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## **Research Proposal Report**

# **The Impact of Artificial Intelligence on Consumer Purchase Decisions: A Case Study of Amazon**

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## **Executive Summary**

This research examines the impact of Artificial Intelligence (AI) on consumer purchase decisions in the online retail sector, with a particular focus on Amazon. AI has emerged as a critical driver of digital transformation, enabling organisations to analyse vast amounts of data, enhance operational efficiency, and deliver highly personalised customer experiences. In the context of e-commerce, Amazon extensively utilises AI technologies such as recommendation systems, chatbots, and targeted advertising to influence consumer behaviour and improve sales performance.

The primary aim of this study is to investigate how AI-driven tools shape consumer purchase decisions. Specifically, the research identifies key AI applications used by Amazon, evaluates their influence on consumer behaviour, and analyses customer perceptions towards personalised recommendations. In addition, the study critically examines both the benefits and challenges associated with AI adoption, including improved convenience, enhanced user experience, as well as concerns related to data privacy, transparency, and algorithmic bias.

A quantitative research approach is adopted, using an online survey to collect primary data from 100–150 respondents who have experience using Amazon. The collected data will be analysed using statistical tools such as Excel and SPSS to identify relationships between AI-driven personalisation and consumer purchase intention.

The findings are expected to demonstrate that AI significantly influences consumer purchase decisions by reducing search effort, increasing convenience, and delivering relevant product recommendations. However, the study also anticipates identifying challenges related to trust and ethical concerns, which may affect consumer acceptance of AI systems.

This research contributes to existing literature by providing empirical insights into the role of AI in shaping consumer behaviour within a real-world e-commerce context. It offers practical implications for businesses seeking to implement effective, transparent, and customer-centric AI strategies while addressing potential risks associated with AI adoption.

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## 1.Introduction

Artificial Intelligence (AI) has become a fundamental driver of digital transformation across industries, particularly within the online retail sector. AI refers to the ability of machines and computer systems to simulate human intelligence processes, including learning, reasoning, and decision-making, through advanced algorithms and data analysis (Russell and Norvig, 2021; Kaplan and Haenlein, 2019). With the rapid development of technologies such as machine learning, big data analytics, and natural language processing, AI enables organisations to process large volumes of data and generate predictive insights that enhance both operational efficiency and customer experience (Davenport, Guha and Grewal, 2021).

The growth of online retail has significantly transformed consumer purchasing behaviour and business models worldwide. Over the past decade, the expansion of e-commerce has been driven by increasing internet penetration, widespread use of mobile devices, and rising consumer demand for convenience and speed (Laudon and Traver, 2023). Global online retail sales continue to grow rapidly, reflecting a clear shift from traditional brick-and-mortar stores to digital platforms (Statista, 2024). This shift has intensified competition among online retailers, encouraging firms to adopt advanced technologies such as AI to differentiate themselves and enhance customer engagement (Chatterjee et al., 2021).

Among major e-commerce companies, Amazon is widely recognised as a pioneer in the adoption of AI technologies to improve the online shopping experience. The company extensively uses AI-driven recommendation systems that analyse user behaviour, browsing history, and purchase patterns to provide personalised product suggestions (Smith and Linden, 2017; Huang and Rust, 2021). These systems play a significant role in influencing consumer purchase decisions by reducing search effort and increasing the relevance of product offerings. In addition, Amazon employs AI-powered chatbots and virtual assistants to provide real-time customer support, thereby enhancing service efficiency and customer satisfaction (Davenport et al., 2020). AI is also utilised in targeted advertising, where personalised advertisements are delivered based on consumer data, increasing conversion rates and purchase intention (Grewal et al., 2021).

The integration of AI into online retail platforms represents a fundamental shift in how consumers interact with digital marketplaces. AI-driven systems enable highly personalised, efficient, and interactive shopping environments, where consumer choices are increasingly influenced by algorithm-based recommendations (Huang and Rust, 2021; Davenport, Guha and Grewal, 2021). However, this growing reliance on AI also raises critical concerns regarding consumer autonomy, trust, and transparency. Research suggests that consumers may be hesitant to rely on AI systems due to perceived risks such as lack of control, privacy concerns, and algorithmic bias (Longoni, Bonezzi and Morewedge, 2019).

