. In the age group 35 to 50, 75% of people spent 1 to 2 hours per day, and the remaining 25% spent 2 to 4 hours per day. In summary, most of the participants spend 1 to 4 hours per day.

4.2.2 AI recommendation system preference

Generally, 89.1% of respondents showed that they were familiar with AI recommendation systems (personalized recommendations), and 62.5% of people used personalized recommendations in social media. Also, in the group who are familiar with AI recommendation systems, around 66.7% of people used AI recommendation systems. As for those who are not familiar with AI recommendation systems, 28.6% of them used AI recommendation systems, and they were all from the age group 18 to 35. Considering social media always persuades users to use AI recommendation systems (personalized recommendations) in the very beginning, people may agree to use AI recommendation systems without knowing it, especially those who are eager to use the software.

Considering age, 91.4% of respondents from the age group 18 to 35 said they are familiar with AI recommendation systems, and the number of age group 35 to 50 is 75.0%. 63.8% of people from the age group 18 to 35 preferred to use AI recommendation systems, while 75.0% of people from the age group 35 to 50 preferred to use AI recommendation systems, which is quite interesting but needs more data to check. What is more, In the age group 18 to 35, 66.0% of those who were familiar with AI recommendation systems used them and that number in the age group 35 to 50 is 100%, which might be a false result arising from too little data.

Besides, 64.1% of respondents in total believed that AI recommendations on these platforms were relevant to their interests. The number of those who were familiar with AI recommendation systems and used the systems was 89.5%. Considering the age, the results were quite similar to the general situation.

In our questionnaire, we asked respondents to rate their overall satisfaction with the recommendations they receive on social media platforms. We set 5 as the highest score in this question. 48.6% of the respondents gave a rating of 3, 26.6% gave a rating of 4, 20.3% gave a rating of 2, 3.1% gave a rating of 1, and 1.6% gave a rating of 5. The average number is 2.9.

4.3 AI and interaction design for the Shopping applications

The survey focused on online clothing shopping habits among young adults aged 18-35, a demographic known for their technological savvy and enthusiasm for innovative features.

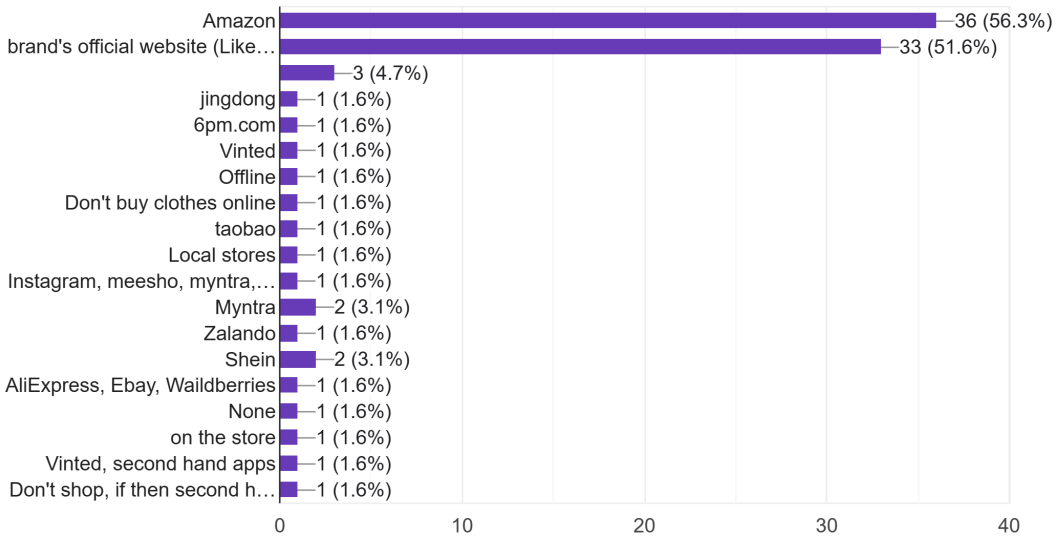

Fig. 3: Preferred Platforms for Shopping Clothes

The findings reveal several key trends. A majority of 56.3% of respondents prefer shopping for clothes on Amazon, highlighting its dominance in the online retail space. Close behind, 51.6% of users favor shopping directly from brand-specific websites, indicating a significant level of trust and loyalty towards individual brands as shown in Fig.3.

