IMPACT OF ARTIFICIAL INTELLIGENCE ON THE RETAIL SECTOR: UNDERSTANDING CONSUMER PERCEPTIONS AND EXPERIENCES

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ABSTRACT

The retail sector has undergone significant transformation and since the inception of information technologies including Artificial intelligence, the expectations, behaviors and requirements of consumers has changed immensely. This research paper aims to understand the impact of Artificial intelligence on Generation Z and Milennial consumers' perceptions and experiences as well as attitude while shopping. The study adopts qualitative approach and derives results through semi-structured interviews and analyses data using thematic analysis method and NVivo software to identify the most used words while describing Artificial Intelligence. Technology Adoption Model along with few other factors like personalisation, Interactivity, Enjoyment, Experiment are proposed as an integrated framework to understand the major influencing factors while focusing on the influence and role of culture as well. Future research directions are also evaluated and suggested along with limitations of the current study.

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INTRODUCTION

Artificial intelligence (AI) is influencing the way consumers interact with brands and products in this era by reconstructing advertising, brand communications and consumer experiences with exponential efficiency and unbeatable capabilities *(Xiang et al., 2015; Wirtz et al., 2018; Lou et al., 2021)*. The concept of Artificial intelligence has been around since 1950s in theory *(Duan et al., 2019)* but gained popularity recently due to the development of required supporting probabilistic and statistical models and technologies like Big Data, IoT, Deep Learning, Machine Learning etc *(Mittelstadt et al., 2016)*. The development in complementary technologies and consumers' continuous search for convenience products made the developments necessary and made the technology popular. The presence of AI makes consumers' lives easier by personalising, recommending, making searches on their behalf and providing virtual try-on/ shopping experiences at home through presence of various devices. The convenience is enhanced by processing customers' last purchases and preferences or accumulating data with the help of combination of programs, algorithms and intelligent machines *(Ameen et al., 2021)*. Due to intelligence of AI and convenience along with the ability to understand consumers' preferences, its use has been exponential in multiple industries and streams like Medicine, Motor, Financial Markets, Computer Science, Logistics and mainly Retail Industry *(Croudace, 2021)*.

Given consumers' growing demand for convenience and considering the shift towards online purchases following the pandemic, the retail sector is rapidly transforming and transitioning globally towards Digital Technologies. A major part of retail business has moved online specially after pandemic which has introduced consumers and retailers to a new normal and brought stores on their fingertips. Artificial intelligence is influencing and enhancing customer experience by providing utmost convenience to consumers in retail sector by *reducing response time, increasing quality of service, facilitating personalisation (Jarek & Mazurek, 2019)* and *providing assistance in decision-making and searching for required product or service* due to which acceptance of these technologies is high. AI based chatbots, for example, are well accepted by consumers to an extent that 40% of consumers don't care if they are communicating with bot or human while 74% people prefer interactions with chatbots for simple and random questions *(Lou et al., 2021)*. AI powered technologies are skilled in assembling and outperforming human service in providing faster and precise judgements but still *lacks the emotional intelligence and bonds with consumer*s. It should also be noted that humans might prefer to work, interact with humans and may even be appalled by the idea of robot and technology taking over the humans *(Lou et al., 2021)*.

Despite the negative effects, relationship between Retail and AI is deepening as time passes and the times are changing rapidly, thus it is important to understand the impact of these technologies on the

consumers to be able to better adapt and design applications through AI. For the purpose of understanding consumer's perceptions, awareness and impact of these AI technologies on consumer's engagement and experience while shopping online or offline, this study is one among the early researches that studies major AI technologies like: Chatbots, Recommendation engines, AR/VR, Voice search assistants like Amazon's Alexa or Apple's Siri in an integrated manner. This field of study is in its infancy and much of the literatures have not developed yet. There are studies being conducted with an attempt to understand consumers' perceptions about these technologies individually but they are not yet well defined and still calls for further integrated researches.

To understand the consumers' perceptions, this study adopts few elements of *Chen et al (2021)*'s study which was conducted in USA and takes support of two major theories: *Technology Adoption model (TAM)- testing the perceived usefulness and ease of use of consumers and the Stakeholder theory* from the IB discipline. This study intends to contribute by applying the framework of TAM in a different and understudied market- UK, while analysing multiple technologies rather than just one for better comparison and to identify if all technologies have the same effect and if not, then which technology has the highest impact. The motive is to contribute to this field of research by understanding consumer perceptions and experiences to analyse the impact as this has not been done extensively before and to fill research gaps found in multiple studies - like lack of focus on consumer perceptions, satisfaction or psychology while using AI in retail shopping *(Shankar, 2018; Pillai et al., 2020)*, impact of AI technology on consumers from different cultures *(Chen et al, 2021)* and mainly to provide an integrated study focusing on multiple technologies under the umbrella term Artificial intelligence as there are new products being introduced on regular basis in this rapidly changing environment. It is clear from above that research in the field is still sporadic and lacks both breadth and depth. It is crucial to understand consumers better for success right from the beginning as these issues can hinder the growth of such evolution.

Thus, given the research gaps and the need to understand consumers' perceptions, the study aims to answer the following three research questions:

R1. What are consumer perceptions and awareness of AI in the United Kingdom?

R2. How do AI technologies impact consumer engagement and experience?

R3. What are the different types of AI technologies currently impacting the retail experience of the consumers?

LITERATURE REVIEW

Artificial Intelligence

Artificial intelligence has various definitions provided by scholars in the literature since its inception in 1950s (Natale & Ballatore, 2017). Multiple definitions of AI exists in the theoretical and practical world but for the purpose of the study, it follows the definition provided by Kaplan and Haenlein *(2019) according to which AI* can be defined as "a system's ability to interpret external data correctly, to learn from such data and to use those learnings to achieve specific goals and tasks through flexible adaptation" *(Kaplan & Haenlein, 2019).* The particular definition is adopted as it is comprehensive, easy to understand from the consumer perspective and moreover, the most used definition in previous major retail stu*dies (Mittelstadt et al., 2016; Libai et al., 2020; Cao, 2021)*

AI and Retailing

As a result of introduction of the internet and digital technologies, retail sector has moved from brick-and-mortar shopping ways to omnichannel shopping with the facility to compare products and prices online, making offline and online shopping integrated.

The new digital technologies have benefitted not only consumers but also retailers by enabling them to understand their consumers better through AI analytics, sentiment analysis using NLP, Big data, Data mining and so on *(Grewal et al., 2018).* Retailers are using these technologies not only to understand but also interact with their consumers, but also to increase efficiency and reduce costs. However, these interactions are still limited due to the stationery orientation of retailing and lack of financial viability which seems to be improving with omni-channel commerce increasing over time (Weber & Schütte, 2019). Due to the increase in popularity and benefits of AI, it has impacted online sales by increasing up to 30% more *(Shankar, 2018).*

Artificial intelligence has enhanced inventory management, optimised-supply chains, demand forecasting, customer relationships management, payment management and media optimisation among many other benefits provided in the retail industry including key activities underpinning the retail supply chain *(Shankar, 2018).* According to an *IBM report (2017),* 91% executives confirm that AI will play a disruptive role in retailing while 45% of consumers want AI based options and recommendations in physical retailing *(Shankar, 2018).* AI technologies can change interaction of brands with their consumers in different ways throughout their customer journeys through different applications at different points. AI technologies have reduced production cycles and wastage for

retailers by enabling demand forecasting, increases operational efficiency, reduces transaction costs, labour costs and increases accuracy among many other advantages *(Cao, 2021).* There are numerous advantages but acceptance or perspective of consumers about the advantages and their comfort or awareness is yet to be tested.

CONSUMER PERCEPTIONS AND AI

It is known that AI plays a crucial role in influencing customer's service experiences and enhancing operational efficiencies (Cao, 2021). The extent to which the satisfaction is achieved determines consumers' perception of AI. Consumer perceptions refers to the consumer's point of view about the use and impact of AI and its related technologies in their retail shopping experience *(Cao, 2021).* In the context of this study, AI includes –chatbots, recommendation engines, voice assistants and AR/VR technologies. Consumer perceptions of AI will be evaluated in terms of the customer's journey i.e., combination of evaluation and experiences.

Impact of AI on customer engagement and experience in the retail sector

Consumer experience is mix of emotional, physical, sensorial, social and cognitive feelings experienced by consumer while interacting with a brand online or offline. Multiple studies have emphasised on the importance of technology-related factors like friendly interface, aesthetic quality, clean design as well as emphasises on emotional or hedonic motivation factors like: perceived convenience, trust, personalisation, response time and the quality of service *(Childers et al., 2001; Gursoy et al., 2019; Ameen et al., 2021).* While other factors have not been defined extensively in previous researches, multiple studies emphasising on factors like convenience, personalisation, trust has been conducted.

The primary factors of influence are *convenience* and degree of importance given by the consumers. Convenience refers to the ability to complete a task in the shortest period of time with the least expenditure of human energy. The importance of convenience has increased exponentially post COVID-19 pandemic and more preference to location and time convenience is being given. Convenience leads to higher engagement, increases trust and reduces perceived sacrifice to obtain a particular product or service (*Ameen et al., 2021).* In case of AI enabled services in the retail sector, convenience has increased manifold as the services are available 24/7, real time information is provided to the customers with support throughout their customer journey, personalised assistance and proactive discussion by bots with no waiting time, thus increasing customer satisfaction (Walch, 2019).

