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Artificial Intelligence in Online Shopping: Impact on Consumer Behaviour

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Abstract

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Title of the thesis

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Abstract

Artificial Intelligence (AI) has revolutionized retail in the modern era, especially in understanding customer preferences and purchase behaviours.

This study aims to examine the impact of artificial intelligence on consumer trust and confidence in online buying, explore factors contributing to personalized recommendations, assess the challenges faced by online shoppers, and recommend strategies for leveraging artificial intelligence to enhance customer-centric shopping experiences.

This thesis adopts the Technology Acceptance Model (TAM) and Diffusion of Innovation theory to understand how AI influences consumer behaviour and decision-making processes in online shopping.

The research methodology involves interpretivism philosophy, an inductive approach, and primary and secondary qualitative data collection methodologies to gather insight into AI's impacts on customer behaviour. The primary data has been collected from interviews with participants to acknowledge customer behaviour in the online shopping platforms and the impact of AI features on the shopping experiences. The interview verified factors regarding challenges and market situations in which the customer behaviours can be observed and provided recommendations in further acknowledgement.

The research suggests taking privacy concerns must be addressed by e-commerce businesses and personalized recommendations must be incorporated effectively. By considering contextual factors and leveraging AI in a customer-centric manner, businesses can improve customer satisfaction and loyalty in online shopping platforms.

Keywords

Artificial intelligence, AI, E-commerce, Online Shopping

Contents

1 Introduction

1.1 Background of the Research

Artificial intelligence in the modern era plays a key role in understanding customer preferences and purchase behaviour to increase seamless shopping experiences effectively (Nguyen 2023). In recent years, the integration of artificial intelligence (AI) in online shopping platforms has revolutionized the way consumers interact with e-commerce websites and has profoundly impacted their purchasing behaviour. AI technologies, including machine learning algorithms and natural language processing systems, have been increasingly deployed by online retailers to enhance customer experiences, provide personalized recommendations, and optimize various aspects of the shopping journey. As a result, understanding the role of AI in shaping consumer behaviour within the context of online shopping has become a critical area of research.

Several studies have highlighted the significant influence of AI on consumer behaviour in the online shopping domain. Nguyen (2023) emphasizes the pivotal role of AI in understanding customer preferences and purchase behaviour, thereby increasing the effectiveness of seamless shopping experiences. Jangra & Jangra (2022) underscore the positive correlation between AI utilization and consumer purchasing attitudes and trust in online shopping platforms. These findings suggest that AI-powered features, such as curated recommendations based on past purchase history and preferences, contribute to enhancing consumer satisfaction and confidence in online transactions.

Furthermore, research by Chevalier (2024) indicates that AI-driven price comparison and discount notifications play a crucial role in facilitating purchasing decisions for online shoppers. Thormundsson (2022) explores the incorporation of AI in retail industries, highlighting its role in improving customer care services and inventory management. Additionally, Tighe (2024) demonstrates consumers' willingness to embrace AI-generated product suggestions, emphasizing its utility in facilitating buying decisions across different age groups.

However, despite the numerous benefits AI brings to online shopping experiences, there are also ethical considerations and challenges associated with its widespread adoption. Privacy concerns, data confidentiality issues, and potential biases in AI algorithms pose significant risks that must be addressed to ensure responsible AI deployment in e-commerce settings (Yampolskiy & Rossi 2019). Moreover, the rapid pace of technological advancements in AI requires continuous monitoring and adaptation to mitigate potential negative impacts on consumer behaviour and shopping experiences.

This topic is interesting because it's fascinating how technology can make our online shopping experiences better. AI helps us find products we might like, gives us instant help through chatbots and even helps stores manage their inventory more efficiently. It's all about the shopping easier and more enjoyable for everyone involved.

1.2 Thesis Aim, Objectives, and Research Questions

The study aims to understand the role of artificial intelligence in influencing customers' online shopping experiences and consumer behaviour. The primary objective of this study is to explore and understand how artificial intelligence (AI) impacts consumer confidence during online purchasing. This involves a detailed analysis of various AI technologies and their direct and indirect effects on consumer behaviour, trust, and decision-making processes.

Research Questions

- How does integrating AI tools affect consumer confidence level trust while purchasing online products?
- What are the factors that contribute to influencing the purchase decisions of customers?
- What are the challenges regarding online shopping behaviours among customers and the risk of using AI-based features in shopping online?
- What are the strategies for leveraging customer awareness and the best possible shopping means through the development of AI features in customer customer-centric manner?

1.3 Theoretical Framework

This thesis has been structured according to two theoretical frameworks, namely the Technology Acceptance Model (TAM) and the Diffusion of Innovation theory. These theoretical paradigms help understand how AI has been perceived and accepted by consumers in purchasing decisions and focus on consumer behaviour. Following this structure, the thesis offers an enhanced understanding of the impacts of AI in shaping consumer behaviour and the rate at which AI is being used by the e-commerce industry to promote business viability (Reim et al., 2020). The theories further shed light on the decision-

making process of customers in their online shopping sprees such that the e-commerce sector increases its incorporation of different technological algorithms.

1.4 Research Methodology and Data Collection Methods

The Research Design and method also contribute appropriately to enhancing the quality of the research. Based on the qualitative method for analysis the research would introduce and use a descriptive research design which plays a significant role in providing the relevant answers to the respective questions of the research. It gives a detailed analysis on providing the detailed depth analysis of the research participants and their opinions according to the topic (Nayak & Singh 2021). However, selecting this research design and method will help the research to be conducted successfully and represent the relevant information.

Data Collection and Analysis

The data collection of research is the most significant aspect of making the authenticity and relevance of research. It is important to focus on the appropriate method of data collection that could help in understanding the concept in a detailed and appropriate way.

To better understand the customer experience, research has focused on using the primary qualitative data collection method, which would be based on interviews with five participants with specific questions based on the research topic. Random probability sampling will be applied in this research to collect participants for the interview session. Random probability sampling refers to the selection of a small size of participants randomly from a larger group (Stratton 2021). The selected participants unbiased irrespective of class, creed, language, or any discriminatory background in the market, have delivered the qualitative interview. Therefore, the research has selected the interpretivism philosophy, inductive research approach, descriptive research design and primary qualitative data collection method to understand the role of artificial intelligence in influencing customer online shopping experiences and consumer behaviour. The data collection method has followed the primary method to engage information directly in terms of interpretivism factors. The reliability of the research outcome has been favoured to be oriented from the needs and requirements of the customers. Questions raised for this interview fall under the purposive category, which ensures the development of knowledge regarding consumer behaviour and AI impact as it relates to digital marketing projections.