In terms of shopping frequency, the data shows diverse patterns. A notable 25% of users access online clothing stores a few times a week, suggesting a high level of engagement and frequent interaction with these platforms. Additionally, 20.3% of respondents shop for clothes online once a week, while a smaller segment, 2%, visits these sites daily. This variation in shopping frequency underscores the regularity with which this age group integrates online shopping into their routines.

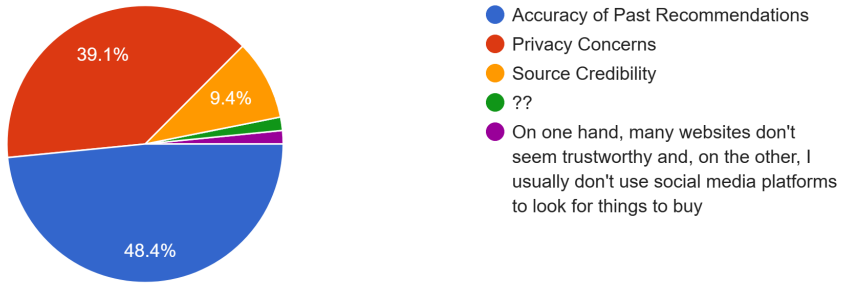

Fig. 4: Factors Influencing Trust in Online Shopping

Awareness of AI-driven recommendations is high among respondents, with 89.1% acknowledging their presence while shopping for clothes online. The survey also reveals various factors that influence users' decisions to trust or ignore AI recommendations on online shopping platforms. Among the respondents, the most significant factor is the accuracy of past recommendations as shown in Fig.4, which affects 48.4% of users. Privacy concerns are the second most influential factor, impacting 39.1% of respondents. Source credibility influences 9.4% of users' trust in AI recommendations. Additionally, a few users provided custom responses, indicating distrust towards many websites and a general disinterest in using social media platforms for shopping purposes.

Furthermore, personalized recommendations play a crucial role in the shopping experience for many users. The survey shows that 62.4% of users rely on these tailored suggestions to enhance their shopping journey.

4.4 Risks of AI recommendations

Understanding the potential risks associated with AI-generated recommendations is crucial for improving these systems and addressing user concerns. This section provides an analysis of the feedback we received from respondents regarding their apprehensions and perceived risks related to AI recommendations.

To begin with, we had an open-ended question to understand what the users think of AI recommendation systems.