Despite the numerous advantages associated with AI adoption, including improved customer experience and operational efficiency, its implementation presents significant challenges. Issues related to data privacy, ethical considerations, and the opacity of algorithmic decision-making processes may negatively impact consumer trust and acceptance (Kaplan and Haenlein, 2019; Chatterjee et al., 2021).

Therefore, it is essential to critically examine both the positive and negative implications of AI in online retail.

Given the increasing importance of AI in shaping consumer behaviour, this study aims to investigate its impact on consumer purchase decisions within the context of Amazon. By analysing how AI-driven technologies influence consumer decision-making processes, this research seeks to provide valuable insights into the opportunities and challenges associated with AI adoption in the evolving digital marketplace.

## 2. Background & Rationale

The rapid growth of digital technologies has made Artificial Intelligence (AI) a key driver of change in the online retail sector. Among global e-commerce companies, Amazon is widely recognised for its innovative use of AI to improve both operational efficiency and customer experience. Its business model relies heavily on data analytics and machine learning, allowing it to deliver personalised services at scale. Amazon's use of AI in product recommendations, search optimisation, logistics, and customer service makes it a strong case for studying the impact of AI on consumer purchase behaviour (Brynjolfsson and McAfee, 2017; Kannan and Li, 2017).

Amazon is also selected due to its dominant market position and continuous investment in advanced AI technologies. By analysing large volumes of consumer data, the company can predict customer preferences with high accuracy, influencing purchasing patterns more effectively than traditional retail models (McAfee and Brynjolfsson, 2017). This highlights how AI not only supports operations but also shapes consumer decision-making.

Consumer behaviour has changed significantly with the rise of digital platforms. Today's consumers expect convenient and personalised shopping experiences, leading to more technology-driven decision-making (Lemon and Verhoef, 2016). Online shoppers are increasingly influenced by recommendations, reviews, and personalised content rather than relying only on their own judgement. This shows the growing role of AI in guiding purchase decisions (Wedel and Kannan, 2016).

AI-driven personalisation plays a central role in this shift. It involves tailoring products and content based on user preferences and past behaviour. On Amazon, recommendation systems suggest relevant products, often leading to impulse purchases. Research shows that many online purchases are influenced by such systems (Gómez-Urbe and Hunt, 2015).

While personalisation improves customer satisfaction and strengthens brand loyalty (Bleier, Harmeling and Palmatier, 2019), it also raises concerns about privacy, consumer control, and algorithmic bias.

Therefore, this study examines how AI-driven personalisation influences consumer purchase decisions, using Amazon as a case study. It aims to provide insights into the evolving digital marketplace.

Amazon's personalised homepage, which displays products based on user activity and purchase history, clearly demonstrates how AI enhances customer engagement.

### 3. Research Aim

The aim of this research is to examine how Artificial Intelligence influences consumer purchase decisions in online retail, focusing on Amazon. This research is particularly relevant today due to the rapid advancement of Artificial Intelligence and its widespread integration into e-commerce platforms. Amazon serves as an ideal case study because of its leadership in AI-driven innovation and large, diverse customer base, enabling comprehensive analysis of consumer behaviour. Understanding this impact is crucial as businesses increasingly rely on AI to remain competitive (Dwivedi et al., 2023; Kumar et al., 2023).

## 4. Research Objectives

- To identify the AI tools used by Amazon in online retail
- To analyse the impact of AI on consumer buying behaviour
- To examine customer perceptions of AI-driven recommendations
- To evaluate advantages and challenges of AI in influencing purchase decisions

## 5. Research Questions

- How does Amazon use Artificial Intelligence in its online retail platform?
- How does AI influence consumer purchase decisions on Amazon?
- What are customers' perceptions of AI-based recommendations and personalised suggestions?
- What are the benefits and limitations of AI in shaping consumer buying behaviour?
- To what extent does AI increase customer satisfaction and purchase intention?
- To what extent does trust moderate the relationship between AI recommendations and purchase decisions?"

## 6. Literature Review

### 6.1 AI in Online Retail

Artificial Intelligence (AI) has become an important driver of change in online retail, helping organisations improve efficiency and enhance customer experiences.

