



# **The Effect of Artificial Intelligence on Customer Journey in Online Retailing**

International Business  
Master's thesis

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Artificial Intelligence (AI) is transforming and shaping the customer journey in online retail platforms by influencing how customers interact with the retailers and how effectively brands can fulfill customer's needs. As AI tools are integrated into online retail platforms to influence customers experiences, understanding their impact on consumers behaviour and building a long-term customer relationship is necessary. This research explored the effect of AI tools, especially recommendation engines and chatbots across online customer journey: pre-purchase, purchase, and post-purchase stage. The main motivation of this study was to figure out how technological advancement can align and shape an ethical, transparent, and user-centric shopping environment. By using a qualitative research design combining an online survey and focus group discussion, this study explored customers' perceptions on AI-driven features like personalization, interaction, trust, and ethical concern. The findings of this study revealed that AI streamline customer experience and satisfaction positively, but customers have concern about transparency, data privacy, and emotional engagement. This study offered theoretical insights into the AI's role in shaping digital customer journey. It also offered practical insights for online retailers who want to integrate AI tools in their platform ethically and effectively.

**Key words:** Artificial intelligence, customer journey, online retailing, AI, pre-purchase stage, purchase stage, post-purchase stage, recommendation engines, chatbots.

## TABLE OF CONTENTS

<b>1</b>	<b>Introduction</b>	<b>7</b>
1.1	Phenomenon	7
1.2	Research Gaps	8
1.3	Research Purpose and Research Questions	9
<b>2</b>	<b>Literature Review</b>	<b>12</b>
2.1	Online Retailing	12
2.2	AI Tools in Online Retailing	13
2.3	Customer Journey	15
2.4	Customer Journey in Online Retailing	18
2.4.1	Pre-Purchase Stage of Customer Journey in Online Retailing	19
2.4.2	Purchase Stage of Customer Journey in Online Retailing	20
2.4.3	Post-Purchase Stage of Customer Journey in Online Retailing	21
2.5	AI Tools in Customer Journey	22
2.6	AI Tools on Customer Journey in Online Retailing	25
2.6.1	Pre-Purchase Stage	26
2.6.2	Purchase Stage	27
2.6.3	Post-Purchase Stage	28
2.6.4	Ethical Considerations	29
<b>3</b>	<b>Research Methodology</b>	<b>31</b>
3.1	Selection of Research Method	31
3.2	Operationalization Table	32
3.3	Data Collection	33
3.3.1	Online Survey	34
3.3.2	Focus Group Discussion	35
3.3.3	Confidentiality and Ethics	36
3.4	Data Analysis	37
3.4.1	Analysis of Survey Data	38
3.4.2	Analysis of Focus Group Discussion	39
3.5	Evaluation of the Study	41
<b>4</b>	<b>Findings</b>	<b>43</b>
4.1	Role of AI in Pre-Purchase Stage	43

	5
4.1.1 Personalization and Product Discovery	44
4.1.2 User Engagement and Interaction Quality	46
4.1.3 Trust, Transparency and Privacy	47
<b>4.2 Role of AI in Purchase Stage</b>	<b>49</b>
4.2.1 Transaction Efficiency	50
4.2.2 Transaction Support	51
4.2.3 User Engagement and Interaction Quality	52
<b>4.3 Role of AI in Post-Purchase Stage</b>	<b>54</b>
4.3.1 Post-Purchase Experience and Retention	54
4.3.2 Overall Satisfaction and Improvement Need	56
<b>4.4 Summary of the Findings</b>	<b>57</b>
<b>5 Conclusions</b>	<b>60</b>
5.1 Theoretical Contributions	60
5.2 Practical and Managerial Contributions	62
5.3 Limitations and Future Research Directions	63
<b>6 Summary</b>	<b>65</b>
<b>References</b>	<b>67</b>
<b>Appendices</b>	<b>73</b>
Appendix 1 Survey Questionnaire	73
Appendix 2 Focus Group Discussion Guide	75
Appendix 3 Informed Consent	78
Appendix 4 Data Management Plan	79
Appendix 5 Declaration on the Use of AI Assistant	82

**LIST OF FIGURES**

Figure 1: AI on customer journey.	9
Figure 3: Customer journey framework divided into stages by different scholars.	16
Figure 4: AI tools on customer journey in online retailing.	26
Figure 5: Qualitative data analysis using NVivo coding.	39

**LIST OF TABLES**

Table 1: Comparison of the offline and online customer experience.	18
Table 2: Operationalization table.	33
Table 3: Overview of focus group participants.	35
Table 4: Summary of survey data analysis of pre-purchase stage.	44
Table 5: Summary of survey data analysis of pre-purchase stage.	49
Table 6: Summary of survey data analysis of post-purchase stage.	54
Table 7: Summary of the findings.	58

# 1 Introduction

## 1.1 Phenomenon

The importance of the online market in today's world has grown beyond measure (Lemon & Verhoef 2016, 69). While technology takes over our life slowly day by day, artificial intelligence (AI) has become a crucial element in the process of customer journey. Customer journey can be defined as a complete series of interactions across all stages and touchpoints of purchasing process that a customer undergoes with a brand (Lemon & Verhoef 2016, 78). Usually, the touchpoints cover online and offline interactions with the customers from pre-purchase awareness to post-purchase support of the customer journey (Chen & Prentice 2024, 3). This trend is mostly visible in the field of online retailing which covers a major portion of retailing worldwide and a major platform where customer interactions is a vital element for business growth. Online retailing refers to buying and selling goods and services by using online channels and without the need of physical storefront which includes both business to business (B2B) and business to consumer (B2C) transactions (Hung 2005, 383). This huge size of online market has necessitated the use of latest tools which can manage and enrich the interactions with customers thus positioning AI as a major element of modern customer experience strategies.

As customers prefer online shopping over traditional marketplaces, so it has become an essential part of the businesses for expansion and growth. The transformation of digital marketplace was fuelled by the covid-19 pandemic which showed the need of a frictionless online marketplace in our daily life (Roggeveen & Sethuraman 2020, 2; Rana et al. 2021, 1749). AI tools play an important role in this context by providing insights about customers preferences and behaviours. These insights help businesses to personalize their marketing, have better product recommendation and offer better services to the customers ultimately making AI an important part in meeting customer demands (Nguyen et al. 2023, 2202).

The concept of customer journey itself has changed from being a simple process to a multichannel process that conducts online and offline interactions with the customers. As a result, retailers must need to use AI featured technologies like- recommendation engines, chatbots, predictive analysis to gather insights from every step of the customer journey and deliver seamless experience to the customers. Normally divided into the

phases of pre-purchase, purchase and post-purchase the process now requires more responsiveness. AI makes sure that businesses engage customers at every touchpoint according to their individual need through chatbots, recommendation engines etc. For instance, personalized recommendations at the consideration stage and proactive support in the post-purchase phase significantly enrich brand perception and customer loyalty (Yanxia et al. 2024, 3). However, while AI is showing potential influence in the customer journey process, the long-term effect of AI is yet to be investigated, like how it influences crucial factors like brand loyalty, customer retention etc (Nguyen et al. 2023, 2210).

## **1.2 Research Gaps**

Despite existing many literature (Casheekar et al. 2024, Rana et al. 2021, Pappalardo et al. 2024, Araújo et al. 2022, Chen & Prentice 2024) that focuses on the transformational role of AI in customer journey, a few gaps remain unsolved where further exploration is needed. Current studies mainly focused on the direct impacts of AI technologies like involving chatbots or recommendation engines in the customer services and sales (Chen & Prentice 2024, 1). But there are a very few literatures that explored the influences of AI technology at every touchpoint of whole customer journey (Araújo et al. 2022, 251).