1.5 Thesis Structure

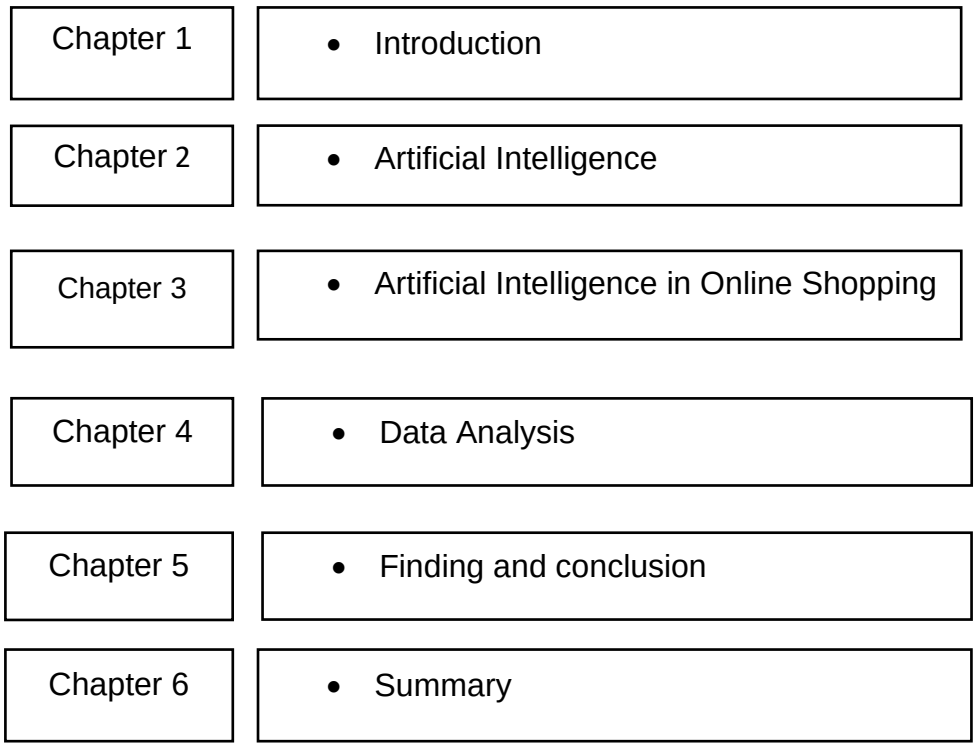

Figure 1. Thesis structure

Based on Figure 1, this thesis contains seven chapters:

Chapter 1, serves as the introduction, encompassing the background of the research, its purpose, the research question, limitations, theoretical framework, methodology, data collection process, and thesis structure.

The theoretical basis of this thesis is provided in chapters two and three, which give the reader a basic understanding of the ideas behind Artificial Intelligence (AI), online shopping, and consumer experience. A general overview of AI is covered in chapter two. The author aims to give a clear explanation of artificial intelligence (AI), its categories, and its effects on the world.

In Chapter 3, The author explains the role that Artificial Intelligence (AI) plays in shaping online shopping experiences and its impact on consumers' behaviour, as well as the impact of AI on the development of consumer behaviour.

Chapter 4, answers research questions about how integrating AI tools with online platforms affects consumers' trust and confidence levels and the factors that influence the online buying decisions of consumers. the research findings are presented and the research result.

Chapter 5, This chapter responds to the research question of the thesis, along with suggestions for further research and an evaluation of the reliability and validity of the study.

Chapter 6, The final chapter of this thesis is a summary chapter.

2 Artificial Intelligence

2.1 General Overview of AI

Artificial intelligence (AI) refers to the miniature of human intelligence in machines that are programmed to analyse like humans as well as mimic their actions effectively. The use of AI in the real-world business context helps ensure that decision-making by employees is more accurate, effective, and creative by analysing current scenarios of marketing demand (Prasanth et al. 2023). Currently, artificial intelligence plays an important role when it comes to enhancing brand awareness through the creation of customized marketing strategies that are tailored according to brand awareness.

The use of AI in different industry operations has been gaining popularity because of the ability of AI to learn from consumer behaviours and then offer suggestions according to the new information. In this manner, AI has induced efficacy in the work experiences of employees as well as leads to superior experiences of customers. According to the arguments of Huang & Rust (2021), AI helps in engaging customers which depends on the type of service being provided and the processes through which it has been designed to be carried out. Because of studying human preferences and behaviour, AI transforms its mechanical role to a more human-like function whereby customer-centric services are created. AI is an umbrella concept that encompasses various technologies required for performing highly detailed tasks that were hitherto done by humans. The incorporation of AI in most business operations has been done to avoid errors and reduce the time taken to perform heavy data-driven tasks. According to Pallathadka et al., (2023), machine learning helps in forecasting and analysing data without human intervention and through these technologies, the service value increases. Thus, AI not only hastens the process of accurate decision-making but also reduces operational costs by eliminating the prospects of task repeatability. This means that AI identifies those repeated business tasks or procedures and therefore it helps organisations avoid repeating the same tasks, which decreases additional costs for companies.

AI has been increasingly implemented to perform the logical, cognitive, and analytical tasks that were previously assumed to have been successfully conducted only through human intervention. However, this does not mean that AI-driven work processes lack creativity because the highly advanced technologies collate and analyse vast amounts of data to study the patterns to acquire and deploy skills that were earlier considered to be characteristic of the human mind. Contrarily, it can be said that AI has transcended this traditional role to become even more competent whereby it can create new data types

based on the training data (ISO 2024). The AI algorithms therefore operate through a web of deeply interconnected information networks and relay information to and from different layers to gain meaning from the data they collect. AI can be further classified in terms of weak and strong, where the former performs specialised, narrow, and confined tasks and the strong AI encompasses a broader scope of specialisation (Fjelland 2020). Thus, AI possesses the power to transform the everyday lives of people by identifying and tackling global challenges and formulating solutions for them. However, the increased use of AI also raises ethical questions concerning the privacy and confidentiality of data. This necessitates effective investigation of how AI is used by businesses so that responsible utilisation of AI is practised.

2.2 Categories of AI Algorithm

According to Figure 2, there are two types of AI i.e. capability and functionality.