Technologies such as machine learning, predictive analytics, and natural language processing enable firms to analyse large amounts of data and generate insights for better decision-making (Dwivedi et al., 2021). In platforms like Amazon, AI is widely applied in personalised recommendations, automated customer support, and targeted marketing, all of which help increase customer engagement and sales (Verhoef et al., 2021; Shankar, 2018).

Many studies highlight the benefits of AI, showing how it supports proactive marketing by predicting customer needs and delivering relevant content before users actively search for products (Shankar, 2018). Likewise, Verhoef et al. (2021) suggest that AI improves the overall customer journey by creating smooth and interactive experiences, leading to higher satisfaction and stronger customer loyalty.

However, some researchers point out important challenges. Buhalis and Leung (2018) argue that the complexity of AI systems and the lack of transparency in how algorithms make decisions can reduce consumer trust. In addition, Martin, Borah and Palmatier (2017) note that concerns around data privacy and the ethical use of personal information may negatively affect customer perceptions. These issues are especially significant in highly personalised environments, where users may feel their data is being overused or closely monitored.

Overall, while AI offers clear advantages in terms of efficiency and personalisation, its success depends on ensuring transparency, trust, and ethical practices. This shows that AI in online retail is not just a technological tool, but also an important factor shaping consumer attitudes and behaviour.

Amazon also uses AI to deliver targeted advertisements, showing customers products that match their interests and increasing the likelihood of purchase.

## 6.2 Consumer Behaviour Theories

Understanding consumer behaviour is important when analysing how AI influences purchase decisions. Traditional models describe consumer decision-making as a series of stages, including problem recognition, information search, evaluation, purchase, and post-purchase behaviour (Kotler and Keller, 2016). However, the use of AI has reshaped this process by introducing data-driven inputs at each stage.

One commonly used framework is the Technology Acceptance Model (TAM), which suggests that perceived usefulness and ease of use influence whether individuals adopt a technology (Venkatesh and Davis, 2000). In Amazon's case, this model helps explain why users rely on AI-based recommendations. When personalised suggestions make product searches quicker and easier, users are more likely to see the system as helpful and convenient, which increases their dependence on it for purchase decisions (Marangunić and Granić, 2015).

The Theory of Planned Behaviour (TPB) also provides useful insight by focusing on attitudes, social influence, and perceived control (Ajzen, 1991). On Amazon, AI-generated reviews, ratings, and recommendations can shape positive attitudes and create social influence, encouraging users to trust suggested products and move towards making a purchase.

In addition, the Stimulus-Organism-Response (S-O-R) model explains how external factors influence internal feelings and behaviours (Mehrabian and Russell, 1974). Within Amazon's platform, AI recommendations act as stimuli that affect consumers' perceptions and emotions, leading to responses such as impulse buying or stronger purchase intentions (Islam, Rahman and Hollebeek, 2018).

Overall, these theories are not just theoretical concepts but are highly relevant in explaining how AI systems on Amazon influence consumer decision-making.

Amazon also uses AI-powered recommendation features such as "Customers who bought this also bought," which analyse browsing patterns and purchase history to suggest relevant products. These features play a significant role in influencing purchase decisions by reducing search effort and increasing product visibility.



**Figure 1: AI-Driven Consumer Journey in Online Retail – Case of Amazon**

As shown in Figure 1, Artificial Intelligence plays a significant role in influencing each stage of the consumer journey on Amazon. At the awareness stage, AI-driven advertisements attract consumer attention. During the consideration stage, personalised recommendations guide product evaluation. At the purchase stage, features such as one-click buying simplify the decision-making process. Finally, in the post-purchase stage, AI-powered reviews and suggestions enhance customer satisfaction and encourage repeat purchases.

### 6.3 Personalisation & Recommendation Systems

Personalisation is one of the most important uses of AI in online retail, allowing companies to tailor products, services, and content to individual customers. AI-based recommendation systems use data such as browsing history, past purchases, and user preferences to generate personalised suggestions, improving the overall shopping experience (Ricci, Rokach and Shapira, 2015).

Research consistently shows that personalisation has a positive effect on consumer behaviour. Zhang et al. (2020) found that personalised recommendations help

reduce information overload and make decision-making easier, which increases the likelihood of purchase. In a similar way, Xu, Luo and Carroll (2021) argue that when content feels more relevant to users, it improves customer satisfaction and builds trust. These findings highlight the important role of AI-driven personalisation in influencing consumer decisions in online retail.