As personalisation adds to convenience, it is another factor that influences the customer experience, engagement and satisfaction. Personalisation is degree to which the information is tailored to the needs

of the consumer saving the consumer time, effort and resources to get a product or service (*Ameen et al., 2021).* Personalised services are provided through data mining techniques by looking at previous saves, preferences and purchases of the consumers to give accurate results (Aguirre et al., 2015). Therefore, personalisation is crucial to study as it is associated with brand's competence and results with accurate choices gives a sense of importance to consumers that their choices are prioritised and important, thus increasing consumer satisfaction and engagement along with trust.

Trust and commitment are also one of the studied aspects which influences consumer perceptions, attitude as well as experiences. According to the studies, trust and commitment also play a crucial part in influencing the relationship between consumers and brand where technologies acts as a middleman in online commerce (*Morgan & Hunt, 1994; Ameen et al., 2021). It is important to study trust as part of the study as privacy is one of the highlighted components of trust as consumers want to have a degree of control on use of their data by the brands which AI seems to be disrupting (Wang et al., 2019).* The more the trust the better the customer experience; thus, more the satisfaction, longer the relationship between the brand and the customers *(Lee & Song, 2013).*

The factors mentioned above are significant but can have both positive and negative effects. Experiences with AI have derived mixed reviews from customers in previous studies *(Prentice & Nguyen, 2020*). While, AI is said to be beneficial in numerous ways there are issues related to inaccuracy, inability of bots and AI to understand emotions of the consumers, lack of two-way interaction in most cases along with major privacy and security concerns studied by various scholars *(Mazurek & Małagocka, 2019)*. The consumers might also have to sacrifice on the human interaction, loss of control, time consumption and negative feelings of irritation *(Ameen et al.,2021).* While concerns are increasing fore-mentioned effects, there are regulations being put in place like the AI regulating Act in the UK *(Dorries, 2022)* but the effectiveness nationally or globally is yet unknown. Thus, an analysis to weigh the pros and cons is necessary.

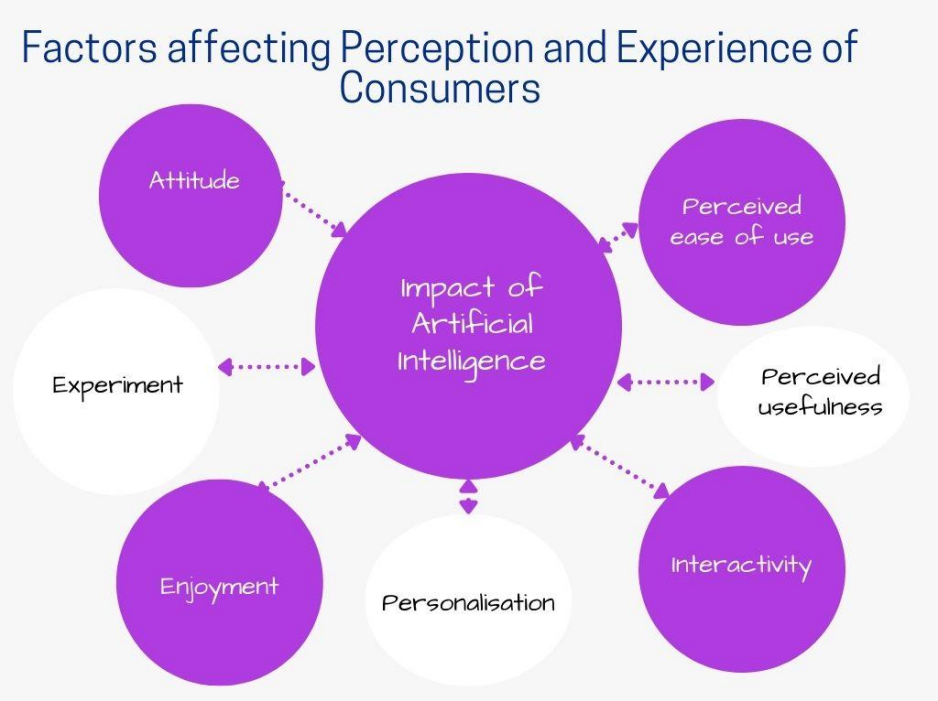


Figure 1: Factors influencing consumers' perception and experience with AI in retail sector

Source: *Childers et al (2001), Hengstler et al (2016), Pantano et al (2017), Gursoy et al (2019), Ameen et al (2021).*

The Generation and its perception defined

This study particularly focuses on understanding the perception of Gen Z and millennial consumers. Gen Z is a generation of people born during the year 2000s (refer to figure 4 in Appendix) born with the influence of technology and cannot conceive their lives without it *(Ponzoa et al., 2021).* Gen Z are known as digital natives, I-generation as they grew up during digital explosion (Ponzoa et al., 2021). The study also focuses on Millennials who are born in the year 1980-2000 *(Rainer & Rainer, 2011)*, have 24/7 access, deep knowledge about the technology, have seen development of various technological innovations like: YouTube, video games and witnessed the dot com bubble (*Gibson & Sodeman, 2018).*

These generations are interested to explore technologies, easy to use devices, desires to feel secure and prefers to escape from the reality temporarily *(Wood, 2013; Ng et al., 2019)*. Since the generation is at the forefront of experiencing proliferation of Artificial intelligence impacting the growth of retail sector *(Turner, 2015)*, it is necessary to understand their perception *(Ponzoa et al., 2021)*. This generation has huge spending capacity and forms a large part of the retail consumer sector as it makes

up a quarter of the UK's and 40% of the US population, with 2 billion people worldwide *(Ponzoa et al., 2021)*. The generation as consumers have been a focus of few studies but there is still need to understand and evaluate them more. A study conducted by Ponzoa et al *(2021)* studies the Gen Z and millennials to understand the impact of AR glasses and 3D printers on shopping intentions and experiences of customers with the help of TAM model similar to this study. It was concluded in a study that ease of use, satisfaction, enjoyment along with experience, price and subjective norms significantly affects the adoption and experience of the consumers while adopting such technologies *(Ponzoa et al., 2021).* The generation is crucial for future of retail sector and AI. It is expected to be the most important point of influence for its success; thus, it is important to understand the consumers of tomorrow in an understudied market to get perception.

Theoretical basis

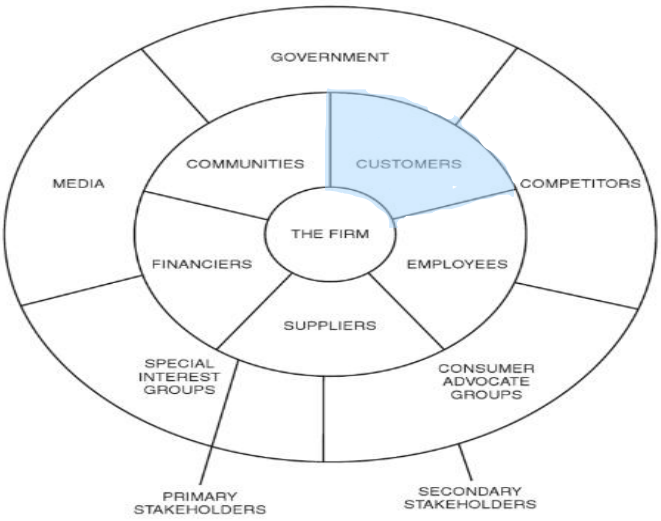
Technological readiness, awareness and its adoption are crucial to understand in this rapidly changing technological environment. To understand the same, the study takes help of Stakeholder theory and Technological Adoption model to support the research. The Stakeholder theory which belongs to the IB discipline emphasises on the importance and relevance of studying the consumer perspective on the impact of the AI technologies in the retail sector as they are the most *impacted economic resource*. It helps and validates the idea and logic behind this study trying to understand consumer perceptions and emphasises on the need to understand the *social as well as economic aspect of technological adoption (Parmar et al., 2010).* Secondly, the TAM model helps in understanding the logical reasoning behind consumer's acceptance and motive of using such AI technologies. The TAM model's two elements however are considered insufficient and thus, the study integrates other emotional or psychological factors like Personalisation, Interactivity, Experiment, Enjoyment, Aesthetics, Attitude apart from PEE and PFL to extend the existing model and contribute to *building an integrated model with all factors that are significant in influencing consumers' perceptions and experiences* like few existing studies by *Pantano et al. (2017), Chung et al. (2018), McLean & Wilson (2019), Ameen et al. (2021) and Pillai et al. (2020).* The inclusion of additional factors enables deeper understanding of important emotional constructs of consumers and logical reasoning behind why a technology is preferred more over the other depending on what factors consumers perceive as more important.