To effectively manage the customer experience, businesses need to understand and control these touchpoints interactions properly (Lemon & Verhoef 2016, 71). Some of the existing literatures only focused on the specific touchpoint of customer journey rather addressing the whole process. For example, Pappalardo et al. (2024, 2) discussed about the role of AI in service and decision-making phase through enhanced customer engagement and interactions. Similarly, Adam et al. (2020, 429) discussed the influence of AI in facilitating customer experience through chatbots and recommendations engines. Both the studies provide valuable insights but there is a gap which is considering holistic role of AI through every touch point of purchase journey. They also overlooked how AI driven insights and personalized strategies interact in every touchpoint of the customer journey to provide a seamless customer experience.

Lemon and Verhoef (2016, 82) discussed that customer loyalty is an outcome of an effective end-to-end customer journey, but extant research has not examined how AI driven personalization throughout the customer journey foster customer loyalty. This leaves open the question of whether and by what mechanisms-AI interventions after purchase strengthen long-term customer commitment.

Moreover, issues like data privacy, algorithm transparency can raise customers' concern to which extent they can trust AI driven systems. Scholars have yet to unpack how such concerns influence customer willingness to engage with AI tools at every stage-from initial exploration through to after-sales support and what this means for delivering a truly seamless journey.

### 1.3 Research Purpose and Research Questions

The purpose of this research is to investigate the role of Artificial Intelligence (AI) on the customer journey of online retailing focusing on how AI technologies shape consumer experiences and decision making across the pre-purchase, purchase and post-purchase stages of customer journey. In the pre-purchase stage, the study explored how consumer trust and perceived values get affected by AI driven personalized product recommendations and optimized search functionality. Additionally, the study evaluates how transaction efficiency and transaction support is affected by AI-driven chatbots and automated checkout processes in the purchase stage. Finally, we will investigate how AI can facilitate customer loyalty and retention through follow up recommendations and customer support in the post-purchase stage. Figure 1 below indicated the direct effect of AI featured tools such as recommendation engines and chatbots on customer journey stages.

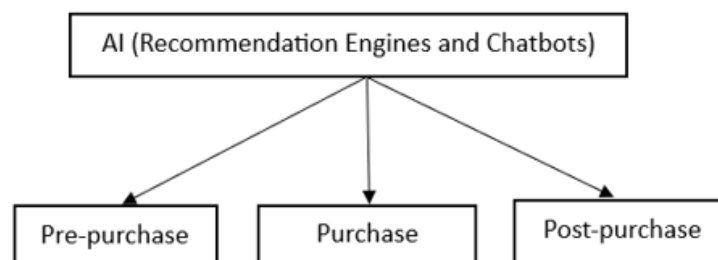


Figure 1: AI on customer journey.

This study guided by one main research question and three sub-research questions, which targeted each specific stage of the customer journey:

**Main research question:**

- How does the use of AI affect and shape the different stages of the customer journey?

**Sub-research questions:**

1. How does the use of AI shape the pre-purchase stage in customer journey?
2. How does the use of AI shape the purchase stage in customer journey?
3. How does the use of AI shape the post-purchase stage in customer journey?

The first sub-research question explores how AI technologies influence customers during the initial stages of their online shopping journeys. Specifically, it investigates the role AI plays in personalizing product discovery, enhancing user engagement and interaction quality, and addressing customers' concerns related to trust, transparency, and privacy. By examining these AI based features, the study aims to understand how AI shapes customers' early decision-making processes before making a purchase.

The second sub-research question examines how AI technologies impact customers during the actual purchasing process in online retail settings. It specifically explores the role of AI in enhancing transaction efficiency through features such as dynamic pricing and streamlined payment options, as well as providing transaction support via chatbots and real-time guidance.

The third sub-research question explores how AI influences the customer experience after completing a purchase in online retail. It specifically examines the role of AI-driven features such as personalized product suggestions, customer support interactions, and order-tracking assistance. The focus is on understanding how these AI-enabled experiences impact overall customer satisfaction, loyalty, and retention.

By addressing these questions, this study seeks to figure out the influential role played by AI from the initial stage of purchase journey like product discovery to after sales support which means the whole purchase journey in online retailing. In next chapter of the research discussed about the existing literature on online retailing, AI tools such as recommendation engines and chatbots, and customer journey framework. It outlined the AI effect across the customer journey: pre-purchase, purchase, and post-purchase in

online retailing. This study developed the foundation for the empirical analysis by examining the effect of AI writing each stage that existing literature discussed.

## 2 Literature Review

### 2.1 Online Retailing

Online retailing, which can be referred to as e-commerce, has changed the process through which customers interact with business by providing a shopping experience which is more flexible, personalized and convenient. As of 2024, the sales of global e-commerce reached a milestone of \$6.09 trillion, indicating an 8.4% increase compared to the last year's sales and forecast predicts that it will exceed \$8 trillion by 2027 (Shopify 2024). The number of online buyers has also increased significantly and right now approximately 2.71 billion people use this platform (inbeat 2024). Online retailing is not only a transactional platform rather it has become an entire eco system focused on delivering customer experiences across various touch points of customer journey. These experiences include activities like product discovery, interaction with the customers, purchase and post-purchase support and feedback collection. As the practice of shopping has moved from physical stores to online retail platforms, effectively managing these customer journey touchpoints has become more crucial to build a positive customer relationship (Grewal & Roggeveen 2020, 5).

Moreover, in online retail platform customer experiences are influenced by various factors such as website friendliness, the design of user interface, available information about the product, and social influence through reviews and recommendations (Pappas et al. 2017, 981). These factors influence the cognitive, emotional and behavioural reactions of the buyers which eventually affects the online customer journey (Rose et al. 2012, 310). Furthermore, the rise of multichannel model retailing where buyers interact with the sellers via website, mobile app, social media, and even physical store-providing a seamless and consistent customer experience in every platform has become very important to build trust and satisfaction (Verhoef et al. 2009, 32).

The concept of consumer behaviour has also shifted from firm-controlled interactions to customer-led journeys. Now a days, customer solely decides how, when and where they will interact with a brand which forced the brands to adopt customer centric design in their online retail strategies (Araújo et al. 2022, 253). As a result, online retail platforms are getting shaped by personalized and interactive technologies that offer personalized products and services according to the reference of the buyers (Kannan & Li 2016, 27).

Moreover, online retailing of present time does not represent only the digitalization of commerce rather it defines e-commerce platforms where customers encounter interactive experience, real-time personalization and greater customer control. Its further development depends on how well the brands can adopt and integrate modern technology into their business to meet the demand of digitally empowered customers.

## **2.2 AI Tools in Online Retailing**

Artificial intelligence has emerged as one of the key factors that is driving the innovations and changes in the e-commerce platforms which is shaping the strategy of how brands interact with their customers in the purchase journey. AI is capable of processing huge amounts of data and provides impactful insights within a short period of time which results in personalized and predictive customer experience. In the traditional system it is not possible to process this many data within a short period of time which makes AI an important part for modern e-commerce. AI tools can provide a wide variety of services like customized product recommendations, customer service chatbots, targeted marketing, transaction support, fraud prevention etc. These services improve operational efficiency, customer satisfaction and strategic decision-making capabilities (Araújo et al. 2022, 253).