However, recommendation systems also have certain limitations. Aggarwal (2016) points out that methods such as collaborative filtering and content-based filtering can face issues like data sparsity and reduced accuracy in some situations. In addition, too much personalisation can create a “filter bubble,” where users are only shown a limited range of products, potentially restricting their choices (Pariser, 2011).

Privacy is another key concern. Awad and Krishnan (2006) describe the “personalisation–privacy paradox,” where consumers appreciate personalised experiences but are also worried about how their personal data is collected and used. This suggests that while personalisation can improve the customer experience, it may also reduce trust if not handled carefully.

Overall, the success of AI-driven recommendation systems depends on finding the right balance between delivering personalised experiences and maintaining ethical standards and consumer privacy.

## 6.4 Previous Research Studies

A large number of studies have explored how AI influences consumer behaviour in online retail. Much of the research reports positive outcomes, showing that AI improves convenience, lowers search effort, and increases customer engagement. For example, Pantano and Pizzi (2020) suggest that AI helps create more interactive and engaging shopping experiences, which can positively affect consumer behaviour. In a similar way, Huang and Rust (2021) argue that AI enhances service quality by providing quicker and more accurate responses to customer needs.

Other studies highlight the importance of AI-driven recommendation systems in shaping consumer choices, especially in online environments with a wide range of products. Jarek and Mazurek (2019) note that these systems play a key role in guiding customer decisions. In addition, research by Akram et al. (2018) shows that AI can encourage impulse buying by offering timely and relevant product

suggestions. Together, these findings support the idea that AI has a strong influence on purchasing behaviour in digital settings.

However, some research presents a more critical view. Castelo, Bos and Lehmann (2019) found that consumers may resist AI, particularly when they believe human judgement is more trustworthy. Similarly, Burrell (2016) points out that the lack of transparency in AI systems, often referred to as algorithmic opacity, can lead to reduced trust and lower adoption rates.

Overall, the literature suggests that while AI has considerable potential to shape consumer behaviour, its impact is not always positive. Its effectiveness depends on factors such as trust, transparency, and the level of control consumers feel they have.

## 6.5 Research Gap

Although there is a large amount of research on Artificial Intelligence (AI) in online retail, several important gaps still exist. First, much of the literature focuses on general uses of AI rather than examining its impact within specific organisations. While AI-driven personalisation has been widely discussed, there is limited empirical research that looks closely at how these technologies affect consumer behaviour on platforms such as Amazon (Dwivedi et al., 2021; Verhoef et al., 2021). This shows the need for more context-specific studies.

Second, existing research often highlights the technical capabilities of AI but pays less attention to consumer behaviour theories that explain how and why AI influences purchase decisions (Jarek and Mazurek, 2019). Although models like TAM, TPB, and S-O-R offer useful insights, few studies combine these frameworks to provide a more complete understanding of AI-driven decision-making (Lemon and Verhoef, 2016).

Third, there are mixed findings regarding consumer perceptions of AI. Some studies suggest that personalisation improves trust and satisfaction, while others point to concerns about privacy, intrusiveness, and algorithmic bias (Awad and Krishnan, 2006; Castelo, Bos and Lehmann, 2019). This lack of agreement highlights the need for further investigation.

In addition, many studies rely on secondary data or are mainly conceptual, with limited use of primary data collected directly from consumers (Pantano and Pizzi, 2020). This makes it difficult to fully understand real consumer experiences in changing online environments.

Therefore, this study aims to address these gaps by focusing on Amazon as a case study and using primary research to examine how AI-driven personalisation influences consumer purchase decisions. By combining technological and behavioural perspectives, the research seeks to provide a more complete understanding of the role of AI in online retail.

## 6.6 Research Hypotheses

Based on existing research on Artificial Intelligence (AI), consumer behaviour, and personalisation in online retail, this study proposes a set of hypotheses to examine how AI-driven technologies influence consumer purchase decisions on Amazon.