Stake Holder Theory

Stakeholder Theory was propagated by Freeman in the year *1994* to solve the problem of value creation and trade *(Phillips, 2012).* According to Freeman, "Stakeholder Theory is an idea about how business really works" (*Freeman et al., 2010)*. Main focus is to satisfy all stakeholders and any of the stakeholders can't be looked in isolation and their interest has to go together and the job is to work out how interest of customers, suppliers, communities, employees and financiers go in the same direction. This theory was built on the premise that if relationship between businesses and individuals and the groups are considered as a unit of analysis, the problems arising out of ethics, turbulent environment, technological revolutions can be solved *(Freeman et al., 2010; Phillips, 2012).*

The theory emphasises on two kinds of stakeholders: primary and secondary stakeholders where stakeholders are those whose interests must be protected while aiming to earn profits. Primary stakeholders are those who influence the business directly and are necessary for existence of business like the suppliers, investors, employees and mainly customers who are the focus of the study while secondary stakeholders are those who does not have a formal claim on the firms and influences the business indirectly through various activities like trade unions, media, activist groups and so on *(Freeman, 1994; Parmar et al., 2010; Phillips, 2012).* The open question argument which forms a part of the theory talks about concerns over 'for whom is the value created, who is benefitted/harmed', whose values and rights are realised or enabled by the decision *(Wicks, 1996) which is what this study aims to address by focusing on consumers* who are one of the main stakeholders and direct economic resource *(Donaldson and Preston, 1995*) for any business and the focus of value creation by AI in retail (*Preece et al., 2018).*

This theory was considered most relevant as it justifies the importance given to consumers and the need to understand consumer perceptions. While other theories like Consumer behaviour theories were considered but was not chosen due to the *limitation of inconsistent discoveries and lack of relevance in IB curriculum* as pointed out in previous studies *(Khan et al., 2022),* thus not reliable and ideal. The theory was also chosen over others as it helps to focus on consumers while reminding the importance of existence of business and the need for sync between firms and consumers. It depicts that both firm and consumers can impact the experience, satisfaction and goals of each other as perceptions of consumers determine the actions and strategy of the firm and vice versa. Therefore, theory is relevant and crucial.



Creating value for stakeholders
Source: R. Edward Freeman, Jeffrey S. Harrison, and Andrew C. Wicks 2007. *Managing for Stakeholders: Survival, Reputation, and Success.* New Haven: Yale University Press. Originally from a conversation with Robert Phillips.

Figure 2: Depiction of primary and secondary Stakeholders

Source: (Freeman et al., 2010)

Technology Adoption Model

TAM is the most popular and widely used theory that has been adopted to understand consumer's use intention of technology by various scholars and examines the perception on technology adoption as it provides a *straightforward approach to study how users accept and use a particular technology (Pillai et al., 2020)*. The model has been used by various scholars to study the impact of technology on M-shopping, online shopping *(Rose et al., 2012),* technology at a retail store, etc *(Munoz-Leiva et al., 2017).* The comprehensive model or theory derived in *The Diffusion of Innovations (2010) by Everett Rogers* is influenced by social cognitive theory and decision-making theory and identifies two important perceived characteristics namely *Perceived ease of use (PEE) and perceived usefulness (PFL)*. PEE refers to the degree to which a person believes that using a particular system would be free of effort and PFL refers to the degree to which a person believes using the particular system or technology would enhance or ease the performance, task intended to perform *(Davis, 1989; Pillai et al., 2020).* There are various factors which affect PEE and PFL of a consumer like optimism about the technology, innovativeness, perceived enjoyment, interactivity, etc. in turn affecting the shopping intention and experience which will be studied in this study *(Pillai et al., 2020).* The use of this model is crucial as it enables us to reflect on the *relative advantage a particular technology has over the other*

in the entire AI spectrum (Atkin et al., 2015). By studying the factors in terms of every technology, one of the most advantageous technology or comparable pros and cons can be found out.

Thus, combination of Stakeholder theory along with integrated model of TAM along with other factors is ideal and enables rightful analysis of what can either define or hinder the growth of AI in the retail sector in the future.

METHODOLOGY

Research Context

United Kingdom and Retail

The retail sector of the United Kingdom is the second largest revenue generator contributing up to 4.05 billion GBP per year by contributing 5.2% to the total GDP of the country. It is the *third country* with the largest growth in the retail sector after Germany and France while total online retail sales have been the highest in the UK and Netherlands at eight-fold level *(Croudace, 2021).* The retail sector has grown immensely overall and the sales figure of the country rose by 7.2% in November 2021 as compared to their pre-COVID levels in February 2022 *(Lewis, 2022).*

The non-store retailing has shown the highest growth rate in the past few years majorly due to online shopping *(Croudace, 2021).* The online sales as a proportion to all of the retailing has risen from 3.4% in 2007 to 27.9% in 2020 which is majorly due to the increase of internet access in the UK *(Croudace, 2021)*. The acceptance of online retail and shopping has also increased due to COVID-19 as consumers have shifted to online shopping and online retail due to the fear of the pandemic *(Lewis, 2022)*.

The growth has been to a level that the value of internet sales was 142.1 billion per week in Jun 2022 as compared to mere 91.1 in February 2020 thus showing tremendous growth *(Lewis, 2022).*

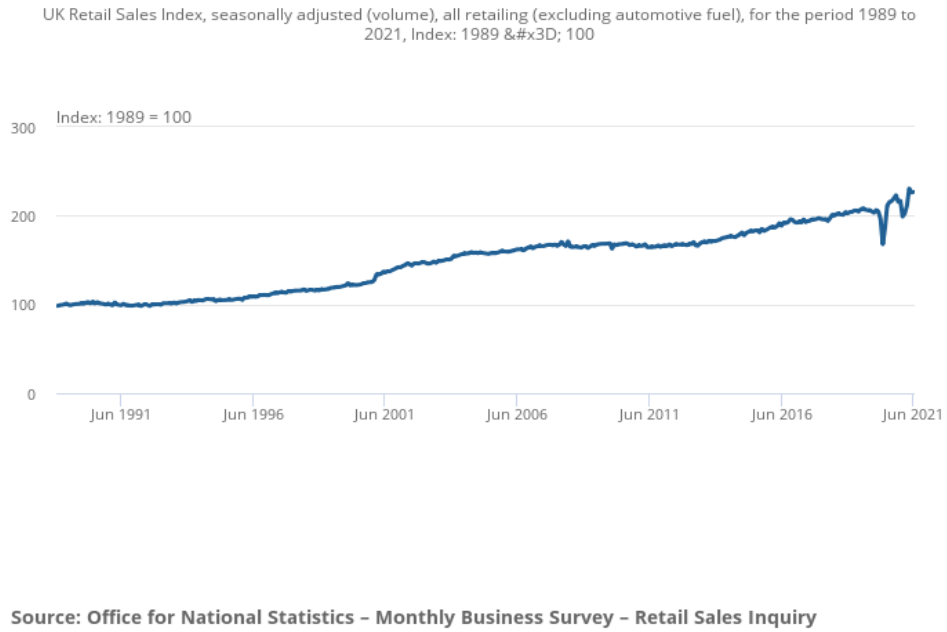


Figure 3: The growth of retail sector in the UK since 1989

Source: Croudace (2021)

United Kingdom and AI

At the forefront of AI and its development, US and China are the world leaders and no country comes close to them but UK has the highest potential to compete and is well positioned to be the innovative player. Artificial intelligence can boost the UK economy by 22% by the year 2030 if right measures and developments are planned as well as executed *(Bughin et al., 2019).* The United Kingdom has strong innovation culture, large talent pool and presence of strong academic institutions *(Bughin et al., 2019).*

According to the *Global AI Adoption Index 2021* and a report by IBM, UK had 20% adoption rate with 26% of the consumers trusting AI to provide the right information. The country's government ranked second highest in the world after Singapore in terms of AI readiness *(Aashind, 2022).* The number of AI companies in UK have increased by 145% since 2010 with only 1070 start-ups to more than 2500 in 2018 *(Aashind, 2022).* The country is 5th top AI powered chatbots using country in the world with 2667 sites in the UK using chatbots and investments in the sector have grown six times from 2014 to 2018 *(Aashind, 2022).* However, 70% of retail and ecommerce companies in the UK are highly impacted by the AI powered virtual assistants due to the supply chain efficiency, cost savings and meaningful relationships *(Aashind, 2022).* Thus, this study focuses on the impact of AI technologies

in retail sector in the United Kingdom due to lack of focus by previous studies on the country and its perceptions in spite of the high potential.

Research Design

The study focuses on understanding the impact of Artificial intelligence on the consumers' perceptions and experiences in the UK retail sector. The paper takes into consideration the feelings and attitudes of people; thus, the study uses the philosophy of *Interpretivism (Saunders et al., 2007)* which answers the questions 'what' and 'how' using *inductive* methods. The questions of what and how aims to investigate about "what are consumers' perceptions" and "how are these perceptions affected". This branch of study is the *study of reality* and is close to critical Realism since it focuses on illusions and sensations which is what the technologies of Artificial intelligence creates. To develop on these philosophies and carry out the study, Inductive method of research was adopted which is considered ideal for qualitative research where theory follows data in this type of study and not vice versa *(Saunders et al., 2007; Flick, 2011).* The strategy of the study is to adopt the mono-method and carry out *qualitative semi-structured interview*s as it provides flexibility and allows researchers to advance on existing literature by tailoring the questions according to the participants' responses and build a conversation for in-depth understanding and finding out new undiscovered elements that come out as a result of the semi-structured interviews (like elements of culture and concerns in this study). As the theme under study- Artificial Intelligence is in its infancy, *exploratory research* design was adopted *(Kaplan & Haenlin, 2020)* as it will help in two ways: Help in identifying emerging themes, identify patterns *(Eisenhardt & Graebner, 2007),* understand the perspectives and secondly, this method will provide new indications for future research by providing new nuances for the previously unexplored areas *(Boddy, 2016)* like finding out consumer perceptions in this paper.