Recommendation engines are among the most used and preferred AI applications in online retailing platforms. They collect data from previous purchases, browsing history, and customer preference to provide relevant product recommendations by using machine learning algorithms (Pappas et al. 2017, 980). Because of the data driven product recommendations it helps brands to improve their product suggestion and influence customer decision making and conversion rates (Chen & Prentice 2024, 8, lee et al. 2009, 18). Advanced models of recommendation engines use natural language processing algorithms which make it more capable of understanding the intent and emotional tone of the user to provide the recommendation more precisely (Dale 2016, 812).

Chatbots are the latest invention in the field of digital interaction, as they incorporate artificial intelligence to process human like conversations. An essential feature of advanced chatbots is their adaptability; they improve based on previous conversations, delivering more accurate responses (Wang et al. 2023, 4). This feature enables them to provide accurate responses to user queries in the shortest possible time.

AI-based chatbots can understand natural language, identifying user intent and creating appropriate responses that users like most of the cases. By using customer data and previous conversations of the customer, AI can predict the preference of the user and proactively engage with customers (Pappas et al. 2017, 972). In this process chatbots create such a highly individualized experience that mimics in-store assistant (Araújo et al. 2022, 253).

Another prominent AI technology in online retailing platforms is dynamic pricing. It helps the retailers to adjust the product price based on product demand, competitors pricing, inventory level, and customer behaviour. This technology helps to enhance transaction efficiency and maximize profit margin by analysing customers' desired price for a product (Kannan & Li 2016, 31). Dynamic pricing features are also capable of adjusting pricing strategies dynamically by analysing customer purchase trends and forecasting seasonal demand.

AI technologies are also used in personalized marketing strategies. AI tool like predictive analytics can segment customers and distribute automated content based on individual preference. These personalized features result in higher customer retention and lower cart abandonment (Chen & Prentice 2024, 8). In many cases, predictive analysis is not only able to predict customer preference but also the optimal timing and strategy to engage with the customers which enhances the relevance and timing of the marketing strategy.

Moreover, AI technologies also influence the post-purchase experience by handling after sales customer support, managing product return and analysing customer feedback (Lemon & Verhoef 2016, 76). These features help the brands to complete the customer journey process and stay engaged with the customer to build a long-term customer relationship (Frambach et al. 2007, 37) AI-based chatbots can understand natural language, identifying user intent and creating appropriate responses that users like most of the cases. By using customer data and previous conversations of the customer, AI can predict the preference of the user and proactively engage with customers (Pappalardo et al. 2024, 16). In this process chatbots create such a highly individualized experience that mimics in-store assistant (Araújo et al. 2022, 253).

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### **2.3 Customer Journey**

Customer journey refers to the complete interaction process that a customer has with a brand, starting from initial product awareness through to post-purchase engagement. It is considered as a multidimensional and non-linear process which is influenced by changing customer expectations, technological advancement and changing customer touchpoints in physical and online retailing platforms (Grewal & Roggeveen 2020, 5). Literature has introduced several conceptual frameworks to define the concept of customer journey by diving this into three, four, or five stages. Figure 3 below shows the different frameworks of customer journey model introduced by different scholars.

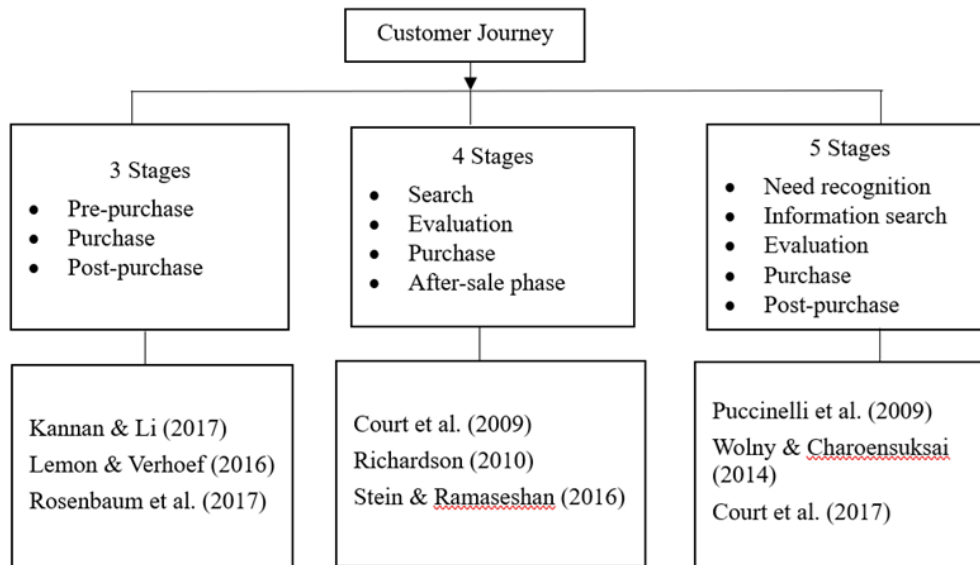


Figure 2: Customer journey framework divided into stages by different scholars.

The three-stage model which is mostly used in modern literature divides the customer journey process into pre-purchase, purchase and post-purchase stage (Lemon & Verhoef 2016, 76). It offers quite a simple but thorough conceptual framework which covers all the interactions and activities between buyers and sellers throughout the customer journey. The pre-purchase stage includes activities like need recognition, searching for available options, gathering information, and evaluation of alternatives (Rosenbaum et al. 2017, 144; Santos & Gonçalves 2021, 10, Grewal & Roggeveen 2020, 2). These activities influence the purchase decision of the buyer. The purchase stage mainly indicates the transaction between the buyer and seller. Factors like transaction support, available payment options and promotional offers influence the customers to go through the act of buying. In the post-purchase stage of the customer journey customer feedback collection, providing after sales service, building re-purchase behaviour and trust takes place. This three-stage model is widely utilized by scholars because of its relevance and effectiveness in both digital and physical retailing settings while remaining easy to apply conceptually.

Another commonly used conceptual framework is four stage model of customer journey. This model divides the customer journey process into search, evaluation, purchase, and post-purchase steps. This model emphasizes cognitive activities that take place before purchasing a product highlighting evaluation of available options which is an outcome of product search (Stein & Ramaseshan 2017, 9). This framework is mostly appropriate to

evaluate the effectiveness of targeted content and real-time personalization in shaping consumer decision making withing digital context (Court et al. 2009, 3).

The five-stage customer journey framework offers a more traditional view which divides the customer journey process into need recognition, information search, evaluation, purchase and post-purchase phases. This framework evaluated from early consumer behaviour theories and served as a foundational concept for marketing and research for decades (court et al. 2017, 3). By emphasizing psychological and behavioural steps which result in purchase decision, this framework examined detailed consumer decision making process. Over time, the framework included multichannel interactions, social media influence and feedback mechanism to provide a more holistic view of customer journey process.

This research adopted the three-stage customer journey framework because of its relevance and appropriateness for analysing the role of AI technologies across customer journey stages in online retailing platforms. The framework provides the opportunity to evaluate the effect of AI technologies in each stage of the customer journey without losing sight of the journey's holistic nature. Moreover, this conceptual framework aligns perfectly with the adopted thematic framework for this research. This thematic framework includes personalization and product discovery, user engagement, trust and transparency themes in pre-purchase stage; transaction efficiency and support themes in purchase stage; and customer engagement and retention themes in the post-purchase stage. These themes are directly connected to the application of AI technologies in different stages of customer journey in online retailing platforms and provide a clear and logical structure for data analysis and discussion.