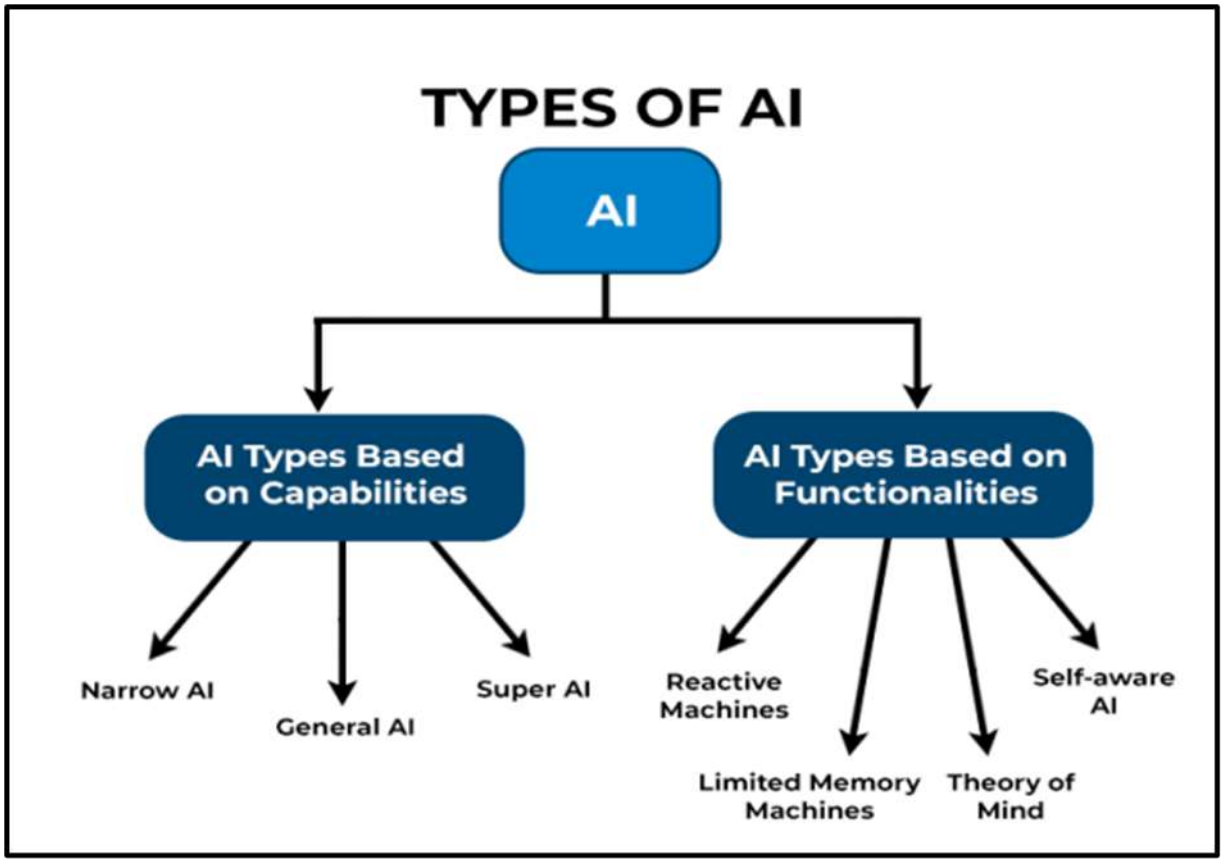

Figure 2. Types of AI (Nguyen 2023.)

Several AI-based capabilities and functionalities include Narrow AI, AGI (Artificial General Intelligence), ASI (Artificial Super Intelligence), Limited memory AI, reactive machine AI, Theory of Mind AI and lastly Self-aware AI.

Narrow AI is designed to fulfil specific actions as well as being unable to independently learn. AGI is designed to understand, learn, and perform similarly to humans to enhance operational efficiency within business. ASI can surpass the capabilities and knowledge of humans. On the other hand, Reactive machine AI can respond to external stimuli on a real-time basis, but it is unable to create a memory for the future (Nguyen 2023.) Theory of mind AI can react and respond to human emotions as well as perform any tasks of limited memory machines. Self-aware AI can recognise the emotions of others as well as it has a sense of human-level intelligence.

The various AI algorithms help in computing, extracting, and processing data, which then enables its users to make meaningful decisions. The AI algorithms can also be classified in the following manner as shown in Figure 3.

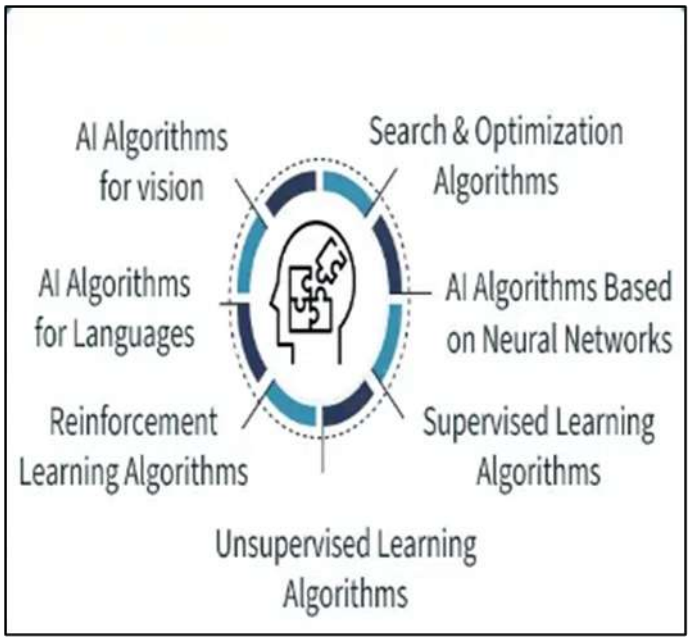

Figure 3. AI algorithms (Smith & Director 2020.)

Figure 3 depicts the multiple AI algorithms that help different business operations gain in-depth insights from the data and facilitate informed decision-making. Search and optimisation algorithms lead to effective problem resolution by navigating large spaces of data and consequently optimising the tasks in various domains. Furthermore, AI has also been employed by government decision-makers to induce transparency and remove a potential defect in decision-making (Janssen et al., 2022). Thus, AI algorithms through their predictive analytics capabilities help in making accurate business predictions that empower businesses to make calculated moves based on customer needs. The AI algorithms also ease the process of customer service through virtual assistants due to which organisations are increasingly preferring it. Supervised Learning Algorithms require categorising and labelling of data to enable precise search optimisation, and this is further categorised into decision trees, linear regression and random forest (Sen et al. 2020). AI algorithms can also process unlabelled datasets when data does not have any well-defined criteria to fit into and through such unsupervised learning; data patterns are studied to obtain a cluster of information. Furthermore, another AI algorithm applies the trial-and-error method to

gain insights into the data to select the best way to solve a problem. As Pallathadka et al. (2023) argue, the application of different AI algorithms enables businesses to enhance their supply chain, and operational efficiency and thereby improve customer satisfaction. This simulation of the human-like capacities in the AI algorithms to maximise profits, detect frauds and manage the business portfolios so that the security of the data is not compromised. On the other hand, Thormundsson (2024), argues that generative AI uses the deep learning mechanism to create engaging and creative content as per users' needs that enhances business operations which depend on the dynamic preferences of each customer. Due to the timely and critical evaluation of data, AI-driven supply chain management gains accuracy and revolutionises the development of business models.

2.3 Effects of AI on the World

Innovation in the field of AI continues to build the future of humanity around nearly every industry and sector globally. As per the study of Aithal (2023), AI has negative impacts on the world such as security risks from hacking, job displacement and lack of empathy and creativity like humans. On the other hand, it has significant effects such as improving customer behaviour and enhancing higher-quality experiences for employees within job sectors.

2.3.1 Impacts of AI on Improving Customer Journey

Different application of AI tools such as chatbots, virtual assistants and voice recognition tools not only adds value to the customer journey but also improve brand awareness and customer relationships. As Rana et al., (2022) argue, information gathered through AI helps businesses gain data regarding future shopping norms of customers, which can be subsequently leveraged to gain competitiveness by predicting customer behaviour in emerging markets. Thus, AI by mirroring the human mind develops mechanisms to respond to problems in a comparable manner, which provides better service customisations to consumers who are deeply engaged in the process. On the other hand, Rustholllkarhu et al., (2022) note that, the diverse digital space encompasses multiple variables that AI tools can effectively analyse and therefore, businesses increasingly implement AI to enhance their business-to-business relations. As a result, customer experiences are enhanced, and businesses' marketing strategies thrive due to the modern digital landscape's requirement for precise handling of vast amounts of data to ensure optimal customer satisfaction. Furthermore, Khan & Iqbal (2020) argue that retaining customers is also crucial

for organisational success and AI can be leveraged by businesses to gain an in-depth interaction with the target audience. In this way, challenges confronted while maximising customer experience can be discerned and subsequently worked upon to reach out to the target market via different channels.

It becomes vital for organisations to keep up with technological advancements to be at par with the market and customer trends so that the digitally adept population can be effectively targeted. As a result, AI tools help in attaining improved engagement and interaction with customers through adequate resolution of grievances. The online shopping journey of customers is popular because of the ease with which purchasing decisions can be made. Sellers can therefore leverage AI technologies to provide suitable product recommendations to customers based on their purchase history. However, Bag et al., (2022) argue that, post the pandemic the purchasing norms of consumers have undergone change and have made the role of digital technologies even more significant. Online customer journeys have improved due to a higher rate of conversion of traditional buyers to online shoppers. Moreover, studies reveal that the trust and commitment level among online shoppers have increased in the era of AI-enabled shopping experience depicting that previously sceptical customers have gained trust in the online modes of payment (Ameen et al. 2021). Thus, AI affects customer journeys positively by providing personalised shopping suggestions based on analysis of the market and customer patterns.