Sampling strategy

As part of the qualitative study, the samples for the interviews were selected based on *convenience snowball sampling as it is consistent with inductive approach.* Convenience snowball sampling forms part of non-probability sampling where the units at hand were selected by the process of recruitment. Non-probability sampling is considered ideal for this study as there is a need to recruit respondents based on certain criteria to qualify for the study *(Wolf et al., 2016),* namely, awareness about AI and usage of AI devices. *Inductive techniques* were used to collect data to generate in-depth understanding of consumer perceptions regarding AI and be able to develop or support the existing theories like TAM

and Stakeholder theory. The use of inductive approaches is ideal because it enabled the researcher gain personalised insights and answer 'why' AI in the retail sector and 'how' AI is benefitting the consumers and retailers in the sector. The study consists of *20 consumers who reside in the United Kingdom currently and have made online purchases, familiar or aware about Artificial intelligence and are aged between 18-30 years old belonging to the Gen Z and Millennial generation* due to their utmost proven interest in technology (Chung et al., 2018). The sample size was so chosen as "less is more" in a qualitative study and it was also established by *McCraken (1988)* that for most projects 8 can be the ideal sample size for any study but this study, however, adopts the size as same as *Chen et. al (2021*) for similarity and reliability.

The students of a prominent UK University (undergraduate, postgraduate and PhD) were interviewed with the help of semi-structured questionnaire to provide flexibility and tailor questions according to respondents' responses for in-depth understanding. The data collection was done in the month of July 2022.

Convenience sampling method was used to select the samples by qualifying on basis of required criteria like Age, knowledge about AI and willingness to be part of the study. Post screening, the selected consumers were asked preliminary questions as part of the pilot interview to understand the effectiveness of the questionnaire, to alter questions that were hard to understand and to find out the missing parts of the scope of the study. The questionnaire was then modified to get best accurate answers and results without difficulty for better reliability. The questions and scope of research was validated by following similar approach of study as previous studies conducted if not same, in similar context (refer to table 2 in Appendix for final modified questions). After finalising the questionnaire and testing its effectiveness, a final second round of personal interviews were conducted where participants shared experiences and perceptions.

Data preparation and Collection

As part of the qualitative study, face-to-face interviews (online or offline) were conducted to gain in-depth insights about consumer perceptions and deep understanding about their personal experiences with Artificial intelligence. A round of pilot interview with 5 respondents was conducted followed by final semi-structured interviews. Semi-structured questions were developed to be able to cater and modify the questions according to the responses from the participants. The questionnaire was developed using questions adapted from the study by *Chen et al (2021*) and from the studies of *Pantano et al (2017), Chung et al (2018), McLean & Wilson (2019)* without any change to the wordings to

ensure the suitability, reliability and validity of the study. Personal bias was avoided by the researcher by acting as an objective observer and not responding to the answers provided by the respondents to avoid opinion bias and manipulation of responses. Moreover, Participants were recruited ethically and qualitative software was used to ensure the validity and reliability. Lastly, reliability was increased by testing and re-testing *(Saunders et al., 2007)* the questionnaire through two rounds of interviews to check the consistency and differences in the answers Additionally, to find answers to the research questions, several questions were developed from scratch based on the emerging themes that were identified in the preliminary discussions with the participants. Questions adopted from Chen et al (2021) are mentioned in the Appendix (refer to table 2) along with additions made to the questions to fit the scope of the study and keep it relevant to the research context.

Questionnaire Design

The questionnaire design should follow a logical sequence and for this purpose the paper employs a downward funnel approach *(Lydeard, 1991)* by starting with general questions on awareness about Artificial intelligence and to test the first generic impression of AI *(Grover & Vriens, 2006).* Specific questions on consumers' perspective and opinion about different technologies and opinions on the most impactful technology in their retail experience is collected later to understand the future of AI retailing from consumer's point of view. Funnel approach was used with the motive of making consumers comfortable about the topic, attain basic understanding, ensure uniformity in understanding and then go deep in to the technology and its applications. For accurate analysis, the study followed the emergent design where flexible interview questions were formed to follow the flow of participants, respond to their ideas and add flexibility. The questionnaire was open ended in order to provide same context to all respondents consistent with exploratory research *(Aalbaum et al., 1996)* with forced choice rather than agree-disagree questions to get in-depth answers as suggested by *Labaw (1982*) as the aim was to derive subject long answers with more words to express rather than limit responses to agree-disagree with no reasoning. The questionnaire in this study was derived as a result of formats from previous studies as well as from the interviews conducted (refer to table in Appendix). Each interview typically lasted for about an hour with each question taking up to 2 to 5 minutes for answering depending on the respondents' familiarity and understanding. Follow up questions were asked and prompts (refer to sample interview schedule in Appendix) were used to gain deeper understanding as well as to provide clarity to the respondents when they were unsure of the questions presented. However, the approach and order of questions remained the same. Two projection questions are asked at the end to know if consumers have concerns or issues with AI to make sure that the trust factor emphasised in the literatures is studied and if there is any influence of nationality or culture in

their attitude or perception of technologies. The aim of projection questions being placed at the end as they arose out of pilot and final interviews and was to ensure there are no untapped concerns or factors that are unknown which play a crucial role or has an underlying influence. The last question aims to see if culture or nationality plays a role and derived as a question as a result of few interviews which pointed out the research in to the cultural direction (consumers from China mentioning that nationality or concerns of national privacy issues influences their perception). The questions and the respective research questions being answered are mentioned in the Appendix (Table 2).

Data Analysis

The collected data and insights from interviews were analysed by the method of Content and *Thematic Analysis* by simply understanding and decoding responses given by interviewees. The entire process of data analysis was based on *phenomenological reduction principles (Moustakas, 1994)* starting from horizontalization which refers to putting the ideas on a plane without any assumptions which was done by taking notes and listening to recordings extensively and carefully multiple times, followed by reduction where unwanted themes were eliminated and lastly, the themes and responses were clustered to form a logical in-depth analysis. In terms of demographics, gender distribution was equal with 10 females and 10 males in the sample (Distribution chart in Appendix). Out of the total, 10 respondents were between the age of 22-26 while 6 belonged to the age group of 18-22 and only 4 of them were between 26-30 (age distribution graph in Appendix). This ensures a good spread of age distribution to avoid bias in opinions due to age. A table is formulated displaying answers by all the respondents to compare and get comprehensive view of the results of the study (table in the Appendix)

NVivo 10 Software was also used to analyse the data and assist in the qualitative research by creating word frequency table, word clouds and identifying most often used words and responses to understand the feelings, purpose and reason for the use of Artificial Intelligence. NVivo helped in structuring the analysis and creating a track record of the analytical process thus, increasing the rigor and transparency of the research *(Jackson & Bazeley, 2019).* The keyword frequency table and word cloud helped in identifying the most used words by the consumers in identifying the pattern and analysing the word most used to describe the feelings (refer to table 4 and figure 8 in Appendix).