AI-powered recommendation systems are widely recognised for their role in shaping consumer behaviour by offering personalised product suggestions. Previous studies show that such recommendations reduce the effort required to search for products and increase the likelihood of making a purchase (Zhang et al., 2020; Xu, Luo and Carroll, 2021). Therefore, the following hypothesis is proposed:

**H1:** AI-driven recommendations have a positive impact on consumer purchase intention.

Personalisation is also a key factor in improving customer engagement and satisfaction in online shopping environments. Research suggests that tailored content enhances user experience and makes products appear more relevant to consumers (Bleier, Harmeling and Palmatier, 2019). Accordingly:

**H2:** AI-based personalisation positively influences customer satisfaction.

Trust plays an important role in the adoption and effectiveness of AI systems. Although AI provides convenience, concerns related to privacy and transparency can affect how much consumers trust these systems (Martin, Borah and Palmatier, 2017; Awad and Krishnan, 2006). Therefore:

**H3:** Consumer trust in AI systems positively affects purchase decisions.

In addition, trust may strengthen the relationship between AI recommendations and consumer behaviour. Studies indicate that consumers are more likely to follow AI-generated suggestions when they have confidence in the system (Castelo, Bos and Lehmann, 2019). Hence:

**H4:** Trust moderates the relationship between AI-driven recommendations and purchase intention.

Finally, AI technologies help simplify decision-making by reducing information overload and presenting relevant choices. This increased convenience is likely to have a significant impact on consumer behaviour (Shankar, 2018). Thus:

**H5:** Perceived convenience of AI systems positively influences consumer purchase decisions.

## 7. Methodology

### 7.1 Research Philosophy

Research philosophy refers to the set of beliefs about how knowledge is created and understood (Saunders, Lewis and Thornhill, 2019). This study adopts a positivist approach, which assumes that reality is objective and can be measured and analysed through observation and empirical evidence (Bryman, 2016).

Positivism is suitable for this research because the study focuses on examining the relationship between Artificial Intelligence (AI) and consumer purchase decisions using measurable data. This approach supports structured data collection and the use of statistical techniques to test hypotheses and identify patterns (Creswell and Creswell, 2018). In this study, key variables such as customer satisfaction, trust, and purchase intention can be quantified, making a positivist approach appropriate.

However, positivism does have some limitations. It may not fully capture subjective experiences or deeper insights into consumer behaviour, which are often better explored through interpretivist methods. Despite this, positivism is considered more appropriate for this research, as it allows for objective analysis and the generation of generalisable findings, especially when working with large datasets (Hair et al., 2019). Therefore, the choice of positivism aligns well with the research objectives and the need for statistical analysis.

### 7.2 Research Approach

This study uses a quantitative research approach, which focuses on collecting and analysing numerical data to examine relationships between variables. Quantitative methods are commonly used in business and management research because they allow for hypothesis testing and the production of generalisable results (Bell, Bryman and Harley, 2018).

The use of a quantitative approach is appropriate for this study as it aims to measure the effect of AI-driven features, such as personalised recommendations, on consumer purchase decisions. Through structured survey questions, it becomes possible to quantify consumer perceptions and behaviours, making it easier to analyse relationships between variables using statistical methods (Saunders et al.,

2019). In addition, this approach is consistent with the positivist philosophy adopted in the research.

Although a qualitative approach could provide more detailed insights into consumer attitudes and experiences, it would limit the ability to generalise the findings to a wider population. Qualitative methods are also more time-intensive and may introduce bias due to subjective interpretation (Creswell and Creswell, 2018). Therefore, while qualitative research offers depth, a quantitative approach is more suitable for meeting the objectives of this study.

### 7.3 Research Strategy

This study adopts a survey strategy, which is one of the most commonly used methods in quantitative research. Surveys are effective for gathering data from a large number of participants within a relatively short time (Check and Schutt, 2012).

The survey method is suitable for this research as it enables the collection of standardised information on consumer perceptions of AI and its impact on purchase behaviour. Using structured questionnaires ensures that responses are consistent, making it easier to compare results and carry out statistical analysis. In addition, online surveys are both cost-effective and convenient, particularly when targeting consumers who are already active on digital platforms (Evans and Mathur, 2018).