The three-stage framework also portrays the actual scenario of modern retailing where speed, convenience and smooth transition between product searching, purchase and post-purchase play a crucial role. While four-stage and five-stage framework provide more detailed customer journey overview but sometimes it may complicate the analysis where customer interactions are seamless and driven by automation and personalization (Voorhees et al. 2017, 270). Moreover, recent studies highlight that customers do not follow a conventional linear process in their purchase journey, especially in digital retailing landscape. AI technologies can predict customer needs, shorten evaluation time and facilitate immediate transactions (Kannan & Li 2016, 38). Therefore, the three-stage

model offers a simple yet analytically rich conceptual framework which is most suitable for this research.

## 2.4 Customer Journey in Online Retailing

The evolution of artificial intelligence technology has changed the modern online retailing landscape. AI technologies are emerging as a crucial factor for online retailers who seek to enhance customer experience and achieve sustainable competitive advantage (Rana et al. 2021, 1739). While digital retailers are adopting AI technologies in their business operations on a full scale but academic research on long term effectiveness of these technologies remains relatively limited (Jarvenpaa et al. 2000, 45). Table 1 below summarizes the customer experience of online and offline customers across the customer journey.

Table 1: Comparison of the offline and online customer experience.

	<b>Offline customer experience</b>	<b>Online customer experience</b>
Personal Interaction	Range from moderate to high level	Generally limited
Information availability	Intensity varies. Normally offers less comprehensive information	Information is extensive and easily accessible
Interaction timing	Set by service provider	Controlled by customer. Accessible at any time from any place
Brand representation	Delivered by using tangible materials and in person displays	Delivered through video and audio content

At present time, AI tools cover a wide range of technologies and support assistants which works to improve customer interactions, retail operations, and providing customized retail experience. A major drawback that online retailing platforms were facing for long time was lack of face-to-face communication compared to physical retailing (Hamilton & Price 2019, 189). AI technologies provided solutions for this problem by offering features like AI-driven chatbots, virtual assistant and service chatbot (Rana et al. 2021, 1739). These AI driven features can deliver instant assistant, personalized interaction experience and mimic human interactions which improves the overall customer experience of online retailing (Araújo et al. 2022, 252). These technologies not only facilitate customer experience, but they are also capable of collecting and analysing a large volume of data

which has become a strength for online retail. On the other hand, if we think about the offline retail platforms where data collection is very difficult and analysing a large volume of data is a time-consuming task. Online retail platforms can leverage this big data analysis to customize product recommendation, target marketing and offer customize contents at the optimal time to the right customers (Rose et al. 2012, 316). This high level of personalization results in enhanced customer satisfaction and stronger customer engagement.

Another critical feature that AI-driven technologies are providing for the customers is greater flexibility in shopping habits. In traditional shopping platforms customers are bound to do their shopping activities withing a fixed operating hour. But with the help of AI technologies like recommendation engines, chatbots, customer support agent buyers can communicate with the brands 24/7 without any disruption and purchase products at any time from any location (Araújo et al. 2022, 254). The concept of brand presentation has changed in online retailing platforms compared to traditional brand presentation.

While traditional brand experience mainly depends on tangible and physical elements which require customers presence physically, AI technologies can create dynamic brand experience using audio and visual features (Rose et al. 2012, 309, Grewal et al. 2022, 5). AI tools like augmented reality (AR) and virtual reality (VR) offer a new and interactive way for the customers to experience the product which increases brand perception and loyalty. Lastly, the growing demand for real-time interaction with the customers has positioned AI tools as an essential element for online retailing platforms. Modern customers expect to communicate with the brands without any delay and look for accurate responses for their queries which is only possible by utilizing AI tools like chatbots, customer support agents etc. (Rana et al. 2021, 1741).

#### 2.4.1 Pre-Purchase Stage of Customer Journey in Online Retailing

The pre-purchase stage of customer journey includes all the activities and experiences that a customer encounters before making stepping into the next phase which is purchase decision. This phase is very important in online retailing as it involves activities like initial brand awareness, product discovery, gathering information's about products, evaluation of available options and taking intention to buy (Lemon & Verhoef 2016, 178).

In this stage of customer journey customer mainly gather detailed information's about brand, products, services and other available purchase options. Because of the evaluation of online retail platforms customers can access product information, user reviews, price comparisons and available promotional contents which significantly influence customers product comparison and decision-making process (Chen & Prentice 2024, 9). How easily customers are getting information's about a product and user friendliness on their website plays an influential role in shaping the quality of the pre-purchase experience (Araújo et al. 2022, 253).

Trust and reliability play a crucial role in the pre-purchase stage of online retailing. Because of the intangible nature of digital transactions customers tend to rely on factors like website reliability, third-party endorsement, and user reviews before taking any decision regarding purchase (Jarvenpaa et al. 2000, 46). So, retailers who provide clear and transparent information and provide a secure and reliable transaction platform can minimize perceived risk which results in encouraging customers toward purchase decision (Verhoef et al. 2009, 32).

Smooth and uninterrupted customer engagement is another crucial factor of this stage (Whig et al. 2024, 18). online platforms that offer features like product comparison tools, virtual try-ons, customer testimonials can engage with the customers more influentially and perceive control over the decision-making process (Araújo et al. 2022, 252). Strong engagement with the customer in this stage not only influences purchase decisions it also creates a positive brand image and emotional connections with the retailers (Wang et al. 2023, 8)).

Moreover, the pre-purchase stage is all about convenience and perceived effort that is offered by the retailers. They can play the crucial role of setting customer expectations, building trust, and facilitating informed decisions. Retailers who can create a seamless, trustworthy and engaging experience in this stage of purchase journey can successfully convert browsers into buyers.

#### 2.4.2 Purchase Stage of Customer Journey in Online Retailing

The purchase stage of customer journey is the phase when a customer moves from evaluation to purchase decision, and transaction occurs between buyer and seller. This stage is not only important because of the significance of conversion but also customers'

expectations about ease, speed, reliability and convenience of the transaction process (Araújo et al. 2022, 253; Lemon & Verhoef 2016, 76).

In online platforms customers expect a smooth and hassle-free shopping environment. Online retailers who can provide features like simple navigation, quick page loading and user-friendly checkout process experience high conversion rates (Chen & Prentice 2024, 9). When customers find their preferred payment methods and encounter minimal technical barriers they tend to continue their purchase journey with that brand. On the other hand, complexity in transaction process and unnecessary complications make the customer suspicious which can lead to cart abandonment and reduced customer satisfaction (Araújo et al. 2022, 253).

Customer support also plays a vital role in the purchase stage. Sometimes buyers feel unsure or seek assurance when they are buying an expensive product or purchasing from an unfamiliar retailer. In this case, if the retailer can provide necessary support like live chats, FAQ section, accessible help centre which can answer the last-minute question of the buyer can increase the conversion rate as well. But if the retailer fails to provide this last-minute support, then the customer might deter the purchase process (Baabdullah et al. 2022, 3). Immediate availability of assistant can make shopping experience more trustworthy whereas, unavailability of assistant can create dissatisfaction and cart abandonment.

Security, trust and personalization are influential components of the purchase stage of online retailing. Nowadays, the biggest threat of online retailing is financial scams, weak payment gateway, unclear privacy policy etc. To build trust buyers need to feel that their personal and financial data is secure. Brands can facilitate this trust building process by establishing clear communication of safety measures such as data encryption, secure payment gateway, and privacy policies (Jarvenpaa et al. 2000, 46). At the same time, providing a personalized purchase experience through features like pre-filled purchase form for return customers, tailored delivery option, individualized checkout option can boost the confidence of the customer to complete the process (Behera et al. 2019, 14).