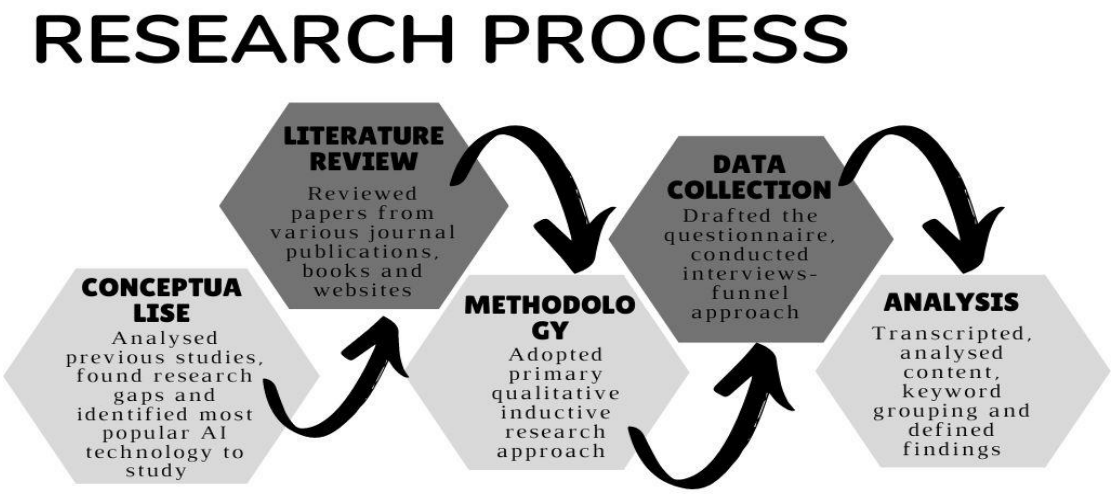


Figure 4: Summary of the adopted research process

FINDINGS AND DISCUSSION

Consumer Awareness and Perceptions about AI in the retail sector

Consumer Awareness: Consumer awareness and knowledge precedes the behaviours, perception and attitude *(Chartrand, 2005)*. Awareness about existence and use cases of a technology influences behaviour and attitude towards a product or service. Likewise, consumers' awareness has impacted their perception about Artificial intelligences and has altered the way consumers perceive or use/interact with technology while shopping online. From the interviews, it can be observed that most of the consumers were aware of the use of Artificial intelligence and the phenomenon behind the recommendations, chatbots, AR/VR and Voice assistants, while few of them learnt exact definitions during the process of study but had used them in some forms. The participants defined AI as *'machines learning to behave like humans' or 'algorithms programmed to imitate the human intelligence' which was similar to the definition used in the study by Kaplan and Haenlin (2019)* (refer to Table 3 in Appendix) which can be as a result of influence from peers, word of mouth, education etc *(Ha, 2004; Pantano, 2011).* The influence of science fiction movies in building the understanding and perceptions of AI was also noted from the interviews which is also agreed by *Lorenčík et al (2013).* All consumers (100%) were aware about AI and had decent understanding but irrespective of how aware they are of AI, claimed that its presence is unknown several times and agreed that it plays a significant role in their everyday lives. Consumers are amazed by sophistication, precision and wide spread applications of AI and believe that AI is future, however has concerns about privacy and security and feel threatened by invasion of AI in their personal lives through applications and internet. Few respondents narrated instances where advertisements on social platforms like Instagram, Facebook appeared when they made a similar search on another application which is all credited to Artificial intelligence and is scary to the population. The concerns over AI don't overweigh its benefits but keeps consumers conscious and aware of presence of these technologies in their surroundings.

Artificial Intelligence vs Humans

The study also made an attempt to find out the difference between AI and humans and the consumers' preferences as inspired by Chen et al (2021)'s study. It was revealed that respondents interact with AI in the same way as they do with humans, however, in few cases they prefer human interaction while retail shopping. The 24/7 availability of AI, operational efficiency during shopping gives AI an advantage over human operated customer service, however, AI still lacks in-depth emotional understanding about humans and is similarly unaware technologies like Chatbots, Recommendation engines, VAs do not understand human language and specific details provided by human consumers

making it difficult to use the technologies. Developments in areas of *Generalisation, Specificity and humanisation* is still required.

Consumer perception: Post awareness, the perception about AI and its application in the retail sector was tested. The perception of consumers about AI is grounded and rooted in their understanding and usage of AI and its devices. Interpretation of AI is multidimensional, mixed and relational with a focus on emotions and functionality. AI is considered 'cool but at the same time hard to believe or connect' as some still prefer the 'warmth and human touch' to services being provided. Participants still use AI in its basic forms through Google maps, Gaming and voice assistants like Alexa or Siri for setting alarms or calling someone and have not taken advantage of the capabilities at its fullest. While testing the understanding and perceptions about reason of usage intention, words like *automation, algorithms, convenience (indicating ease of use) and personalisation* were most commonly used throughout the interviews while describing AI and its technologies as evident from the Word frequency table and word cloud derived (refer to table 4 and Figure 8 in Appendix).

The elements of TAM like *Ease of use and usefulness* are one of the many reasons why consumers use or would use AI but factors like *accuracy of personalised recommendations, role of interactivity which enhances the consumer experience play vital role in forming perceptions and acceptance of AI.* The findings of this study agree with influence of TAM model elements as consumers believe AI technologies are useful and easy to use as there is no much need to learn how to use and can be used in the most convenient forms. Along with the TAM elements, *Personalisation, convenience (ease of use or usefulness) and interactivity* were considered to be the most popular reason of use by consumers followed by *Experiment or fun.* Since AI is widely used for gaming rather than shopping by consumers, the preferences of elements in each activity differed. It was observed that *Experimental tendency or curiosity* does not play a role when purchase decisions are involved but can come into play when it is for fun like gaming, entertainment movies or experiences etc.

Recommendation engines and Chatbots were the most used technology by all consumers while Voice Assistants and *AR/VR were the least interacted technology* in retail sector due to limited abilities to fulfil shopping related tasks and lack of wide presence/heavy investment requirements respectively.

Influence of culture: Lastly, 90 percent of participants claimed that culture doesn't influence perceptions or attitude towards AI or technology. Exposure and interaction with technologies can be affected due to the nationality of participants as a result of technological infrastructure and development in the country, however, perception or attitude depends upon the individual experience and customer journey a participant has gone through as a consumer *(Ha, 2004).* The perception is

formed as part of multiple external influences and personal experience and preferences *(Zhong et al., 2022).*

Influence of AI on the purchase decisions or perception about a brand

The presence or usage of Artificial intelligence by brands are seen as a sign of progressive or innovative brand and attracts consumers towards the brand. The participants in the study admitted that usage of AI by the brand in its basic or creative capacities make consumers curious and intrigued about the brand and its products influencing the decision till the point of considering, evaluating but the last stage of final decision of buying still is influenced by the quality and price of the product *(Nica et al., 2022)*. The purchase decision about the products that are cheap or of no higher value has chances of being purchased as a result of mere curiosity and fascination about AI. Overall, 80 *percent* of the respondents admitted that Artificial intelligence has influenced their purchase decisions and extra products were added to the cart or the cart was modified as a result of the *recommendations* by and influence of AI.

Impact of Voice Assistants like Alexa, Siri

Voice assistants are the most popular technology in everyday life of the consumers under study amongst all other technologies, however, its influence on shopping or decision making in the retail sector was the *least.* According to the interviews, consumers used Voice AI mostly for entertainment and basic information purposes rather than shopping. It was also observed that consumers find it time-consuming to search about a product, check reviews about a brand or product through VAs and are suspicious about the source of information. Involvement of VAs in a customer's retail purchase journey is *very less due to time consuming nature and unreliable sources of information (McLean et al., 2021)* along with inability to understand the specific information or accent of consumers. Consumers do not make purchase decisions or finalize purchases through Voice AIs as they want to see the product, read reviews and research in dept before making purchase decisions which AI cannot provide *(McLean et al., 2021).* Thus, even though Voice AIs are widely used, their impact on the retail sector is still minimal or are insignificant due to consumer's preferences and importance of feel, vision and touch.

Impact of Recommendation Engines

According to the interview responses, Recommendation engines influences the buyer purchase decisions significantly. The term 'Recommendation engines' when used during the interviews, consumers were confused as to what technology was being referred to, but when explained about the

definition and use, a lot of examples and instances were narrated about its *usefulness* and influence on the retail experience. The findings were in line with previous studies by multiple scholars *(Hostler et al., 2011; Ying et al., 2018)* where *perceived usefulness* was positively related to the consumer's purchase decision. Recommendation engines are *enablers of individual agency* and influences not only the planned but unplanned purchases of the participants as well by recommending products *(Ying et al., 2018)* through sections like 'People also bought' or 'Similar products you may like' which influences the consumers to buy products they didn't know they wanted or did not want at all. Recommendation engines were rated highly accurate by consumers in most cases. *Usefulness and personalisation* are the mostly used words to describe feelings about Recommendation engines.

Impact of Chatbots

Chatbots are used for conflict resolving, enquiries or to find specific products on the websites by the participants in the retail context. The respondents claimed that *24/7 availability, ease of conversation and the ease about tone and usage of words without caring about interpretation* makes chatbots desirable (Brandtzaeg & Følstad, 2018). The participants preferred chatbots over humans as they believed there is no need to worry about setting an emotional connect with the bots unlike human customer service agents. However, chatbots are undesirable while consumers want specific products and the chatbots fail to understand the specifics and emotions related to the product. *Perceived usefulness, ease of use, convenience and interactivity* was positively related and were mostly used words to describe the impact of chatbots on the retail consumers. The technology, however is not seen as the one that would transform the retail sector in the future or influence the consumers' purchase decisions.

Impact of Virtual Reality

The participants seem to have least interacted with the particular AI technology of Virtual reality clearly depicting the technology's spread and development. The technology is used in the retail sector but there is still less awareness about the technologies as they are not widely and easily implemented by the brands *(Farah et al., 2019).* It was observed that consumers also feel uncomfortable with such technologies while at the same time the technology is considered *cool, fun and entertaining* with lots of potential in the future retail sector *(Pizzi et al., 2019).* The technology is in its early stage of development with usage being mostly in the gaming industry or few retail applications like Virtual try-ons by various brands, for example, by cosmetic and glasses industry to depict how a particular lipstick or glasses look on the consumers.

Future of Artificial intelligence

The consumers in the study believe Artificial intelligence and its technologies are the future. They are also expected to displace humans and will thrive in sharing and experience economy due to which few technologies are preferred over the other *(Shankar, 2018).* According to the participants in the study, Recommendation engines and Augmented/Virtual Reality are most impactful technologies for the future in retail sector as recommendation engine personalises and makes life easy for consumers by suggesting accurate products through algorithms and understanding the consumers' needs without much input from the consumers. *Virtual reality was highly voted after recommendation engines as consumers now want interactivity and entertainment while shopping*. In the post covid era where consumers sought least human interaction and convenience of shopping from home making found AR/VR most preferable.