Despite its advantages, the survey approach has some limitations. Responses may be influenced by bias, as participants might give answers they believe are socially acceptable rather than their true opinions. Surveys also tend to provide limited depth and may not fully capture underlying consumer motivations. However, due to its efficiency, ability to reach a large sample, and alignment with the research objectives, the survey strategy is considered appropriate for this study.

## 8. Data Collection

This study collects primary data using an online questionnaire created through Google Forms. Primary data is chosen because it provides direct insights from respondents, ensuring that the information gathered is closely aligned with the research objectives (Wright, 2017).

An online survey is particularly suitable due to its ease of use, accessibility, and ability to reach a large number of participants in a short period. Since the research focuses on online retail consumers, a digital method of data collection is highly appropriate. In addition, online surveys are cost-effective and support efficient data handling and organisation (Evans and Mathur, 2018).

The questionnaire is designed with structured questions based on a Likert scale, allowing respondents to indicate their level of agreement with statements related to AI recommendations, trust, satisfaction, and purchase behaviour. This approach ensures consistency in responses and supports effective quantitative analysis (Fowler, 2014).

## 9. Sampling

This study uses convenience sampling, a non-probability sampling method in which participants are selected based on their availability and willingness to take part. This approach is suitable given the time and resource limitations of the study, as well as the ease of reaching respondents through online platforms (Etikan, Musa and Alkassim, 2016).

Convenience sampling is appropriate in this context because the research targets individuals who have prior experience using Amazon. Since the aim is to understand consumer perceptions of AI-driven features, it is more important to gather responses from relevant and knowledgeable participants rather than achieve full population representation. Taherdoost (2016) notes that convenience sampling is commonly used in consumer behaviour research where accessibility and relevance are key considerations.

This method also allows for quicker data collection, which is important within a limited timeframe. Distributing the survey through social media and email makes it easier to reach a sufficient number of respondents efficiently (Bornstein et al., 2013). This supports the goal of obtaining a sample size of around 100–150 participants.

However, it is important to recognise that convenience sampling may reduce the generalisability of the findings, as the sample may not fully represent the wider population (Bryman, 2016). Despite this limitation, the method is still appropriate for this study because it enables the collection of relevant and practical data from active online consumers. Overall, convenience sampling provides a practical and effective approach that fits the research objectives and constraints.

## 10. Data Analysis

The collected data will be analysed using quantitative methods with the support of tools such as Microsoft Excel and SPSS. To begin with, descriptive statistics, including means, percentages, and frequencies, will be used to summarise the data and highlight general trends in consumer responses (Field, 2018). Charts and graphs will also be used to present the data more clearly and support interpretation.

In addition to this, correlation analysis will be carried out to explore the relationships between key variables such as AI-driven personalisation, consumer trust, and purchase intention. This method helps identify both the strength and direction of relationships, providing a clearer understanding of how AI influences consumer behaviour (Schober, Boer and Schwarte, 2018).

Regression analysis will also be used to examine the impact of independent variables, such as AI recommendations and perceived usefulness, on the dependent variable, purchase intention. This technique is commonly applied in consumer behaviour research as it allows for testing relationships and predicting outcomes based on multiple factors (Hair et al., 2019). It will help determine which aspects of AI have the strongest effect on consumer purchasing decisions.

Furthermore, a reliability test using Cronbach's Alpha will be conducted to assess the internal consistency of the questionnaire. This ensures that the Likert-scale items are measuring the same underlying concepts effectively (Tavakol and Dennick, 2011). A value above 0.7 is generally considered acceptable, indicating good reliability.

Overall, the use of these statistical techniques strengthens the validity and reliability of the findings, ensuring that the results are based on well-analysed and dependable data.

## 11. Advantages and Limitations

### Advantages

One major advantage of this methodology is its ability to collect data from a relatively large number of respondents in an efficient way through online surveys. This approach helps save both time and cost while also making it easier to reach digitally active consumers (Evans and Mathur, 2018). The use of primary data further strengthens the study, as it is based on real consumer experiences, improving the relevance and validity of the findings. In addition, quantitative analysis enhances the objectivity of the research by providing statistically supported results and reducing the risk of researcher bias (Creswell and Creswell, 2018). The use of techniques such as correlation and regression also adds depth to the analysis by identifying relationships between variables (Hair et al., 2019).