2.3.2 Impact of AI on Consumer Behaviour

The popularity of AI implementation in businesses has grown in recent times due to its ability to influence the ways through which customers make purchasing decisions by showing relevant advertisements, among others. A study of customer purchasing history and websites often visited by customers provides ample data, which is processed by AI tools to provide insight into customer behaviour. Information garnered thereby is effectively used such that customer preferences are specifically forecasted empowering businesses to gain customer satisfaction and attract other potential customers (Hironde 2023). However, AI enabling businesses to have strong associations with customers often raises issues regarding data privacy that evoke ethical considerations of business practices. On the other hand, Rabby et al. (2021) argue that monitoring customer journeys has become difficult due to the robust business environment and therefore the need for customer-preferred and curated data has been increasing. This tactic of digital marketing, in turn, influences customer behaviour and helps in achieving long-term connections with customers. AI also affects consumer behaviour by streamlining the shopping process and generating content based on consumption patterns. According to Khan et al. (2022), cus-

tomers crave pre-existent data sets and knowledge to ease the process of purchasing decisions because self-driven and self-reliant technologies help reduce the added burden of making choices during shopping. This leads to a satisfying shopping experience that motivates customers to make re-purchase decisions from the same sellers. The use of AI further boosts businesses by evolving enhanced selling strategies based on customer and market data and in this way, businesses gain competitive advantage in a highly competitive market.

AI tools have shaped businesses in a manner that can study the market psychology of customers so that businesses can provide customer-oriented services and elevate customer satisfaction. The insights gained about customer behaviour become important for marketers as it helps them in speculating and analysing customer expectations. As Jain et al., (2024) argue, the advancement of AI tools has led to a transformation in consumer behaviour also affecting their levels of trust and purchasing attitudes. Big data analytics and machine learning analyse large quantities of data and provide real-time information regarding customer behaviour. Businesses gain agility by processing such data sets and can take relevant actions to provide better personalisation to their customer base. Contrarily Klaus and Zaichkowsky (2022) argue that customers value spending less time and effort while making purchasing decisions and opt for modes that ease the process of transactions. AI tools have made transactions and online shopping experiences so convenient that consumer behavioural shifts towards home deliveries and reliance on online shopping have become monumental.

2.4 Theoretical Overview

According to two theoretical frameworks, this thesis is based on the Technology Acceptance Model (TAM) and the Theory of Diffusion of Innovation.

2.4.1 Technology Acceptance Model

The Technology Acceptance Model (TAM) provides an efficient theoretical understanding of customer behaviour and journeys, which are determined by AI tools. TAM indicates how quickly consumers accept and adopt new technology. By understanding this, businesses can enhance their operations to improve the perceived usefulness and ease of use of their services. (Bryan & Zuva 2021). Therefore, depending on the usefulness of the technologies, customers would be more inclined to accept new digital tools.

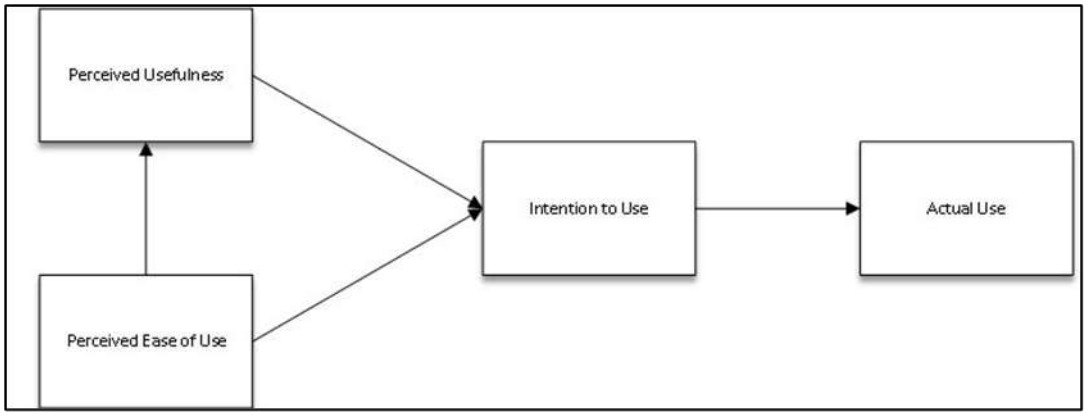

Figure 4. Technology Acceptance Model (Marikyan & Papagiannidis 2023.)

Figure 4 depicts the different elements of the TAM, which has been designed to help organisations take such measures that would increase the online engagement of the customers. The model is based on several factors, such as ease of use, convenience, safety, and security of private data, which induce individuals to adopt digital tools in their everyday lives. As Marikyan & Papagiannidis (2023) state, the key objective of TAM is to predict customer behaviour so that organisations have a theoretical pathway to inculcate such tactics that would drive more customers to digitally engage with their services. Customers' decision regarding accepting technologies depends on a cost-benefit analysis that they would otherwise forgo. Businesses take insights from the rate of acceptance of technology to provide service customisations accordingly so that it triggers a positive inclination of customers towards digital services.

Organisations can thereby enhance the online shopping journey of customers from the insights gained from the demographics that accept modern technologies. Offering customisation by the category of people that has increased the use of new technologies can pave the way for successful business operations (Wan et al., 2020). Leveraging the factors that push customers to use recent technologies provides a significant knowledge base to businesses that can profit from the behavioural motives behind the acceptance of technologies. The TAM presupposes that customer behaviour is a sequence of reasonable and logical actions, which induce customers to opt for certain technologies and discard others (Sari et al., 2022). Businesses can achieve market viability by capitalising on these behavioural factors and incorporating more of those technologies into their operations that promote customer usage.

2.4.2 Diffusion of Innovation Theory

The Diffusion of innovation theory (DIT) seeks to elucidate the rate at which new technologies spread and the factors behind the rapid growth or diffusion of products. This theoretical paradigm becomes appropriate to understand the online shopping experience of customers and the strategies through which organisations can adopt technological innovation to attain their desired outcomes.

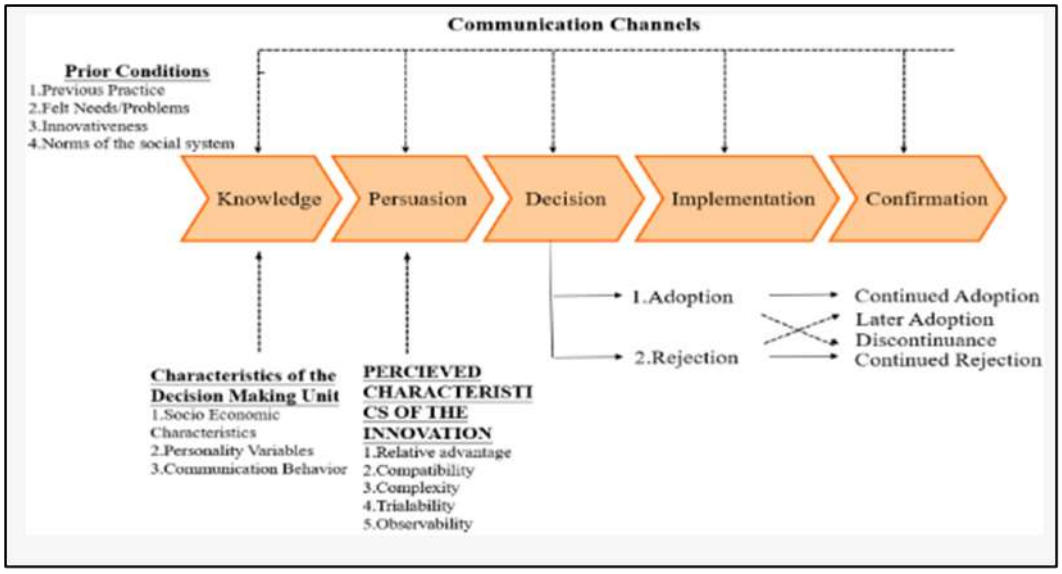

Figure 5. Diffusion of Innovation Theory (Tsai & Chen 2022.)