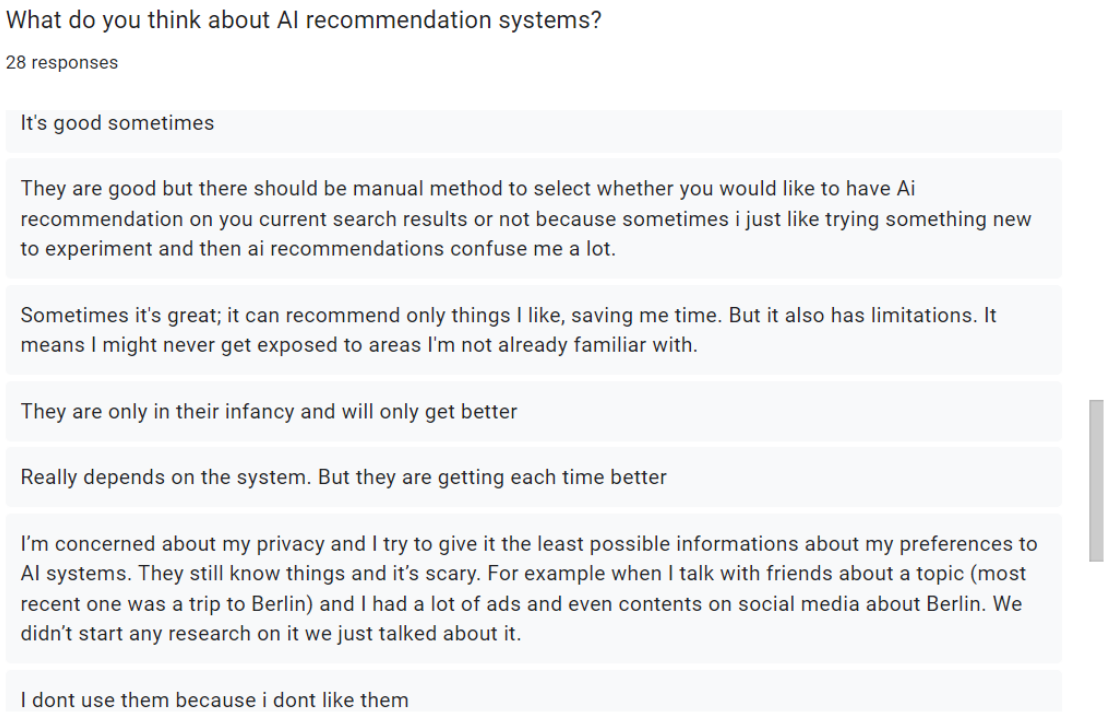

Fig. 5: What people think of AI recommendation systems

By asking these questions we wished to gather people's overall opinions about the recommendation systems and understand how it makes them feel. From Fig.5 we see that we got diverse answers. Some have a positive outlook on the topic, while others are concerned about their privacy. AI recommendations have potential risks that we need to take into consideration.

It can also make people addicted to the platforms and spend hours without making any purchases. By recommending things the user likes the user will stay on the platform more.

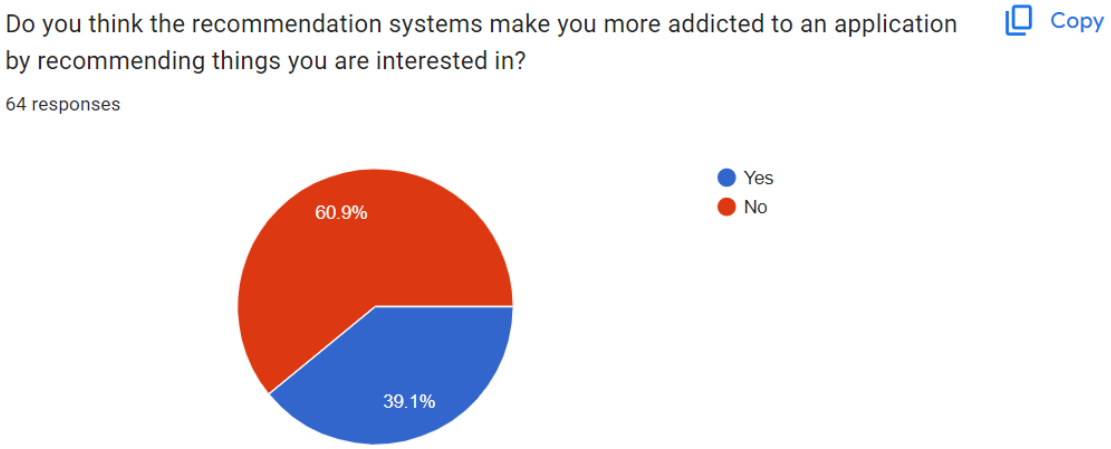

Fig. 6: Does AI recommendations make people addicted

As shown in Fig.6 we see that the majority of our respondents said the recommendation systems do not make them addicted. However, 39.1%, which is 25 people, get addicted to applications with AI recommendation systems. For further analysis, we had a follow-up question for the people who said yes.

We aimed to delve deeper into our respondents' perspectives and understand their experiences with becoming addicted to platforms utilizing recommendation systems. By integrating open-ended questions into our questionnaire, we gathered valuable insights that can enhance user experience with online shopping and interactions on platforms featuring AI recommendations.