### 2.4.3 Post-Purchase Stage of Customer Journey in Online Retailing

Post-purchase stage of the customer journey is very important because it helps to create a long-term customer relationship through satisfaction, trust, and loyalty. Brands that

maintain active engagement with the customers and provide after-sales support successfully experience higher retention rates. Mainly this phase includes activities like collecting customer feedback, managing return and providing customer support after purchase stage. These activities help to create a positive impression and increase customer satisfaction (Lemon & Verhoef 2016, 81).

Effective post-purchase engagement creates an impression that the brand values their customers even after the transaction has been completed. Retailers can point out the areas of improvement by collecting feedback on customer satisfaction, product quality and service delivery. These activities also give a feeling to the customers that their opinion matters to the retailer (Voorhees et al. 2017, 277). Managing product return effectively is also a crucial factor of the post-purchase stage where customer expectations may vary with the product delivered. Retailers should always remain transparent about the return policy which can eventually foster future purchases. A well-defined return policy and timely resolution of return issues increase the reliability of the brands in the online retailing platforms (Rana et al. 2021, 1752).

After sales customer service during the post-purchase stage is a very important and effective feature for online retailing. Brands that provide prompt support for issues like warranty claims, delivery tracking, or product inquiry can increase customer satisfaction and retention. Providing immediate support for any query or issue can minimize the probability of dissatisfaction (Wang et al. 2023, 4). Additionally, personalized retention strategies like loyalty reward, personalized promotional discounts, exclusive offers based on purchase history can influence repeat purchase (Kaplan & Haenlein 2019, 5). Moreover, the post-purchase stage is not the end of the customer journey rather it is a continuation of relationship-building. Brands that prioritize immediate support and loyalty cultivation at this stage can experience higher customer retention and secure customer satisfaction (Herhausen et al. 2019, 11).

## **2.5 AI Tools in Customer Journey**

Artificial Intelligence (AI), which is one of the latest innovations of modern technology, has become a key component in modern online retail. It proved its effectiveness in improving the customer journey by offering greater personalization, responsiveness, and convenience. Among all the AI tools, recommendation engines and chatbots stand out as two of the most impactful technologies which can influence the whole customer journey

process, from pre-purchase to post-purchase stage. The below section discussed the role played by these two AI tools across the customer journey.

AI and machine learning have transformed the **pre-purchase stage** through their targeted and data driven marketing efforts. Recommendation engines analyse consumer data to predict the needs and preference of the customers. Then they offer personalized product suggestions which assist the customers in need recognition and evaluation of all the available alternatives (Susanuma & Yang 2024, 3). When consumers encounter personalized recommendations, they are more likely to engage with a brand, viewing it as relevant and responsive to their needs (Pappas et al. 2017, 975). In some cases, recommendation engines can find the optimal time for product promotion which can lead to successful product selling.

Chatbots have transformed the concept of customer engagement in the pre-purchase stage by providing personalized, real-time responses to queries and clarifying product specifications. In e-commerce chatbots work as virtual shopping assistants. The main job of these virtual assistants is to help users in finding desired product, navigating complex product layouts and presenting all the available alternatives (Li & Wang 2023, 2). By using data and previous conversations of the customer chatbots can predict the preference of user and proactively engage with customers. In this process chatbots can create such a highly individualized experience that mimics in-store assistant (Nguyen et al. 2023, 2215). These proactive conversations increase customer satisfaction and conversion rates by creating a buying environment where customers feel like they are taken care of (Adamopoulou & Moussiades 2020, 376).

In the **purchase stage**, recommendation engine facilitates the customer journey process by supporting cross-selling and upselling. It can analyse the shopping behaviour of the customer during the session and provide real-time suggestions for related or complementary products (Susanuma & Yang 2024, 3, Lee 2020, 95). The goal of this type of recommendation is not only to increase the order value but also to give confidence to the buyer by suggesting products that align with current selection.

Chatbots play a vital role in the purchase stage by providing various transaction support to the customers. They provide answers to the last-minute queries that customers ask about the product when they checkout. Apart from replying to the queries they also provide information about available shipping options, answering questions about

payment methods and any technical issues which can be a barrier to the checkout process. The presence of chatbots at the time of transaction creates a perception of reliability and responsiveness which results in lower cart abandonment rates (Araújo et al. 2022, 253). Both recommendation engines and chatbots contribute to smoother decision making and greater customer satisfaction in the purchase stage.

The **post-purchase stage** of customer journey is very important for establishing long-term relationship through customer satisfaction and trust. Recommendation engines provide personalized product suggestions in this stage based on purchase history which support the effort like replenishment alert, follow-up deals and loyalty-based promotions (Shum et al. 2018, 23). These customized recommendations not only increase the repeat purchase, but they also strengthen the customer relationship with the brand (Chen & Prentice 2024, 5). Machine learning algorithms of recommendation engines analyse feedback from reviews, product quality, and services to assess satisfaction levels as well as identify common issues (Adam et al. 2020, 434). Brands can then reach out to dissatisfied customers with solutions, turning potentially negative experiences into positive ones.

Chatbots play a crucial role in the post-purchase stage of the customer journey by handling tasks like order tracking, managing return, providing information related warranty, and resolving complaints. As they can provide services instantly at any time whether it is business hours or not, it enhances customer satisfaction (Wang et al. 2023, 4, Li & Wang 2023, 2). Engaging with the chatbots after purchase can influence customers' perceptions of service quality by giving them a feeling that they matter to the brands even after purchase (Nguyen et al. 2023, 2205). Because of emotional intelligence and context aware performance chatbots are becoming an integral element of online retail platforms in present time.

The integration of recommendation engines and chatbots across the purchase journey highlights the impact that AI tools are making in online retailing platforms. These AI technologies create a shopping environment which is highly personalized and efficient in customer engagement. They make sure efficient service delivery at every stage of customer journey from discovery and transaction to post-purchase sale engagement. When these technologies are implemented in the online retailing platforms, they not only

create an effective and adaptive shopping environment but also work to enhance trust, satisfaction and customer retention.

## **2.6 AI Tools on Customer Journey in Online Retailing**

Figure 4 below presents a conceptual framework for this research which is derived from thematic analysis of relevant literature and empirical findings. It outlines the effect and roles played by two AI tools which are recommendation engines and chatbots across three stages of customer journey: pre-purchase, purchase and post-purchase. These three stages further broken down into thematic functions according to the impact of AI tools on customer experience. The framework finally points to a common outcome of all stages of customer journey which is enhanced satisfaction and repeat purchase behaviour.