Figure 5 portrays the various stages involved in the DIT that follow a particular channel through which customers undertake decisions. The DIT explains the awareness or knowledge of customers who then develop an interest towards modern technologies through a thorough evaluation. This is followed by a trial of the technological innovation that finally leads to its adoption. This theoretical framework explains how the latest ideas are gradually spread amongst the population and an analysis of the same provides information regarding the demographic that are the early and late adopters of the technology. As Al Breiki et al. (2023) note, a diffusion of innovation theory aims at studying the social norms, skills, and attitudes of the population that readily adopts technological innovations by examining their social norms, skills, and attitudes. Therefore, businesses can target that population with innovations based on their accessibility, so that they can be easily accessible. Additionally, this theory sheds light on the different ways in which technology is spread within a particular population and the rates at which individuals are prone to ac-

cept new ideas (Benhabib et al., 2021). As such, organisations gain ideas regarding the factors that increase the possibility of greater acceptance of a technology and businesses can likewise invest in those areas that lead to greater acceptance of an innovation. Given that, each culture functions according to certain norms, therefore their acceptance of innovations varies. Organisations need to precisely understand these characteristics to transform their business operations in a manner that resonates with the changing needs of the people (Tsai & Chen, 2022). This theoretical approach thus equips businesses with important information regarding innovations that are readily accepted by businesses and can provide similar customisations to enhance customer journeys.

The online experience of customers therefore benefits from the application of different technologies because it not only saves time but also increases the efficiency of online transactions. The theoretical approaches discussed above help in offering a clear roadmap to the businesses following which they would be able to target those indicators that motivate customers towards greater adoption of digital practices. AI tools therefore modify customer behaviour in a manner that leads to an increase in the inclination among customers and businesses to implement digitalisation (Benhabib et al., 2021). These ethical concerns can be assuaged by following certain guidelines for ensuring data security of customers, instituting safe online transaction modes and informing customers regarding the implications that AI usage would bear on them.

3 Artificial Intelligence in Online Shopping

Artificial intelligence has numerous roles in shaping online shopping experiences such as personalised product recommendations, pricing optimisation and demand forecasts valuably. According to Khan & Iqbal (2020), using AI algorithms enables companies to harness data in unimaginable ways which shapes consumer behaviour and helps businesses make informed decisions accordingly. The involvement of AI and chatbots enables companies to understand the basic needs and preferences of consumers to improve brand awareness globally. Apart from that, in the business domain, AI has played a crucial role such as it helps streamline inventory management process through conducting real-time measurements. Thus, emerging AI-based technologies within business processes can improve purchasing behaviour and operational efficiency effectively (Khan et al., 2022).

3.1 AI in Shaping Online Shopping Experiences

The use of Artificial Intelligence has become an integral part of the contemporary business processes used to shape the online shopping experience of consumers. Artificial intelligence is being used by e-commerce companies to keep track of consumer trends and demands in real time, which helps them forecast consumer demand. It is evident from the search and discovery of products and services online, as well as the customer service and forecasting of demand, that artificial intelligence can be used to shape the online shopping experience (Khrais 2020).

AI is being leveraged to enhance the online shopping experience in the following ways:

Customer-centric Search:

Different AI-powered technologies have been used by e-commerce businesses in the enhancement of the search experience of consumers. According to Bilal et al. (2024), AI substantially affects consumer behaviour and companies can use AI to provide a more customised shopping experience to customers. Customer-centric e-commerce search enhancement tools such as Twiggle are prime examples of tools that can contribute to improving customer-centric search. Through the utilisation of natural language processing (NLP), search enhancement tools ameliorate search results by narrowing down and contextualising the service or product offerings (Virvou 2023). Contextually, Twiggle uses NLP rather than keywords to filter the search results preferring accuracy and reducing consumer frustration. In addition to that, AI is also used by businesses to enhance the visual search experience of consumers.

Visual search capabilities introduced by AI:

AI-driven visual search capabilities have been used by different e-commerce businesses such as Amazon, Alibaba and Myntra. Visual search capabilities leverage the ML (machine learning) algorithms that help consumers discover products based on images. In light of that, Seol et al. (2023) have stated that the collection and refinement of large datasets are extremely necessary to ensure effective visual search results for consumers. Similarly, Pinterest's AI-driven visual search or Amazon's visual cue search helps consumers find demanded products based on the uploaded photographs (Wired 2018). The AI-led visual search helps consumers in the identification of specific objects based on visual cues without any specific keywords or descriptions.

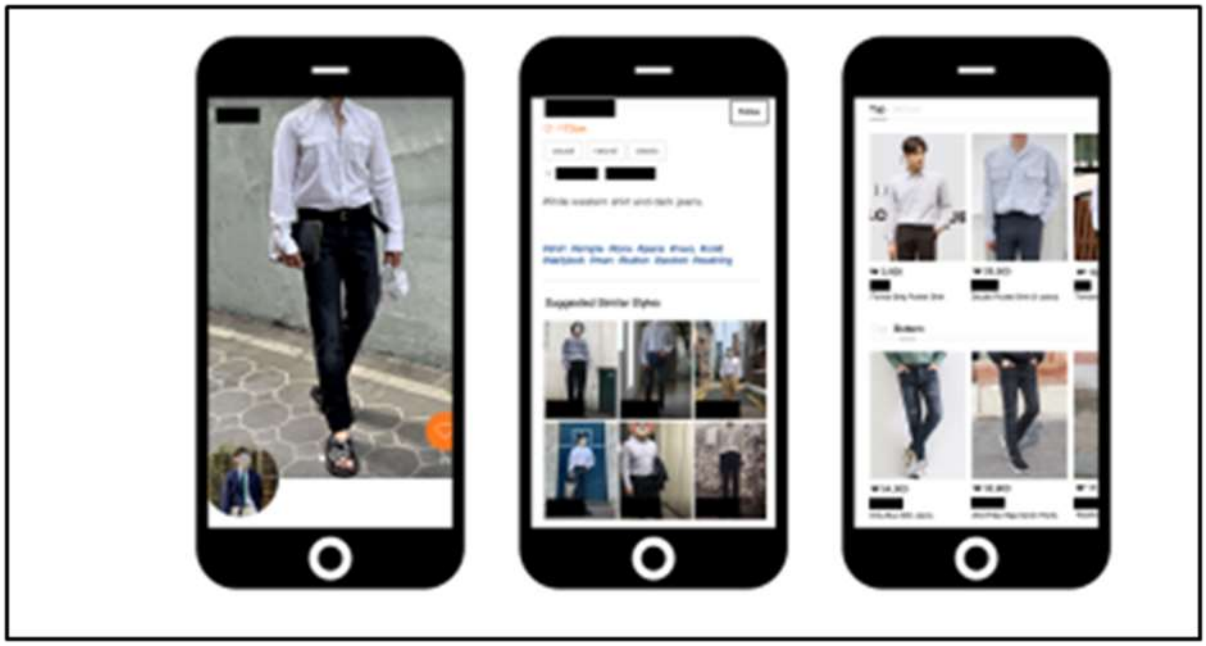

Figure 6, AI-driven visual search (Seol et al. 2023.)