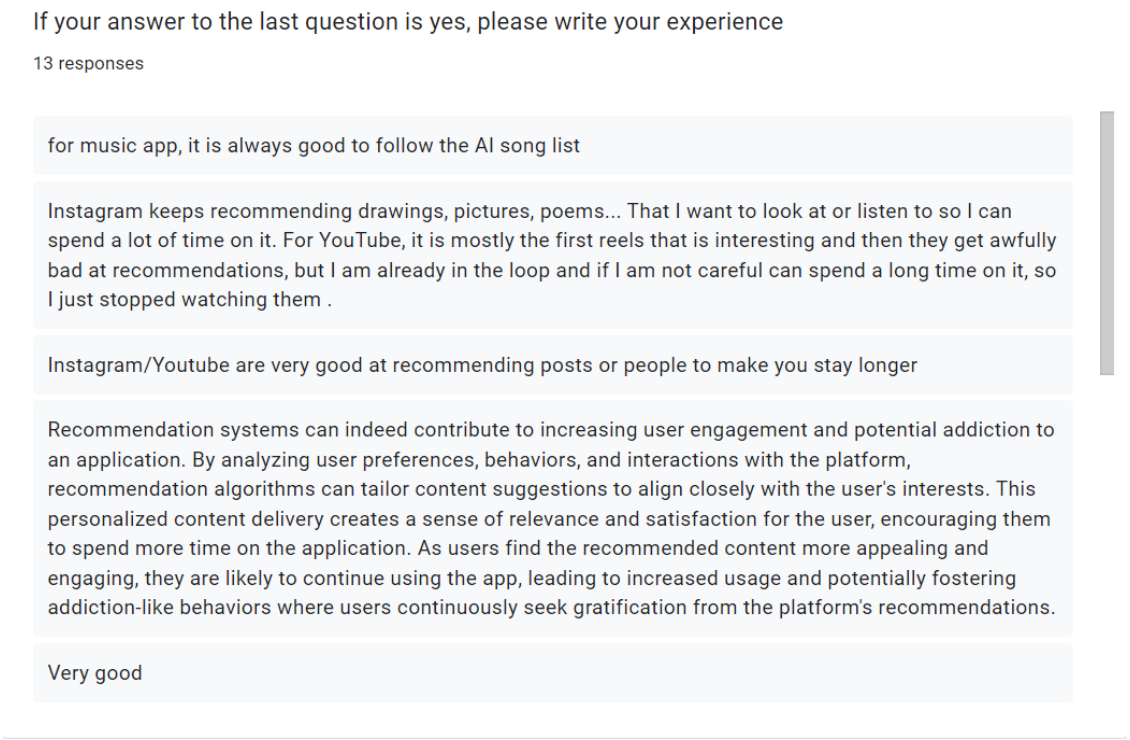

Fig. 7: Follow-up question

Here in Fig.7 we observe that many respondents have shared detailed accounts of their experiences with addiction to platforms driven by recommendation systems. While some noted positive effects, such as discovering enjoyable content, there remains a significant risk to their overall wellness, including potential time wastage and decreased productivity due to excessive use of social media.

5 Discussion

5.1 Social media with AI recommendation

For Argument 1 (A1): Performance expectancy positively affects the user experience of recommendation systems, the data indicates that 89.5% of users familiar with AI recommendation systems found the recommendations relevant to their interests. This suggests a positive correlation between high-performance expectancy (i.e., the expectation that the

system will provide relevant and useful content) and the adoption of recommendation systems. The average satisfaction rating for recommendation content was 2.9 out of 5, which, although not very high, indicates a certain level of approval of system performance that might encourage continued use.

Although the survey data does not directly address hedonic motivation, we can infer that the high frequency of social media and AI recommendation system use (e.g., 41.4% of users aged 18 to 35 spend 2 to 4 hours per day) may be partly driven by hedonic motivations—seeking pleasure and entertainment. This motivation likely drives their acceptance and enjoyment of the personalized experiences provided by recommendation systems.

The results show that only 28.6% of users unfamiliar with AI recommendation systems actually used them, likely reflecting the negative impact of technology fear on adoption behavior. Being unfamiliar or uncomfortable with the technology could make users anxious, thus inhibiting their willingness to try or continue using the systems.

Trust can be indirectly inferred from the high usage rates and perceptions of relevance. For instance, between 66.0% to 100% of those familiar with recommendation systems actively used them, indicating that they trust the systems to provide valuable content.

There are also some movies depicting the issues with AI recommendation systems, one of which is "The Social Dilemma", directed by Jeff Orlowski and written by Orlowski, Davis Coombe, and Vickie Curtis. The movie shows how these recommendation systems affect users' well-being, which we also addressed in our survey. Through interviews with industry insiders and experts, the film delves into the algorithms that power social media platforms and their profound impact on user behavior and society at large. "The Social Dilemma" highlights how these recommendation algorithms prioritize user engagement and ad revenue over user well-being, leading to issues such as addiction, polarization, and misinformation. By exposing the mechanisms behind personalized recommendations and the manipulation of user attention, the film underscores the ethical and societal implications of AI recommendations, urging viewers to reconsider their relationship with technology. The insights gleaned from "The Social Dilemma" resonate with the findings of our paper, emphasizing the importance of addressing the risks inherent in AI recommendations and advocating for greater transparency, accountability, and user empowerment in technology design and regulation.

5.2 AI and interaction design for the Shopping app

The integration of Artificial Intelligence (AI) into online shopping applications has emerged as a pivotal aspect of modern e-commerce, revolutionizing the way users interact with shopping platforms. This discussion delves into the profound impact of AI on the online shopping experience, as evidenced by the findings derived from a comprehensive survey.