Discussion

Overall, the paper aims to contribute to the field of retail research by exploring consumer awareness, perceptions and integrating multiple technologies in the same paper as this has not been done before. It enables retailers to compare and decide the right technology to invest in, to influence and attract consumers. It is clear that Recommendation engine was the most impactful technology out of all the technologies studied in this paper and it's clear that AI influences brand perception of consumers.

This study embraced the work of *Chen et al (2021)* by adopting similar methodology and *studying a new market with different cultures while pointing out the importance of additional emotional as well as technological constructs that* does not form part of the TAM model but influences the consumers' perception leading to ultimately adoption of AI.

Theoretically, it enables researchers in understanding influence of different factors in different ways and extends over *Chen et al (2021)'s* study by adopting similar approach and proposes an integrated model with multiple factors apart from just TAM model while integrating Stakeholder theory. The additional elements added in the study helped in identifying the psychological factors that influences perceptions of consumers about AI apart from PEE and PFL. While relevance of Stakeholder theory is to ensure that all aspects of consumers concerns are addressed and all consumers in the era of one 'online' world are at the epitome of the pyramid for decision making.

The findings and literature review similarly noted that *personalised and customised Experiences (Pine & Gilmore, 1999)* and the influence of *emotions* matters over just functionality for new generation consumers. Therefore, there is a need for developers and managers to humanise technology and enable AI to perform tasks that require *display of intuition and empathy in the future* as agreed by *Huang &*

Rust (2018) and Libai et al (2020). However, emotions, expectations and perception changes over countries and cultures, thus in the current era of AI, where international consumers are also focused on, to influence whom, culture will play a crucial part which is an additional contribution of this study. According to this study, 90 percent consumers did not feel the influence of culture and nationality on perceptions which disagrees with the studies by *Phillips et al (1992)* and *(Slyke et al., 2004)* as they state otherwise and shows significant relationship.

Thus, it can overall be noted that the perceptions of consumers are affected by duality of AI as it is based on their interaction with AI devices which reinforces arguments between algorithmic appreciation and technological aversion based on individualistic preferences *(Matthews et al., 2021; Chen et al., 2021).* The consumers still base their opinions and acceptance of technology on their customer journeys and personal experiences which managers should understand while implementing technologies. If proper sentiment analysis is done and strategic importance to clear value communication with usage of high-quality technology is in place, success in the domain of retailing with the help of Artificial intelligence is achievable.

CONCLUSION AND IMPLICATIONS

The proliferation of AI and its implications has occupied the interest of researchers and executives around the world. Its potential and significance in future cannot be overlooked. Businesses and consumers are gearing towards learning, understanding and adopting AI due to *convenience and interactivity* it provides by making the *experience enjoyable and valuable*. This research shed light on various technologies under the umbrella term AI to understand its impact on Gen Z and Millennial generations' awareness, perceptions and experiences. With help of theories like TAM and Stakeholder theory, study pointed out the importance and need to understand consumers' point of view as there is a need to reduce consumers' and retailers' expectations gap ultimately leading to higher purchase intention, satisfaction, conversions and finally loyalty. There are other factors that this study takes into account from previous studies like: Personalisation, Interactivity, Experience, Enjoyment, Aesthetics, Attitude, etc. which are proven to influence the impact of AI *(Pantano et al. 2017; Chung et al., 2018; McLean & Wilson, 2019; Pillai et al., 2020; Ameen et al.,2021)* in addition to the elements of *TAM model.* It is clear from the findings of the study that consumers want *interactivity, personalisation and convenience* in their shopping experience now and the perceptions of consumers are still in its early stages as AI itself has not developed to its full potential yet but.

Implications

The study has theoretical as well as practical implications. Theoretically, study fills the gap in research in finding out consumers' point of view in the field of AI retailing, comparison of impact and efficiency of each applicable technology under AI. Secondly, study contributes majorly by integrating TAM and Stakeholders model along with few other psychological factors to build an entirely integrated and comprehensive model which has not been done in previous researches. Moreover, study focuses on a market like UK which has not been studied or focused by scholars in the context of AI and Retail sector despite enormous potential. Thus, the study through its contributions, establishes that there is a need to build a model involving multiple and cross disciplinarian- emotional, technological and situational constructs to properly understand the factors influencing perceptions and the impact of AI or any technology with respect to consumers.

Practically, for managers, this study aims to help them decide which technology is better to implement that will have the highest impact on customers' journey and final purchases. This study also enables businesses to find out points of improvement where AI is currently lacking to improve and implement efficiently. The study also indicates that businesses might want to proactively educate and promote AI and AI devices as it is clear from the study that consumers' knowledge and interaction is limited with multiple layers of friction impacting the behaviours and perceptions.

Limitations of the Study

Nevertheless, there are several limitations to the study conducted. This research is a snapshot of impact of AI on consumers' perceptions and experiences in just a particular time which is a dynamic phenomenon constantly evolving and transforming. Secondly, the study looked at the impact of AI on the retail sector in a general perspective without defining a particular industry or line of product giving a general perspective. The size of study is also a limitation as the perspective of 20 people from different cultures can still not produce accurate results. Accordingly, to expand the literature and research on consumers' perspective of AI, future research should focus on diverse cultures and culture comparison to study the impact of different cultures as most of the participants in the current study are Indians with very few from other cultural backgrounds. Research in the future can also focus on understanding the company or business perspectives in order to compare and find gaps between implementation by companies and demands of the consumers which this study currently lacks. Impact of AI technology on customer loyalty as agreed by *Har et al (2022)* should also be focused on by future researches.

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APPENDIX

Various types of AI tech influencing consumer experience

The technologies that we aim to focus in this study are: *Chatbots, Recommendation Engines, Voice Assistants and Augmented Reality/ Virtual Reality.*

Table 1: Brief about the technologies being studied in the current research

Technologies	*Chatbots*	*Recommendation Engines*	*Voice Assistants*	*AR/ VR*
Definitions	The boxes that appear or pop up on the websites for immediate query resolution of a customer are known as chatbots. Have evolved over the years from being simple rule-driven to AI based using NLP and NLU.	"A system that automatically selects personally relevant information for the users based on their preferences". It helps the users compare the list of options by displaying list of similar items that the consumers have previously viewed or liked (Schrage, 2020).	Voice assisted devices like Amazon's Alexa, Apple's Siri among many others that converses with the consumers to complete the required tasks, helps in making decisions and provides suggestions or guidance with no learning curve.	multi-sensory experience defined as real-time inducing graphics with multi-dimensional framework, long with a display tech-nology providing model integration" (Earnshaw, 2014)
Characteristics	Entertaining, interactive and social-relational	Focuses on personalisation, data mining	Provides convenience, trust, emotional presence	Interactive, multi-dimension,

	benefits, provides unbiased information and anytime responses unlike humans which makes this technology useful and popular in the retail era where convenience and speed are highly valued.	techniques and recommends using previous searches and preferences of the consumers.	and control to the consumers.	creates experience, facilitates convenience.
Impact on retail sector consumers	Retail brands have developed smart AI chatbots who chat with customers like real time sales representatives, asking them their requirements and generates real time options (Tran et al., 2021). Even queries, complaints can be registered by just chatting with the bots who gives a feeling of real	One of the most relevant technologies in the retail sector. Salesforce study also found that users are 4.5 times more likely to add a product to their cart from the recommendation list which is an impressive number (Schrage, 2020).	A study by Accenture shows that 3 in 10 talks to Virtual Assistants more than their family members (Accenture 2018). In a study by McLean et al. (2021), it was found that VAs possess and are used for its multiple attributes like: Situational, technological and even social. This technology has helped consumers in their decision	Enhances customer experience as well as enables efficient logistics and business management. Creating experiences for the consumers for better brand recalling in a customised and personalised manner (Pine & Gilmore, 1999)

	time employee representatives		making while shopping by not having to interact with a user interface and by mere communication enabling to build trust.	
Growth and future of the technologies	The chatbot market is expected to grow from 2.6 billion dollars in 2019 to 9.4 billion dollars in 2024	A survey conducted in 2019 established that personalised product recommendation contributed for almost 31 percent of revenue in the global e-commerce industry (Schrage, 2020).		VR is still underused due to affordability and awareness but is expected to be most influential technology in the future making experience and convenience as one (Farah et al., 2019)
Studies using TAM and understanding consumer perceptions	Brandtzaeg & Følstad (2018), De Cicco et al. (2020), Tran et al., (2021).	(Leavitt, 2006).	Klaus & Zaichkowsky (2021), (McLean et al. (2021)	NA
Finds from previous studies	The attitude towards chatbots is mediated by social enjoyment and trust along with social		The perceived ease of use and usefulness positively impact use of VA in brand engagement but does not influence the	No direct impact of perceived ease of use but may have indirect impact through

	presence as human beings still look for warmth, personal interaction (DeCicco et al., 2020)		purchase decision due to fear of security and lack of trust on accuracy (McLean et al., 2021)	perceived usefulness and other hedonic factors studied (Sagnier et al., 2020).