Customer Relationship Management (CRM):

Customer Relationship Management (CRM) has been optimised with the integration of AI-driven tools and Chabot's. AI-led virtual assistants such as Google Assistant, Bixby of Samsung, Amazon's Alexa, and Apple's Siri are popular virtual assistants that are widely used by consumers while navigating e-commerce platforms (Rana et al. 2023). These virtual assistants engage in solving the queries of consumers and provide customised support based on consumer queries. As opined by Patel and Trivedi (2020) virtual assistants leverage ML algorithms and natural language processing enabling e-commerce

businesses to offer personalised customer service. Significantly, the personalisation of customer service helps in improving consumer satisfaction and repurchase intention from businesses.

Personalised/Customised Recommendations with AI-led Systems:

The collective implementation of AI and data analytics has shaped the personalization of the services and products offered by businesses. According to Haleem et al. (2022), AI's ability to analyse and evaluate large amounts of data helps businesses in making real-time decisions related to the personalisation of product recommendations. Through the integration of AI algorithms, e-commerce companies such as Amazon analyse and identify the patterns in consumer behaviour, consumer preferences and purchase history. In line with that, Khoa et al. (2020) have stated that the personalisation of products and recommendations can help in the enhancement of sales, repurchase intention, consumer loyalty and increase sales. Significantly, e-commerce businesses have also connected virtual reality technology to recommendation systems to enhance the accuracy of recommendations.

Incorporation of Wearable Technology and Virtual Reality:

The emergence of wearable technologies like smartwatches and fitness bands has created new opportunities for businesses to understand consumer behaviour using AI-driven tools. As commented by Mariani et al. (2023) AI-led wearable gadgets can gather data insights on consumer preferences, behaviours and activities that help them in developing personalised recommendations. Additionally, the data gathered from wearable devices can help businesses in developing targeted marketing strategies. For instance, fit bands can track the vitals and HRM of consumers and companies can recommend personalised products based on these vitals.

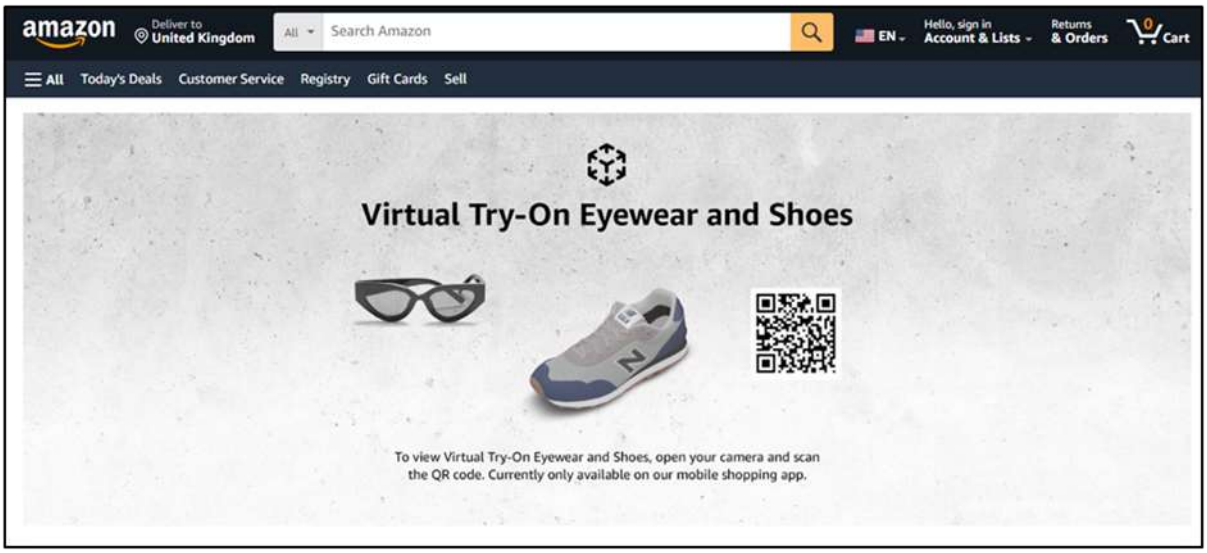

Figure 7. Amazon's AI-powered VR application (Amazon 2024.)

In addition to that, AI-led AR applications can also assist consumers in trialling their preferred clothes or makeup products. As illustrated in Figure 7, Amazon offers AI-powered virtual try-ons for eyewear and shoes by scanning attached QR codes (Amazon 2024). Such a measure can help businesses enhance the personalised experiences of consumers and ensure their engagement with the brands. In addition to that, VR technology also assists customers in virtual walkthroughs of products before making any purchase decisions. Accordingly, the VR applications further help in providing an immersive shopping experience resembling the physical store experience. In line with this, Wang et al. (2023) have stated that immersive experiences not only engage customers but also enhance confidence by addressing uncertainties and enhancing conversion rates. Google's virtual try-on feature has integrated generative AI in showing clothes on a wider body type. Significantly, the rapid increase in AI-driven solutions in e-commerce highlights the higher demands for customisation of consumers. Through the collective use of AI, AR and VR have changed the ways consumers interact with online shopping.

3.2 Impacts of AI on Consumer Behaviour in Business

AI has rapidly transitioned consumer behaviour within any business domain by redefining and reconfiguring business models and processes. According to the study by Khrais (2020), AI assists e-commerce businesses in capturing rapidly changing business trends and shifting consumer demands. Bansal & Bansal (2023) have segregated the impact of AI on online shopping behaviour in terms of positive and negative effects. The positive

impact has been shown in terms of inventory management, personalised recommendations, chatbot advantages and improved search results.

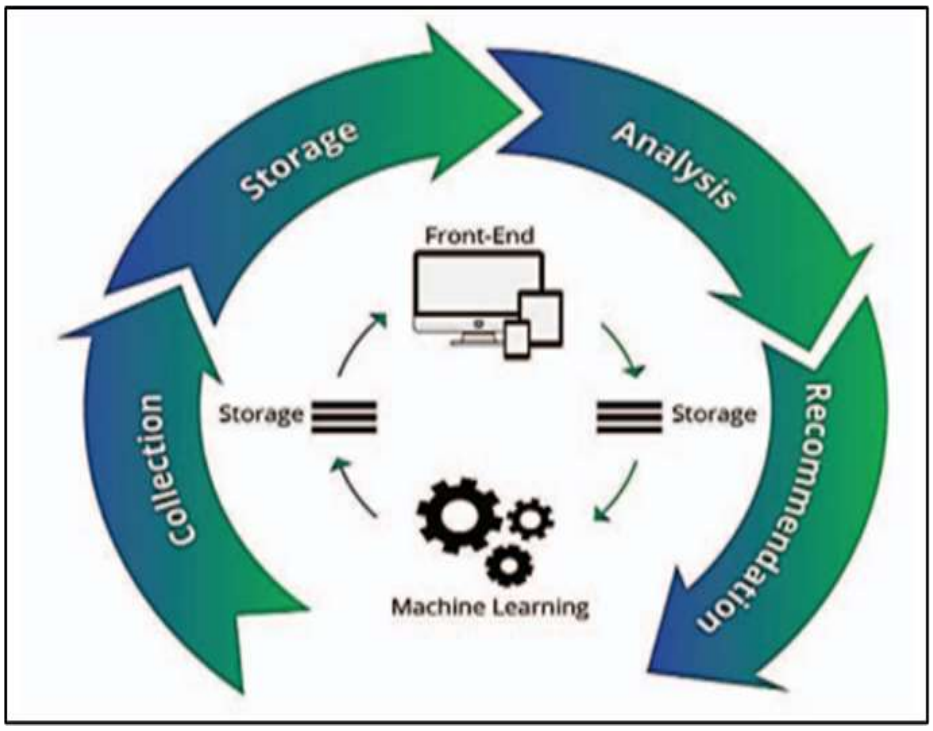

Figure 8. AI-based recommendation engine (Bansal & Bansal 2023.)