### Limitations

Despite these strengths, there are some limitations to consider. The use of convenience sampling may result in a sample that does not fully represent the wider population, which can limit the generalisability of the findings (Bryman, 2016).

Response bias is another concern in survey-based research, as participants may give socially desirable answers or may not accurately remember their behaviour. Podsakoff et al. (2012) highlight that common method bias can occur when data is collected from a single source using self-reported measures, potentially affecting the accuracy of the results.

Another limitation relates to bias within AI systems themselves. Recommendation algorithms may reflect biases present in the data used to train them, which can lead to unbalanced or non-neutral suggestions. This may influence consumer perceptions and purchasing behaviour in ways that are not entirely objective (Burrell, 2016).

Such bias can also reinforce existing preferences and reduce exposure to a wider range of products, which may affect the overall conclusions about consumer decision-making.

Overall, while this methodology provides useful insights, these limitations suggest that the findings should be interpreted carefully, taking into account potential biases in both the data and the AI systems being studied.

## 12. Ethical Considerations

Ethical considerations are important to ensure that the research is carried out responsibly and respects participants' rights. This study follows recognised ethical guidelines throughout the research process. First, informed consent will be obtained from all participants before they take part in the survey. Participants will be clearly informed about the purpose of the study and their right to withdraw at any time without any consequences (Resnik, 2020).

Second, privacy and confidentiality will be carefully protected. No personal identifying information will be collected, and all responses will remain anonymous. The data will be securely stored and used only for academic purposes, in line with data protection principles (Israel and Hay, 2006). However, there is still a potential risk of data misuse, especially in online research where data can be easily accessed or shared. To reduce this risk, measures such as password protection and limited access will be applied (Wiles, 2013).

Ethical concerns related to Artificial Intelligence must also be considered. AI systems rely on large amounts of user data, which raises issues around privacy, surveillance, and informed consent. There is also the possibility of algorithmic bias, where systems may produce unfair outcomes due to biased data (Floridi et al., 2018). These concerns can affect consumer trust and raise questions about the ethical use of AI in influencing purchasing behaviour.

In addition, transparency is an important issue. Consumers may not fully understand how AI-based recommendations are generated, which can impact their ability to make independent decisions (Mittelstadt et al., 2016). For this reason, it is important for research in this area to recognise and address these ethical challenges.

Overall, by considering issues such as privacy, data misuse, and AI ethics, this study aims to maintain high ethical standards while ensuring the credibility and integrity of the research.

### 13. Timeline

A clear and well-organised research timeline is important to ensure that each stage of the study is completed in a structured way and within the available time. Proper time management improves efficiency, minimises delays, and allows sufficient focus on each part of the research (Cooper, Schindler and Sun, 2020). The timeline for this study has been developed by considering the complexity of each stage and follows standard academic research practices.

| Task                   | Time Allocation |
|------------------------|-----------------|
| Literature Review      | 2 weeks         |
| Data Collection        | 1 week          |
| Data Analysis          | 1 week          |
| Writing & Finalisation | 2 weeks         |

#### Justification of Timeline

The literature review is allocated two weeks because it is a key part of the research. This stage involves reviewing and analysing a wide range of academic sources to build a strong theoretical base. Hart (2018) notes that a thorough literature review requires time to critically assess existing studies and identify research gaps. Booth, Sutton and Papaioannou (2016) also highlight that the process is iterative, requiring continuous reading and refinement, which supports the need for a longer duration.

The data collection phase is planned for one week, as the study uses an online survey. Tools such as Google Forms make it possible to gather responses quickly from a large group of participants (Dillman, Smyth and Christian, 2014). With a target sample size of 100–150 respondents, one week is considered enough time to distribute the survey and collect responses, especially through digital platforms.

Similarly, one week is allocated for data analysis. This stage includes organising and analysing the data using tools such as Excel or SPSS. While quantitative analysis

can be carried out efficiently with structured data, it still requires careful interpretation to ensure accurate and reliable results (Kothari, 2004).

The writing and finalisation stage is given two weeks, as it involves compiling all sections of the research, including the introduction, literature review, methodology, findings, and conclusion. Writing at a master's level requires critical thinking, clear structure, and proper referencing, which takes time for drafting, reviewing, and editing (Neville, 2010). This stage also includes proofreading and ensuring that academic standards, such as Harvard referencing, are followed.