***Table 2**: Summary of questions asked during the interviews*

RQ 1: Perceptions about AI and if the consumer is aware of their usage of AI? 1. What do you think of when hearing the term AI? 2. Could you please share your understanding of AI? 3. What are your previous experiences with AI like? 4. What are your feelings towards and evaluation of AI? 5. How much part do you think AI plays in your everyday life? ***RQ 2: How do AI technologies impact consumer engagement and experience?*** 6. Do you/have you used any of the AI services or devices while shopping: Recommender engines, AR/VR (offline retail outlets), Voice Assistants like Siri and Alexa as well as Chatbots**.**	-The highlighted questions are adapted from the study by Chen et al, 2021. The non-highlighted questions are drafted as a result of pilot interviews conducted to understand the perceptions and experiences of the consumers.

7. Which of the following words do you relate to the most when you think of Artificial Intelligence and shopping together? i. *Ease of use* *ii. Usefulness iii. Experiment iv. Enjoyment v. Attitude* *vi. Personalisation vii. Interactivity*	-Factors adapted from studies by (Pantano et al., 2017; Chung et al., 2018; McLean & Wilson, 2019; Ameen et al.,2021; Pillai et al., 2020)
8. Could you please share your personal stories of interacting with these AI technologies?	
9. To your understanding, what are the main differences between AI and real humans?	-Adapted from the study by Chen et al, 2021.
10. Does presence of AI affect your evaluation or perception about a brand?	
RQ 3: What are the different types of AI technologies currently impacting the retail experience of the consumers?	
11. *Do you think/would you use these technologies extensively in the future while shopping?*	
12. *Which of these AI technologies do you think are most useful while retail shopping? Give reasoning with experience.*	
13. *Do you have any concerns about AI?*	
14. *Do you think culture or nationality influences your attitude or perception of AI?*	-Adapted from the study by Chen et al, 2021.

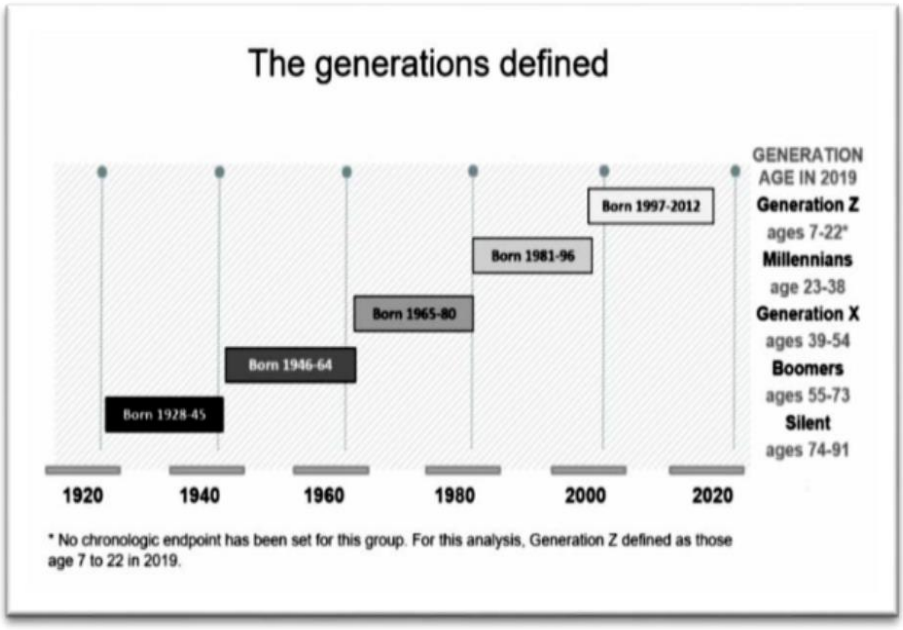

Figure 5: Generation scale defined. Source: Ponzoa et al. (2021)

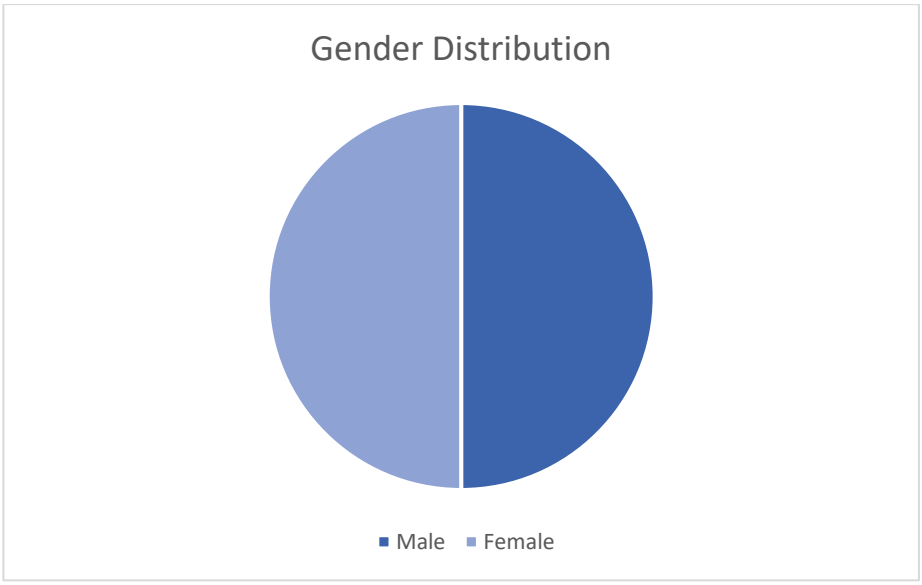

Figure 6: Gender distribution of the study

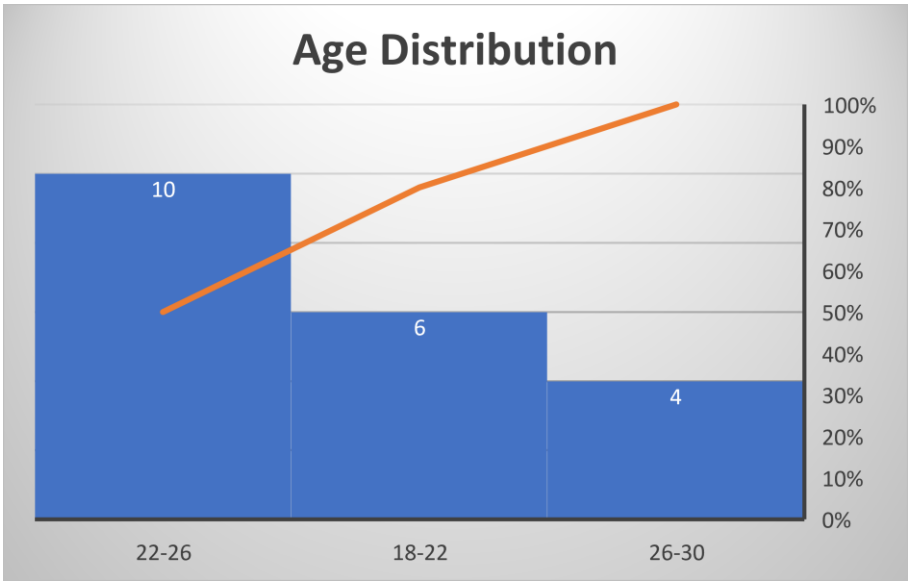

Figure 7: Age distribution of the sample

Interview Sample

Respondent's profile:

Name: Tharindu

Occupation: PhD student of AI

Age: 28

INTERVIEW:

Interviewer: Firstly, what do you think when you hear the term Artificial intelligence?

Interviewee: As an AI student, Computer paradigm trying to perform human-like tasks for easy and advanced life applications

Interviewer: Can you share your understanding of AI?

Interviewee: It affects consumers in multiple ways and is here to make lives easier.

Interviewer: What are your previous experiences with AI like?

Interviewee: I interact with AI every time as it affects almost lot of things, for example, with search engine, used in social media uses and even if you go for retailing it helps you in identifying customer preferences, making recommendations, in smart cars like Tesla and so on. When something is

recommended while online shopping, it's powered by AI and even if you go for offline shopping, how they arrange the clothes and stuff is basically all AI.

Interviewer: So what are your feelings associated with AI?

Interviewee: I feel since I belong to the field I am not scared of AI. So, I majorly feel its helpful, in terms I can see what I want to see and don't have to spend too much time searching for the products and anything and basically makes my life convenient

Interviewer: How much part do you think AI plays in your everyday life?

Interviewee: I think it plays a huge role and in online shopping experience, a lot.

Interviewer: Ok great. So now, Have you used any of the AI services or devices while shopping: Recommender engines, AR/VR (offline retail outlets), Voice Assistants like Siri and Alexa as well as Chatbots?

Interviewee: Yes, I have generally used all these technologies except for AR/VR significantly and I have instead even built Chatbots.

And have you used all these technologies in your retail experience or just general use?

I have used recommendation engines, Chatbots and Voice assistants for my retail experience but I don't find Chatbots or Voice AI for shopping. I feel they are not very helpful.