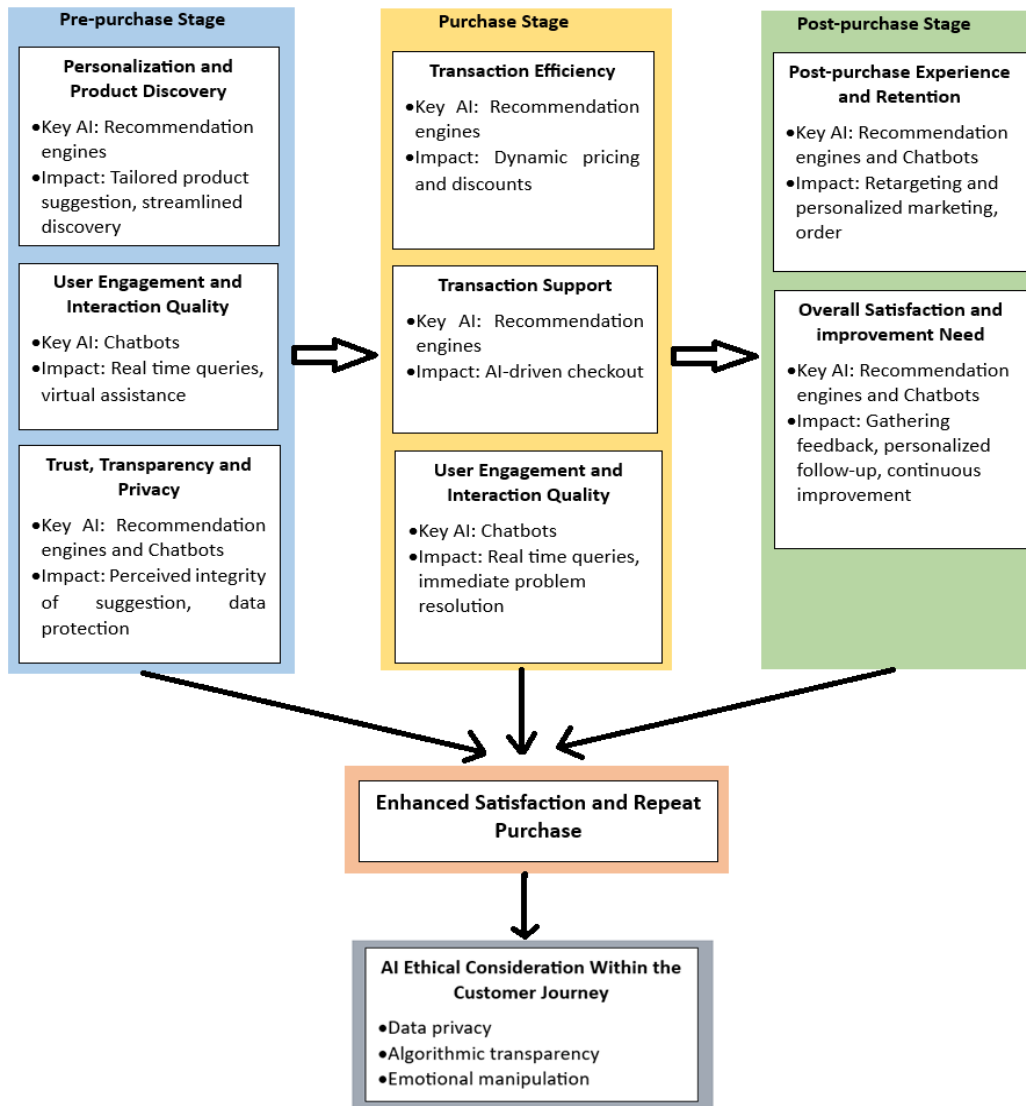


Figure 3: AI tools on customer journey in online retailing.

The developed conceptual framework is discussed briefly in the below section supported by the insights from previous literatures. In the first phase of discussion the role of AI tools in each stage of customer journey is discussed then ethical consideration associated with AI deployment in online retailing platforms is also discussed later.

### 2.6.1 Pre-Purchase Stage

In the pre-purchase stage of customer journey in online retail platforms AI tools play a very crucial role in deciding marketing and product recommendation strategy. Recommendation engines serve as a key driver for personalization and product discovery. This AI tool analyses data from consumers past purchases, preferences and shapes AI tailored product recommendation for each customer which is highly relevant. Because of

the highly personalized product recommendation customers burden to look for appropriate and relevant products become less, and they can take their decision very quickly (Rana et al. 2021, 1747). On the other hand, AI driven chatbots influence the pre-purchase stage by streamlining user engagement and interaction quality. Basically, chatbots work as virtual assistants in online retail platforms. They can handle customer queries instantly, provide detailed product information and create an interactive user engagement (Nguyen et al. 2023, 2203). In some cases, when failing to handle customer query they refer that to human agent for making the product discovery phase effective and relevant. But their ability to use machine learning algorithms also make them able to learn from past interactions and use personalized interaction in every scenario. The ability to simulate human like and data driven interaction makes them an important tool for online retailing platforms (Ranieri et al. 2024, 195).

Moreover, this phase also includes consumers' concerns related to trust, transparency and privacy. The way recommendation engines and chatbots use customers data and preferences to shape the product recommendation and customer engagement creates a concern about their credibility and fairness (Pappas et al. 2017, 981). But if the brands can make sure the protection of customers personal data and ethical use of them it can enhance customer trust toward online retailing platforms (Wang et al. 2023, 10).

### 2.6.2 Purchase Stage

In the purchase stage of customer journey recommendation and chatbots provide services which make the transaction process easier, more efficient and secure. In the transaction process recommendation engines streamline the transaction efficiency by utilizing dynamic pricing strategy and offering bundle product features. Recommendation engines analyse consumer data to figure out preferences and behaviour of the customer then uses these strategies. Determining the desired price which customers are ready to pay for a product is the main task of recommendation engines in this stage (Chen & Prentice 2024, 4). Another key feature of recommendation engines is providing transaction support at the time of purchase. To make the transaction process smooth and hassle-free recommendation engines provide AI-driven checkout system and convenient payment options to customers at the time of transaction. One of the AI-driven checkout features is one click payment which means return customers do not need to fill in the purchase form every time they purchase from the same retailer. This feature saves time and makes the

transaction process smooth for the customer. A lot of customers in online platforms just abandon the product purchase because of the hassle in transaction stage. So proper transaction support in this phase can increase customer satisfaction as well as buyer confidence ultimately encouraging conversion (Rana et al. 2021, 1749).

Chatbots provide services like instant answers to last-minute queries, information related to warranty, shipping options etc. Because of the intangible nature of the shopping experience the customer might have queries related to product quality, size and return policy (Følstad & Brandtzaeg 2017, 40). Chatbots handle these queries and clear out any confusion that might hinder the purchase process. Because of the instant support and clear communication chatbots can reduce difficulties during transaction and lower cart abandonment rates (Baabdullah et al. 2022, 10).

### 2.6.3 Post-Purchase Stage

In the post-purchase stage of customer journey AI tools mainly try to strengthen the long-term customer relationship, enhance brand loyalty, and promote future engagement. Recommendation engines contribute to post-purchase engagement and retention by delivering retargeting advertisements to the existing customers and providing suggestions for complementary products. These types of targeted advertisements help the brands to stay engaged with the customers and encourage repeat purchases (Chen & Prentice 2024, 8). It is a natural human instinct that when a customer buys some product from any brand and finds it up to the mark it creates a positive impression on the customer's mind. Later when he sees any product suggestion from that brand again, he feels comfortable to buy from that brand again without any hesitation and confusion. The role that brands need to play is to attract customers' attention by providing other relevant product recommendations.

Chatbots play the vital role of providing after-sales support to the customers at this stage. This support activity includes tasks like return management, providing delivery related information, collecting feedback etc (Følstad et al. 2018, 152). By collecting feedback from the customers, they can provide solutions to the problems which help the brands to enhance customer satisfaction. It also creates an emotional attachment between brands and buyers which ensured the buyers that their convenience matters even after purchasing the product (Nguyen et al. 2023, 2203, Yanxia et al. 2024, 15)). Moreover, the efficiency and effectiveness of recommendation engines and chatbots evolve through ongoing

customer interactions. As they can learn and adapt from the activities that they perform in present time, so it refines the service delivery and personalization from time to time (Araújo et al. 2022, 267). These adaptive nature of AI tools not only enhance customer satisfaction but also foster long-term customer relationships, trust, and retention.