Overall, the timeline provides a realistic and balanced plan for completing the research. Proper time allocation across each stage helps improve the quality of the study and ensures that all components are completed effectively. Effective time management is widely recognised as essential in academic research, as poor planning can negatively affect the overall outcome (Saunders, Lewis and Thornhill, 2019).

## 14. Resources

The successful completion of this research depends on the availability of key resources, including time, technological tools, and access to digital platforms. Identifying and managing these resources effectively is important for maintaining the quality and efficiency of the research process (Sekaran and Bougie, 2016).

Time is one of the most critical resources in any research project. Proper time management ensures that each stage—such as the literature review, data collection, analysis, and writing—is completed in a structured and organised manner. Poor time planning can affect the overall quality of the research and may lead to incomplete or rushed work (Macan, 1994). Therefore, it is essential to allocate sufficient time to each phase to meet academic standards and deadlines.

Access to the internet is another essential requirement for this study, as it relies heavily on online sources and tools. Academic databases such as Google Scholar, ScienceDirect, and other online journals are necessary for conducting a thorough literature review. The internet is also important for distributing online surveys and collecting responses from participants (Rowley, 2014). In modern research, digital access plays a key role in enabling efficient data collection and access to current information.

A laptop or computer is equally important, as it allows the researcher to design surveys, analyse data, and prepare the final report. The use of digital devices improves productivity and supports effective data management and storage (Bourne, 2005). It also enables access to statistical software, writing tools, and online research platforms.

In addition, software tools are required to support different stages of the research. For example, Microsoft Excel or SPSS will be used for data analysis, helping to perform statistical calculations and create visual outputs such as charts and graphs. These tools are commonly used in academic research due to their reliability and effectiveness in handling quantitative data (Peck, Olsen and Devore, 2015). Word processing software such as Microsoft Word is also necessary for writing and formatting the research according to academic requirements.

Overall, these resources play a vital role in ensuring that the research is carried out effectively. Proper use of time and technology contributes to the reliability and validity of the findings. As modern research increasingly depends on digital tools and data-driven methods, access to these resources becomes essential for achieving high-quality academic outcomes (Wager, 2016).

## 15. Conclusion

This research proposal presents a clear plan to examine how Artificial Intelligence (AI) influences consumer purchase decisions, focusing on Amazon as a case study. It highlights the increasing importance of AI in online retail and how it is changing the way consumers interact with digital platforms. By combining relevant theories, research methods, and data collection techniques, the study provides a solid foundation for exploring the link between AI-driven technologies and consumer behaviour.

The proposal shows that AI tools, especially recommendation systems and personalised marketing, play a major role in shaping consumer decision-making. As discussed in the literature, AI allows businesses to offer more tailored experiences, which can improve customer engagement and satisfaction (Haenlein and Kaplan, 2020). In addition, the use of AI supports more efficient and data-driven strategies, helping organisations better understand and respond to customer needs (Ransbotham et al., 2020). This makes the research both relevant and timely in the context of modern digital commerce.

In terms of expected outcomes, it is likely that AI will have a positive impact on consumer purchase decisions. Personalisation, in particular, is expected to increase purchase intention by offering relevant product suggestions and making the decision-making process easier. Previous studies suggest that consumers prefer platforms that provide convenient and personalised experiences, which can lead to higher satisfaction and loyalty (Liu-Thompkins et al., 2022). Therefore, it is expected that participants in this study will report a strong influence of AI recommendations on their purchasing behaviour.

At the same time, the study is expected to identify certain challenges related to the use of AI. Issues such as data privacy, lack of transparency, and algorithmic bias may reduce consumer trust and willingness to rely on AI systems (Kumar et al., 2023). These insights will help provide a balanced view of both the advantages and limitations of AI in online retail.

Overall, this research aims to contribute to academic understanding as well as practical business applications by offering insights into how AI affects consumer behaviour in a real-world setting. The findings may help organisations develop more

effective AI-based strategies while also addressing concerns related to trust and ethics. As AI continues to develop, understanding its role in consumer decision-making will remain important for long-term success in the digital marketplace (Dwivedi et al., 2023).

## 16. References

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