Interviewer: Why do you think that is the case? Why are they not helpful?

And I have used Voice assistants and built one as well and know it can do way more but still needs to be developed more and there is reluctance from consumers due to its limited capacities as of yet. And Chatbots just pick keywords and don't really get the essence behind shopping a particular product.

Interviewer: So can you tell me instances where you have used these technologies that I mentioned?

As recommendation engines are the mostly used ones in my case. I am aware of the usage of the others and have used once or twice but not a lot. But I use recommendation engines a lot to check out more products and since they come anyways, I always have a look.

Interviewer: So do you get influenced by the recommendations and are they accurate to your preferences?

Interviewee: Yes, they are accurate due to the data accumulation companies nowadays have. I do add products to my cart based on the recommendations I receive.

Interviewer: OK so now, I'll tell you few words and you have to tell me which of the following words do you relate to the most when you think of AI and shopping together? i. Ease of use ii. Usefulness iii. Experiment iv. Enjoyment v. Attitude vi. Personalization vii. Interactivity

Interviewee: If I was to choose, I feel personalization and usefulness are the words that I associate the most with.

Interviewer: So why these two specifically?

Interviewee: I believe I want to find things with the least effort and personalization helps me attain that goal. I feel heard, seen, and understood.

Interviewer: What is the main difference you think is between AI and real humans?

Interviewee: As of now AI is very narrow in the current grand of work but good with specific tasks while bad at generalizations.

Interviewer: So what would you prefer: AI or humans while shopping?

Interviewee: If AI has an emotional sense, I would use AI but not as of now as it currently lacks the emotional aspect to it.

Interviewer: Does presence of AI affect your evaluation or perception about a brand?

Interviewee: Positively yes, as it shows that they are technologically advanced, but I would not buy it just because they have AI. There are other factors that matter as well.

Interviewer: So, what other factors influence your buying decision?

Interviewee: I would look at price and quality as well.

Interviewer: Would you use these AI technologies extensively in the future while shopping?

Interviewee: Yes, 100 percent.

Interviewer: Which technology do you think is the most impact for the world in terms of retail experience and why?

Interviewee: AR/VR for sure. It has a sense of goodness and interaction. In a society where we are doing everything on our own and alone, there is no other technology that gives us a sense of community or togetherness except for AR/VR which is very interesting, like when you say shopping specially, you want to do it together.

Interviewer: OK, so do you have concerns about AI?

Interviewee: No, I don't have any concerns. I know privacy or security can be an issue but there are ways to preserve privacy with firewalls and all. I know like Armageddon kind of scenarios exist but it's hard to happen and as of now I don't fear it.

Interviewer: Any last additional notes?

Interviewee: There is a lot of room for AI to improvise. We are in the very early stage where it has not come to its max potential even. I believe Amazon in the retail sector has developed and is doing pretty good but other brands still need to take over.

Interviewer: Lastly, do you think culture influences your perception or attitude towards AI?

Interviewee: Any cultural prejudices can be replaced by knowledge and I believe in the online era, the influence of home country culture is not that significant.

Table 3: Summary of findings of responses

Respondent	***What is AI?***	***Used technology***	***Words associated with shopping and AI***	***Most prevalent future technology***	***Influences brand perception or awareness***	***Concerns***	***Nationality***
Trisha	Algorithms, interaction with computer	AR/VR, Recommendation engines, Chatbots, Voice AI	Ease of use/Convenience, Enjoyment	Voice AI	Yes	Replacing humans, lack of deep understanding, privacy	India
Jai	Automation using algorithms	AR/VR, Recommendation engines, Chatbots, Voice AI	Interactivity	Chatbots	Yes	Privacy, Manipulation/Persuasion	India
Tarindu	Computer paradigm trying to perform human-like tasks for easy and advanced life applications	Recommendation engines, Chatbots, Voice AI	Personalisation, Usefulness	Recommendation engines, AR/VR	No	Use of AI for wrongdoings- military and others, Lack of generalisation and awareness	Sri Lanka

Aleena	Automated application, makes life easy by performing on behalf of humans	AR/VR, Recommendation engines, Chatbots, Voice AI	Interactivity, Usefulness	Recommendation Engines	No	Uncomfortable, Lack of generalisation	Pakistan
Anthony	Makes life convenient, performs tasks with just simple commands	AR/VR, Recommendation engines, Chatbots, Voice AI	Personalisation, Usefulness, Interactivity	AR/VR, Recommendation engines	Yes	Privacy or security and lack of generalisation	Africa
Grace	New technology which is fun	Recommendation engines, Chatbots, Voice AI, AR/VR	Ease of use, Interactivity, Fastens the process	AR/VR	No- focus on quality and price	Privacy	China
Sherry	Computers which learn	Recommendation engines, Chatbots, Voice AI	Ease of use, Interactivity	AR/VR	No	Privacy	China
Sean	Computer algorithms designed to learn and adapt to human intelligence for convenience	AR/VR, Recommendation engines, Chatbots, Voice AI	Usefulness, Experiment, Interactivity	Recommendation engines, AR/VR	Yes	Lack of humanisation	USA
Chinmay	Automation, efficiency, Machine learning	Voice AI, Recommendation engines, Chatbots, AR/VR	Ease of use	Recommendation Engines	Yes	Over dependeny on technology	India

Dimple	Automation and Digitization	Voice AI, Recommendation engines, Chatbots	Ease of use, Enjoyment, Interactivity, Behavioural Intention	Voice Assisted AI	No	No concerns	India
Maria	Tool that predicts consumer behaviour, personalises search and helpful in shopping	Recommendation Engines, Chatbots, Voice Assistants	Behavioural Intention	Recommendation engines	Yes	Privacy, replacement of humans	UK
Shweta	Ability of machines to perform intelligent tasks, assisting customers while shopping	Recommendation Engines, Chatbots, Voice Assistants, AR/ VR	Ease of use, Usefulness, Enjoyment, Interactivity	Chatbots	Yes	Inaccuracy and technological breakdowns	India
Minal	Automated process by machine	Recommendation engines, Chatbots, Voice AI, AR/VR	Ease of use/Convenience	Recommendation engines	Yes	Not creative, lack of personalisation	India
Gokul	Automation and use of machine learning	Recommendation engines, Chatbots, Voice AI	Ease of use, Usefulness, interactivity	Virtual Reality	No	Lacks understanding of emotions	UAE
Aditi	Automation to perform tasks with the use of intelligence	Recommendation engines, Chatbots, Voice AI	Ease of use, Behavioural intention, Interactivity	Chatbots and Voice AI	Yes	Safety and security	India

Bosco	Use of extensively available data to understand humans	Recommendation engines, Chatbots, Voice AI, AR/VR	Ease of use and usefulness	AR/VR	No	Privacy and lack of generalisation	UK
Zhang	Any machine or process that imitates human intelligence	Recommendation engines, Voice AI, Chatbots	Ease of use, Personalisation	Chatbots	No	Privacy	Hongkong
Murani	Use of computers to make decisions with minimal or no human input	Recommendation engines, Chatbots, Voice AI, AR/VR	Ease of use, Personalisation	AR/VR	No	No concerns	Africa
Krishna	Makes the system organised and tasks easier	Recommendation engines, Chatbots, Voice AI, AR/VR	Ease of use, Usefulness, Enjoyment, Experiment	AR/VR	Yes	Privacy and security	India
Armaan	A system that teaches machines how to identify and perform tasks	Recommendation engines, Chatbots, AR/VR	Ease of use, Interactivity	Recommendation engines	No	Privacy and Security	UK

Table 4: Word Frequency Table depicting the most used words

Word	Length	Count	Weighted Percentage (%)
engines	7	60	2.19
recommendation	14	59	2.15
voice	5	56	2.04
retail	6	54	1.97
experience	10	52	1.90
shopping	8	48	1.75
chatbots	8	44	1.60
ease	4	42	1.53
technology	10	30	1.09
interactivity	13	29	1.06
usefulness	10	25	0.91
personalisation	15	24	0.87
experiences	11	18	0.66
online	6	17	0.62
useful	6	17	0.62
privacy	7	16	0.58
concerns	8	15	0.55
enjoyment	9	15	0.55
accurate	8	14	0.51
purchases	9	14	0.51
chatbot	7	13	0.47
interacting	11	13	0.47
products	8	13	0.47
behavioural	11	12	0.44
decisions	9	12	0.44
intention	9	12	0.44
interaction	11	12	0.44

experiment	10	11	0.40
machine	7	11	0.40
devices	7	10	0.36
easy	4	10	0.36
intelligence	12	10	0.36
recommendations	15	10	0.36
personalisation	15	9	0.33
virtual	7	9	0.33
applications	12	8	0.29
attitude	8	8	0.29
behaviour	9	8	0.29
helpful	7	8	0.29
interacted	10	8	0.29
algorithms	10	7	0.26
recognition	11	7	0.26
aesthetics	10	6	0.22
automation	10	6	0.22
convenience	11	6	0.22
convenient	10	6	0.22
customers	9	6	0.22
industry	8	6	0.22
influence	9	6	0.22
information	11	6	0.22

Figure 8: Word Cloud depicting the most used words