5.2.1 Awareness and Acceptance of AI Recommendations:

This section directly aligns with A1 (Performance expectancy). The high level of awareness among users regarding AI recommendations indicates their expectation of improved performance from recommendation systems. Users understand that AI can deliver personalized recommendations based on past interactions, thereby enhancing the overall shopping experience. This awareness positively influences the adoption of recommendation systems as users expect them to perform effectively.

5.2.2 Impact on User Behavior:

This part of the discussion corresponds with A4 (Trust). The statistic revealing that nearly half 48.4% of users are influenced by the accuracy of past recommendations provided by AI demonstrates the importance of trust in users' behavioral intention to engage with recommendation systems. This underscores the pivotal role of AI in shaping users' purchasing decisions, as it instills confidence and trust in the platform's ability to curate items tailored to their individual tastes.

5.2.3 Elevating the Shopping Experience:

This section relates to multiple arguments:

A1 (Performance expectancy): The discussion emphasizes how AI enhances the online shopping experience by providing personalized recommendations, which aligns with users' expectations of improved performance from recommendation systems.

A2 (Hedonic motivation): The personalized nature of AI-driven recommendations caters to users' hedonic motivations by offering them a more enjoyable and engaging shopping experience.

A4 (Trust): By seamlessly integrating AI into every stage of the shopping journey, platforms build trust with users, positively influencing their behavioral intention to engage with recommendation systems.

5.2.4 Future Implications and Opportunities:

This part of the discussion is closely related to A1 (Performance expectancy). As AI technology evolves, it presents opportunities to further streamline the online shopping experience, reducing the effort required for users to discover relevant products. Anticipating users' needs and delivering tailored experiences aligns with users' expectations of convenience and efficiency, thereby positively influencing their behavioral intention to utilize recommendation systems.

5.3 Risks of AI recommendations

Even though AI offers benefits like experience personalization, it can also spark consumer fear and distrust either because companies are not fully transparent with their customers about using their data, or because customers are unaware of how the technology works.

5.3.1 Privacy Concerns and Risk Perception:

Recent research by Rohden and Zeferino (2023) [8] delves into consumers' risk perceptions toward artificial intelligence in recommendation agents. Their analysis sheds light on the privacy concerns that arise from the utilization of AI in recommendation systems. Similarly, Banker and Khetani (2019) [5] emphasize the potential risks to consumer well-being stemming from overdependence on algorithmic recommendation systems, highlighting the need for caution in their implementation.

5.3.2 Ethical and Legal Implications:

Sorban (2021) [9] explores the ethical and legal implications associated with AI-powered recommendation systems in streaming services. Their work underscores the importance of considering the broader societal and ethical implications of recommendation algorithms, particularly in the context of digital media consumption.

5.3.3 Algorithmic Bias and Fairness:

Cabrera-Sánchez et al. (2020) [7] discuss factors influencing the use of online recommendation systems in e-commerce, including considerations related to algorithmic bias and fairness. Their study underscores the need for transparency and accountability in recommendation algorithms to mitigate the risk of perpetuating biases and ensuring equitable outcomes for users.

By drawing upon these studies, we can deepen our understanding of the multifaceted risks associated with AI recommendations, encompassing privacy concerns, ethical considerations, algorithmic bias, and their broader societal implications. Incorporating insights from these diverse perspectives can inform the development of more robust and responsible AI recommendation systems that prioritize user well-being and societal values.

6 Limitations

Acknowledging the limitations of our study is crucial for a comprehensive understanding of its findings. One notable constraint we encountered was the time constraint imposed on gathering data from user surveys. Despite our efforts to recruit a sizable sample size of approximately 100 participants, we ultimately only managed to obtain responses from 64 individuals. This limitation may have implications for the generalizability of our results, as the smaller sample size could potentially affect the statistical power and robustness of our findings. However, it is essential to recognize that despite this limitation, our study still provides valuable insights into consumers' risk perceptions toward AI recommendations. The data collected from our survey, although smaller than initially anticipated, offers meaningful qualitative and quantitative data that contribute to the existing body of knowledge in this field. Moving forward, we recognize the importance of allocating sufficient time and resources for data collection to ensure a more comprehensive and representative sample in future research endeavors. Additionally, implementing diverse recruitment strategies and leveraging multiple data collection methods could enhance participant engagement and increase the likelihood of achieving a larger sample size, thereby addressing this limitation and strengthening the validity of our findings.