Accordingly, AI positively checks the available stocks in the inventory. The AI-led inventory management facilities offer business managers a chance to streamline their inventories and make them available to consumers on time. Contextually, Walmart's Auto-C robot checks the availability of stocks and fills the empty stocks before they run out. As a result, this enables customers to access products easily as per their demands (Retail Drive 2023). The AI-powered inventory management system of Walmart couples historical data and pairs it with predictive analytics which helps businesses strategically place items that would be sold on holidays (Walmart, 2023). On the other hand, Bansal, and Bansal (2023) have also commented that AI-driven tools and technologies are also used in the development of a personalised recommendations system.

As used by Netflix and most e-commerce businesses, personalised recommendation systems have become an important part of the e-commerce business models. As seen in Figure 8, AI-enabled tools and technologies help in developing personalised recommendations based on past order history, past browning behaviour and consumer Wishlist. Amazon has been using its personalised recommendation systems to cater to the needs

of its customers. Panda et al. (2024) have stated that the integration of personalised recommendation systems empowers the online shopping behaviour of consumers and increases the likelihood of a purchase. Another prime example of using AI-powered tools for personalised recommendation is Sephora which recommends customers skincare and makeup products based on skin type and concern types (Lombardo 2023). In addition to this, AI-led tools and websites empowered by AI algorithms impact the decisions made by businesses through their real-time insight-tracking features. Etsy and eBay, two popular e-commerce businesses have improved the search functionality by integrating search logs, user history and past search history.

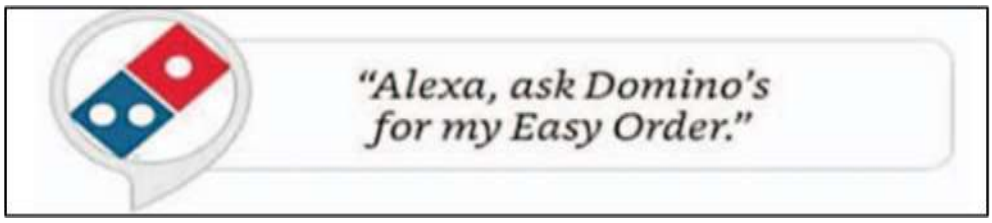

Figure 9. Using voice-based assistants to place online orders (Bansal & Bansal 2023.)

Accordingly, such features help in the enhancement of the online purchasing power of consumers. In addition to that, chatbots using NLP can understand human language and help consumers navigate through the user interface of e-commerce businesses. For instance, H&M guides its online shoppers regarding various styles and provides personalised recommendations via chatbot (Bansal & Bansal 2023). Besides this, consumer behaviour is also impacted by AI's fraud detection technique and several online payment systems such as PayPal use fraudulent activity detection that helps to protect customers from any fraud. Furthermore, voice-based assistants such as Siri and Alexa guide consumers through e-commerce platforms and order products online (As shown in Figure 9). Moreover, by integrating AI-led systems businesses can also engage in product customisation based on the feedback gathered from customers.

Nonetheless, there is an array of negative impacts such as data privacy concerns, data security breaches and filter bubbles. The increasing concerns with data privacy have made consumers cautious of sharing data with businesses which might have created barriers to the personalisation of services (Segijn et al. 2021). Nonetheless, it is essential for e-commerce and other businesses to gather contextual data that can be leveraged to develop effective personalised recommendations and products.

4 Data Analysis

A qualitative interview was conducted with five participants in this study. The results of these interviews were used to determine the findings of this study. A significant contribution to finding the answers to the research questions has been the findings derived from the interviews conducted with five managers of e-commerce businesses. In the discussion, specific insights have been provided into how artificial intelligence can help to develop a better customer experience and how purposeful questionnaires have aligned purposefully. The findings have aligned purposeful questionnaires, and the discussion has provided specific insights into what AI can be used to develop a better customer experience.

4.1 Interview Response Analysis

During the discussion with the participant, it was agreed that online shopping platforms cannot provide customers with better quality products and services. Furthermore, it was also noted that many brands offer products on their online platforms that cannot be sold in conventional stores due to minute imperfections that can't be seen in conventional shops. It is also marked that online shopping sites are not for those people who prefer high-quality products at lower prices. This is because the customers in the online platforms can never get products by touching and this raises trust issues among staff. Businesses offer ads on social media and online portals of products that seem like cash cows but are not standing to the least expected form. Misleading marketing practices and lack of clear communication can further damage consumer trust.

Participant Five highlighted customization benefits:

"Through AI features on online shopping, it becomes easier for shoppers to customise the size, shape and colour of the products to make the preferred products more customer-centric."

Some highlighted answers from participants pointed out quality and transparency issues as major factors undermining trust.

"One of the issues due to which trust factor reduces among online customers is the loss of money that occurs by buying non-refundable products."

"I have observed that online products cause a failure of understanding between offers and discount rates. Sometimes statements used for selling products instead of existing customers, cause them to be fooled."

Through interviews, it is experienced that online shopping is more reliable as the customers are preferably turning into online customers as this is saving their time, and money and also allows them to try a series of customisable designs. For customers in online shopping stores, it is noticed that customer traffic is higher on online platforms two times than those in conventional stores. Customers are expecting more precise and fast fashion products that come at a cheap rate. This helped me understand that in the fast-paced market, customers are no longer expecting lavish or premium offerings, rather they prefer quick usage and value-added services which are entirely available on online sites. The application of AI is required to develop the entire interface of shopping platforms on the online network. AI can serve as the intermediary platform that can reform how online and offline platforms operate. Customer engagement can be developed through aligning the online and offline markets. For instance, business platforms operating in hybrid patterns can produce products only when they receive a trend or search results at a bulk rate. This can lead businesses with a customer-centric approach to secure resources and avail them to purchase sustainably.

Transparency maintenance can be another feature strongly integrated with online shopping stores. It is majorly observed that transformation among customers behaviour with significant deliverance of the features that raise interest among them. For instance, customers widely approach platforms where they can share details of the operations being taken to prepare the ordered products. Therefore, transparency automatically raises a feeling of loyalty and trust among customers and turns them into faithful long-term stakeholders.

5 Finding and Conclusion

5.1 Answer the Research Questions.

The interview questions were shaped in a manner to derive the best possible results for the present thesis. The first research question tries to find out how AI tools affect the trust and confidence level of online shoppers, and this has been answered by the first interview question. In this part, the participants have noted that they prefer online mode of payment because it allows them to tally the prices from other retailers. Additionally, the respondents believed that shopping online gives them a variety of choices and makes purchasing convenient, with all the items being available under one platform. Therefore, the first interview question addresses the first research question because it portrays that AI tools do not negatively affect the trust and confidence of shoppers. The second research question attempts to shed light on the elements that influence the purchasing decisions of customers. This question is effectively answered by the third research question, where the respondents enumerate how online shopping serves their interests in a better manner than conventional shopping. In this segment, interview participants have revealed that the wide variety of options and customisation of choices being available, have induced them to shift towards online shopping. Moreover, online shopping facilitated with the use of AI solves customers' time and cost issues, which act as key determinants influencing customers to purchase online.