#### 2.6.4 Ethical Considerations

While AI tools deliver substantial benefits in online retail platforms, their use raises a severe ethical concern for the customers. The most common issues are data privacy, algorithm transparency and emotional manipulation (Murtarelli et al. 2021, 931). Firstly, recommendations engines and chatbots use customer past data, preferences and browsing history to create a personalized shopping environment. Most of the customers prefer this type of personalized shopping environment because of its smooth and hassle-free nature. But it can lead to privacy violations if the brands fail to manage it transparently. In most cases, consumers do not have proper knowledge about to what extent their personal data is tracked and profiled (Baabdullah et al. 2022, 3). So, before using customer data they should be informed that brands might use their personal data for marketing purposes, and they will handle this data in such a way which might not hamper the personal life of the customers.

Secondly, machine learning algorithms are used extensively in customer journeys in online platforms. These machine learning algorithms are very effective in creating a personalized and interactive shopping environment. But sometimes retailers use these algorithms in such a way which might irritate or lose the reliability of the customers. In dynamic pricing it might set the product price in such a way which customers may find irrelevant and discriminatory.

On the other hand, in terms of product recommendation, an excessive marketing strategy might be a reason for irritation among the customers (Pappas et al. 2017, 981). In this type of situation customers may think brands are trying to push selling their products, which will result in customer dissatisfaction. Finally, the ability of AI tools to create human like interactions sometimes mislead the customers in believing that they are interacting with a human, thus manipulating emotional responses and purchase decision (Nguyen et al. 2023, 2204, Pitt et al. 2023, 83). In some cases, chatbots only provide positive information's about the product hiding lack of the product. Which ultimately

creates dissatisfaction after purchase. This type of emotional manipulation can hamper the reputation of business and affect the sales in the long run.

To minimize the risk of AI utilization brands should ensure ethical AI deployment in online platforms (Araújo et al. 2022, 268). They should be careful about data protection, transparent design, and clear disclosure about to which extent they will use customer data and how they are using the data. Maintaining ethical guidance and regulatory compliance might reduce the trust issue among the customers which will enhance the credibility of AI-powered environments.

The chapters above discussed the role played by AI tools-particularly recommendation engines and chatbots on the customer journey in online retailing platforms including pre-purchase, purchase and post-purchase stage. By taking insights from existing literature, this chapter also discussed the practical implications and underlying challenges associated with AI implication in online retailing platforms. To build on these insights, the next chapter outlines the research methodology for this research which will imperially investigate the influence of AI in online retailing context. It outlines a structured approach which includes research design, data collection, data analysis techniques which explored the study objective in a systematic and methodologically sound way.

### **3 Research Methodology**

#### **3.1 Selection of Research Method**

For this study an exploratory qualitative research design was chosen to investigate the effect of AI in the stages of the online customer journey. A qualitative approach was most suited for this research as it allows to understand an in—depth experience and their attributes that customer had when they went through the phases (Merriam & Tisdell 2016, 30). The main goal was to investigate the phenomenon of AI influence on customer journey in a holistic way rather than testing predefined hypothesis. Qualitative research is best suited for such kind of exploratory inquiry when the research topic is relatively new or under-researched (Creswell & Creswell 2018, 69). The main fundamental principal of qualitative research is its exploratory nature which gave the opportunity to hear the experience of the participants and build an understanding based on what is heard (Creswell & Creswell 2018, 80). Similarly, it can be said that this study tried to understand how participants interpret their experience which eventually helped to uncover the phenomenon of the study (Merriam & Tisdell 2016, 29).

By understanding the vast integration of AI technology in online retailing, an exploratory qualitative research technique was the best suited method for evaluating its impact across the customer journey. Because of this method the participants could freely discuss about their experiences with AI in pre-purchase, purchase and post-purchase stage of customer journey which enriched the data regarding how AI shapes each stage of the customer journey.

This research followed deductive thematic analysis method within this qualitative framework. Which means the thematic analysis of data was concept driven rather than purely inductive. The main research question of the thesis was broken down into three predefined sub research questions. Each of these sub research questions is linked with one of the customer journey stages (pre-purchase, purchase and post-purchase). These sub-research questions helped to build the fundamental conceptual framework for the research. They also guided and helped to develop the data collection instruments and later structured the coding process of the data. This approach of using sub-research question to focus on qualitative inquiry helped to narrow the focus of the study and helped to formulate specific items in interviews and surveys (Creswell & Creswell 2018, 223).

In this research, the deductive thematic analysis method was validated by existing relevant conceptual framework which also helped to structure the inquiry. Using a relevant conceptual framework in the process of qualitative analysis is considered as a recognized methodological choice when it fits the research purpose (Braun & Clarke 2006, 81). Deductive reasoning also used here by using prior construct to guide data collection and data analysis. The customer journey model worked here as an organizing scheme or set of “sensitizing concepts” which designed how data is gathered and interpreted. This method also gave the opportunity to discover new insights within each stage of the customer journey which was examined through clear theoretical lens. For balancing exploration with structure this research used existing model to focus the analysis and included open ended question like how AI affects each stage in both survey and focus group discussion.

By conducting analysis in each stage of the customer journey this research ensured that the findings for each sub question could be compared to the expected journey framework. Because of this analysis technique the findings can be considered because of more focused analysis of specific aspect of data which can be noted as hallmark of analyst-driven thematic analysis. In other words, it can be said that this research started with a predefined structure and looked for evidence within the data that represent each component of that structure rather than letting the research question emerge from the data. This specific type of research technique is known as “top-down” approach to theme development, where the study starts with predefined concepts and then examines how the data reflects those concepts (Creswell & Creswell 2018, 88).

### **3.2 Operationalization Table**

An operationalization table was developed to ensure consistency in the process of data collection. The table was used to align the data collection process with the research questions, sub questions and coding themes. In this research, operationalization table served as a visual framework to map out the research objectives across the three stages of the customer journey with the relevant themes and specific AI technologies used. This process makes sure that elements of research design are connected with the central research objective, ensuring the collection of data remains relevant. The table 2 below provided a clear overview of purpose for each stage, key themes to be discussed and specific AI tools used to capture related data.

Table 2: Operationalization table.

Research Questions	Sub-Research Questions	Themes to Discuss	AI Tools
How does the use of AI affect or shape the different stages of the customer journey?	How does the use of AI shape the pre-purchase stage in customer journey?	Personalization and product discovery	Recommendation engines
		User engagement & interaction quality	Chatbots
		Trust, transparency & privacy	Recommendation engines and Chatbots
	How does the use of AI shape the purchase stage in customer journey?	Transaction efficiency	Recommendation engines
		Transaction support	Recommendation engines
		User engagement & interaction quality	Chatbots
	How does the use of AI shape the post-purchase stage in customer journey?	Post-purchase experience and retention	Recommendation engines and Chatbots
		Overall satisfaction and improvement need	Recommendation engines and Chatbots

In the pre-purchase stage, themes like engagement, personalisation and trust were examined using the recommendation engine and the chatbots. The purchase stage focused on user engagement, transaction efficiency and support through the recommendation engine and the chatbots. The post purchase stage investigated customer retention and satisfaction utilising both AI tools to provide complementary insights. This systematic method ensures that all of questions are addressed appropriately which enhances trustworthiness of the research.