7 Conclusion

In conclusion, this paper has provided a comprehensive analysis of the risks associated with AI recommendations in online shopping and social media applications, within the broader context of Human-Computer Interaction (HCI). By synthesizing insights from user research, theoretical frameworks, and existing literature, we have illuminated the multifaceted nature of these risks and their implications for user acceptance and well-being.

Through our examination of user perceptions and behaviors, we have identified several key challenges that accompany the widespread adoption of AI recommendation systems. Privacy concerns emerge as a significant barrier to user trust and acceptance, as individuals express apprehension regarding the handling and utilization of their personal data. Moreover, the potential for algorithmic bias and manipulation underscores the ethical and societal implications of recommendation algorithms, highlighting the need for transparency and accountability in their design and implementation.

In short, this paper calls for a thoughtful approach to AI recommendations. It stresses the need to think about people's needs and values in tech design. With collaboration and a focus on users, we can make AI recommendations work better for everyone while keeping them

safe and fair.

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A Appendix

Dear Participant,

We are master's students studying Virtual Reality and Augmented Reality at Lund University. As part of our research, we are conducting a study on the impact of Artificial Intelligence (AI) in recommendation systems and its influence on our daily lives and interactions with technology. Your insights will help us understand how AI recommendations influence user behavior and preferences.

Your participation involves:

- Completing a survey on your usage of social media and online shopping platforms.
- Sharing your opinions on AI recommendations on these platforms.
- Your responses will be anonymous and confidential, used solely for academic research. They will be deleted after this project.

Thank you for contributing to our study.

Sincerely,

Anush, Jiuming, Yanling, and Garima
Master students of LTH

A.1 Which age group do you belong to?

◯ under 18
◯ 18 to 35
◯ 35 to 50
◯ over 50
◯ Do not wish to answer

A.2 Are you currently a student?

◯ Yes
◯ No

A.3 Which social media platforms do you use?

- □ Facebook
- □ Instagram
- □ Twitter
- □ YouTube
- □ Reddit
- □ TikTok
- □ Other...

A.4 Which platform do you use for shopping clothes?

- □ Amazon
- □ brand's official website (Like H&M)
- □ Other...

A.5 Are you familiar with AI recommendation systems (personalized recommendations) on social media and online shopping platforms?

- ◯ Yes
- ◯ No

A.6 Do you use personalized recommendations for social networking and clothing shopping?

- ◯ Yes
- ◯ No

A.7 Do you find AI recommendations on these platforms relevant to your interests and preferences?

- ◯ Yes
- ◯ No

A.8 How many hours do you spend on social media per day?

◯ Less than 1 hour
◯ 1-2 hours
◯ 2-4 hours
◯ 4-6 hours
◯ More than 6 hours

A.9 How often do you open clothing shopping websites (even if you don't buy anything)?

◯ Multiple times a day
◯ Once a day
◯ Few times a week
◯ Once a week
◯ Rarely or never

A.10 Have AI recommendations influenced your decision to shop online?

◯ Yes
◯ No
◯ Sometimes
◯ Don't know

A.11 How would you rate your overall satisfaction with the recommendations you receive on social media platforms?

Very Dissatisfied 1 2 3 4 5 → Very Satisfied

A.12 How much do you trust the AI recommendation systems on these platforms?

◯ Low
◯ Medium
◯ High

A.13 What factors influence your decision to trust or ignore AI recommendations on these platforms?

- ◯ Accuracy of Past Recommendations
- ◯ Privacy Concerns
- ◯ Source Credibility
- ◯ Other...

A.14 Do you think the recommendation systems make you more addicted to an application by recommending things you are interested in?

- ◯ Yes
- ◯ No

A.15 If your answer to the last question is yes, please write your experience

Long answer text

A.16 Have AI recommendations ever overwhelmed you with choices? Rate your overall experience

Not at all — 1 — 2 — 3 — 4 — 5 → Extremely

A.17 What do you think about AI recommendation systems?

Long answer text

A.18 Do you feel comfortable knowing that your interactions and browsing behavior are used to personalize the recommendations you receive?

- ◯ Yes
- ◯ No

◯ Maybe
◯ No Opinion

A.19 Are there any specific improvements or enhancements you would like to see in the AI-driven recommendation feature?

Long answer text