The third research question delves into the challenges of online shopping and the risks associated with AI features in online shopping. This question is answered by the second interview question that pertains to the reason behind a lack of trust among shoppers to opt for online mode. The interview participants have voiced their concern regarding low-quality products being sold online which would not have been possible in physical stores. Furthermore, there has been significant concern among the respondents regarding non-refundable products and there always remains an apprehension about loss of money in online transactions. These reasons stated by the respondents help in elucidating the third research question regarding the challenges of a greater shift towards online shopping. The fourth research question aims to investigate the strategies that can be deployed to increase customer awareness and how AI features can be better integrated to drive more customers towards online shopping platforms. This has been effectively answered by the fourth and fifth interview questions that offer an understanding of the tactics through which AI features can be advanced to raise online shopping habits. The interview participants have highlighted the need for multiple payment options, variety of customisations, data privacy and transparency as the means through which greater customer awareness to-

wards online shopping can be generated. The interview participants have further noted that making the online platforms customer-centric and providing the exact items that customers are looking for becomes a vital factor that drives more customers towards online purchases. The answers to the fourth and fifth interview questions also note that AI integration facilitating online shopping has created advantages for both buyers and sellers and therefore such strategies can be leveraged leading to more awareness on this aspect. Another strategy stated by the participants of the interview that can be deployed for increasing online shopping pertains to social media advertisements and creating awareness through promotion by influencers. The above discussion thus shows that the findings of the primary qualitative research effectively answer the research questions.

5.2 Validity and Reliability

The role of artificial intelligence affecting the online shopping experience of customers has been analysed in this thesis and it attains validity because a primary qualitative method of data collection has been carried out. This thesis aims to establish valid findings based on a semi-structured interview conducted with five participants who were asked five questions each, in which they provided information regarding how artificial intelligence is affecting consumer behaviour in the area of shopping and the reasons for such a change. The primary qualitative mode of research offers a firsthand account of the shoppers and managers who can provide valuable insight regarding their personal experiences with online shopping. As a result, this thesis attains validity and reliability, since the interview questions focussed on various factors, such as trust issues, conventional versus modern means of shopping and advanced facilities provided by AI. A thorough discussion of these interview questions by the online shoppers themselves helps in imparting validity and reliability to this thesis. As Sürücü and Maslakçi (2020) note, validity and reliability are important aspects of any research because they provide a scale against which researchers can claim that their studies yield beneficial outcomes and rightfully measure the research aim. Due to the convenience and considerable freedom of choice provided by online shopping, it is indeed thought that this thesis has validity and reliability. One of the findings is that customers do prefer online modes of shopping due to convenience.

5.3 Suggestion for Further Research

Future research on a similar topic would benefit from the incorporation of secondary sources, such as existing scholarly articles, and reports of online shopping platforms and

journals. This would enhance the scope of the research because it would be able to corroborate the findings of the interview and strengthen the views of the participants.

Investigating the long-term effects of AI implementation in online retail environments involves tracking shifts in consumer behaviour, evolving market trends, and the overall competitiveness of businesses over an extended period. In addition to enhancing the shopping experience and influencing consumer decision-making processes, exploring the integration of emerging technologies, such as virtual reality (VR) and augmented reality (AR), with artificial intelligence into online retail platforms can reveal new possibilities for enhancing the shopping experience. It will be possible for researchers to identify innovative methods of engaging customers and promoting online retail offerings in a crowded market by examining these synergies.

A wide variety of demographics would enable the researcher to gain better insights regarding the usability of AI tools by different age groups. By doing so, future research would be carried out effectively. Finally, it would also be suggested that to improve the quality of future research, the researcher must refer to more secondary sources of data. This would enable comparison and contrast of different themes involved in this thesis as well as allow an argumentative analysis drawn from the perspectives of different scholars.

Learning Process

This thesis has enabled me to gain an in-depth understanding of how artificial intelligence intersects with consumer behaviour in the context of online shopping. As a result of conducting interviews and analysing responses, I have enhanced my research skills and gained valuable insight into consumer expectations and experiences in the real world. During my thesis writing, I have been able to engage with the technical advances of today through the learning process. Lastly, proper guidance from the teacher has allowed me to greatly improve my knowledge and skills throughout my thesis writing process.

Evaluation process

The process of developing this thesis has been an invaluable learning experience. I have significantly enhanced my understanding of the interplay between artificial intelligence and consumer behaviour in the context of online shopping. Through extensive literature review and data analysis, I have improved my research skills, critical thinking, and ability to synthesize complex information.

One of the key challenges I faced was ensuring the reliability and validity of the study. This required careful consideration of research design, data collection methods, and analytical techniques. During this process, I have gained a better understanding of the academic research requirements and the importance of methodology.

Managing deadlines and timelines effectively has been crucial to the success of this project. I have prioritized tasks, set achievable goals, and maintained a consistent work ethic to stay on track throughout the writing process.

6 Conclusion

The thesis has attempted to present a comprehensive understanding of the use of Artificial Intelligence, e-commerce, online shopping experience and consumer behaviour. The research has also discussed how e-commerce businesses have been pioneering the use of AI-enabled tools and technologies in shaping consumer behaviour and shopping experiences. The major goal of this research was to shed light on the role of AI in online shopping experience and its impact on consumer behaviour.

The research methodology employed a qualitative approach, utilizing descriptive research design and primary qualitative data collection methods through interviews. The study begins with an introductory chapter that sets a fundamental basis for the role of AI in online shopping, methodological choices and theoretical frameworks indicated in the research. Based on the research aim, objectives, and research questions the research has found extensive scholarly research articles that can answer the research aim.

Through a comprehensive review of the literature and empirical studies, findings from the research identified several key findings regarding the impact of AI on consumer confidence, purchasing decisions, and overall shopping experiences. AI-powered features such as personalized recommendations, price comparison tools, and virtual assistants have been shown to enhance consumer satisfaction, trust, and engagement with online retailers. However, ethical considerations, including privacy concerns and algorithmic biases, pose challenges that must be addressed to ensure responsible AI deployment in e-commerce settings.

Significantly, the second and third sections have elaborated on the theoretical and scholarly insights related to the use of AI in e-commerce business while chapter four has presented the account of interviews of five managers. The semi-structured interview questions have helped in probing the e-commerce managers who have been using AI-led tools and platforms to shape consumer behaviour and affect their purchase decisions. However, the primary and secondary findings reveal concerns related to data privacy breaches among consumers that have created barriers to the personalisation of products and service offerings.

As a result of this thesis, provides insights into how artificial intelligence influences consumer behaviour in the online shopping domain and provides insights into its potential and challenges. Businesses can use AI technologies to enhance customer satisfaction, foster trust, and boost business growth in the digital era by acknowledging that AI plays an important role in shaping online shopping experiences.

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Appendix 1. Interview Questions

1. In your opinion, how can AI affect consumer behaviour in shopping online?
2. Why do consumers in online shopping still lack trust factor?
3. How would you compare conventional and online shopping, what are the pros and cons?
4. How do you think AI will make online shopping better for customers?
5. What AI features can advance online shopping experiences for customers' reliability?