### 3.3 Data Collection

The study used a sequential approach, combining an online survey and a focus group discussion to understand the customers' perceptions and experiences of Artificial Intelligence (AI) in the online retail platforms. The primary research objective was to understand the customers' attitude towards AI in various stages of customer journey in online retail. The online survey was conducted to gather quantitative insights to find out general consumer trends and attitudes among the customers. A focus group discussion was also conducted to gather more deep insights related to the topic which is not possible to gather through online survey. The combination of these method ensured the data

triangulation of the study which enhanced the validity and acceptance of the research finding.

### 3.3.1 Online Survey

An online survey was conducted at the early stage of data collection. It can give the opportunity to collect data from large participants. Data collection through survey is a very convenient method to reach participants from different geographical and cultural background (Creswell & Creswell 2018, 224). The survey was conducted with 52 respondents who are regular users of online shopping platforms, ensuring the participants have familiarity about the context of this research. To maintain data consistency and data reliability, the study restricted the sample between the age group 26 to 32 years because this age group is known for substantial engagement in digital shopping. In the appendix 1 survey questionnaire which was used to collect survey data is attached.

To choose the participants for the survey convenience sampling technique had been used as it was a simple way of recruiting those who engage with AI based features in online shopping (Bryman 2016, 10; Saunders 2023, 293). The participants were approached through online social media platforms like Facebook, WhatsApp and Messenger. The participants were from various nationalities: Bangladesh, India, Pakistan, Nepal, Iran, Ghana, Mexico, Malaysia and Singapore. Therefore, this research had a broad geographical coverage, and it enhanced external validity of the findings by gathering varied consumer insights towards AI across the world (Patton 2002, 15).

The survey process was carried out using Webropol platform where it gives more advanced features for data collection and management. Prior to the participation the respondents of the research received an information sheet detailing the research aim and objectives, the voluntary nature of the study and the measures of confidentiality (Creswell & Creswell 2018, 376). Such ethical assurance give confidence to the participants which contributed to the achievement of high-quality data. In appendix 4 detailed data management plan for this study is attached.

The survey involved mostly closed-ended questions which secures general insights of the customers towards the application of AI in different stages of customer journey. A few open-ended questions were used to collect more qualitative data to enrich the dataset (Bryman 2016, 11). 52 valid responses were collected in the survey and the results

showed a comprehensive perception of AI application in both pre purchase, purchase and post purchase stages of online shopping.

### 3.3.2 Focus Group Discussion

To gather in-depth qualitative insights regarding the consumers' perspective a focus group discussion was conducted. The objective of focus group discussion was to explore subtle customer insights that cannot be obtained by survey method. As focus group discussions involved direct interaction between participants, it can yield richer data in less time than other methods (Braun & Clarke 2006, 85). In the appendix 2 focus group discussion guided is included.

The focus group consisted of four individuals who have already used an AI-driven online retail platform. For this data collection method purposive sampling was used. Purposive sampling made sure that the participants had prior knowledge about AI in online retail platforms. Participants were selected from a culturally homogeneous subgroup included individuals from Bangladesh, Nepal, Pakistan and India. All of them were aged between 26 to 30. These participants did not participate in the online survey. They were selected through personal network and use the online retail platform frequently. Because of the personal connection their online shopping habit was know which made them appropriate for the focus group discussion. Two of the participants were master's student and two of them are PhD student. Their study background is also different. The discussion was conducted in English in Turku, Finland on 15th February 2025. Pseudonyms were assigned to ensure anonymity of the participants. Table 3 below gave an overview of the focus group participants.

Table 3: Overview of focus group participants.

<b>Pseudonym</b>	<b>Age</b>	<b>Nationality</b>	<b>Profession</b>
Pavan	27	India	PhD student
Anjan	29	Nepal	Master's student
Monsur	30	Pakistan	Master's student
Ishtyak	26	Bangladesh	PhD student

The focus group session lasted for 75 minutes. After briefing the participants on the aims of the study, the confidentiality measures and ethical guidelines, the session started. The session was audio recorded and later transcribed verbatim to ensure data accuracy and facilitate qualitative data analysis (Bryman 2016, 12). An informed consent form was

provided to the participants to make the data collection and data utilization more transparent. In the appendix 3 informed consent form which was used for this study is attached. Concerning customer journey stages and current AI literature, this research used a semi structured discussion format.

- Pre Purchase Stage: Personalization & Product Discovery, User Engagement & Interaction Quality, trust, Transparency & Privacy.
- Purchase Stage: Transaction efficiency, Transaction Support.
- Post Purchase Stage: Post Purchase Experience & Retention, Overall Satisfaction & Improvement Needs.

Some follow-up and probing questions were asked along with the structured questions to encourage the participants to share their personal experiences. This approach enriched the collected qualitative data and allowed the study to extract detailed consumer behaviour. It also enabled the study to collect customer's attitudes towards AI-driven online shopping platforms. The interactive, in person nature of focus group facilitated dynamic discussion and thorough clarification of idea among participants. This enhanced data quality which supported deeper understanding of consumer behaviour regarding AI use across different stages of online retail customer journey.

### 3.3.3 Confidentiality and Ethics

This study followed a transparent ethical standard to make sure that the participants right, autonomy, and privacy remain protected. As the data collected through an online survey and focus group discussion, prior to involving in any of the method participants got informed consent form, data management plan, and briefing about how their identity will remain anonymous throughout the data analysis stages. These ethical guidelines were established by following academic practices (Marshall & Rossman 2011, 45) and supported by the University of Turku's research ethics guidelines.

Before participating in the survey or focus group participants got enough information's about the purpose of the research, how their data will be collected and used, and their right to withdraw at any point if they feel necessary. They also got a briefing about the objective of the study and received privacy notice and informed consent form. Consent was collected electronically for the survey participants and in writing for focus group

participants. Participants were given clear instruction that their data will be used anonymously, and it will be stored and used confidentially. To protect the identity of the focus group participants pseudonyms were used. The data management plan (DMP Tuuli) made sure that only the researcher will have access to the data, and it used for academic purpose only. In the data collection process only, relevant data was collected which can be used to analyse the research questions.

Additionally, the research used several AI tools such as Temi, NVivo, ChatGPT, Grammarly, Quillbot. AI tool Temi was used to transcript the focus group discussion which was audio recorded. This tool made the transcript process easy and smooth. Qualitative data analysis tool NVivo was used in this study for thematic coding analysis. Other than these two tools ChatGPT, Quillbot, and Grammarly was used for the purpose of language enhancement, paraphrasing, and comprehending critical concepts in the preparation of this study. Further use of AI tools and AI prompts is included in the appendix 5.

### **3.4 Data Analysis**

Qualitative data analysis methods were used in this study to address the research objective. Descriptive quantitative analysis was conducted on the quantitative survey data of customer responses. It explored general pattern in customer attitude towards AI implementation at various stages of the online customer journey. Thematic coding techniques were used to analyse qualitative data collected from the focus group interviews. Thematic coding explored the detailed insights about what participant's perspectives and experiences were.

This method not only helped to get more nuanced understanding of research problem but also solidified the validity of the study through methodological triangulation (Denzin & Lincoln 2018, 35; Flick 2014, 43). By conducting the analysis with transparency and methodological consistency the research guided the study by best practices in qualitative research tradition (Braun & Clarke 2006, 84; Merriam & Tisdell 2016, 16). The NVivo software was used for organisation and credibility of qualitative analysis, while data interpretation was relevant to the research questions and conceptual framework (Creswell and Creswell 2018, 383).

### 3.4.1 Analysis of Survey Data

The data collected by online survey was analysed by sequential mixed-methods approach entailing a combination of descriptive quantitative analysis and qualitative deductive thematic analysis. The approach was selected to analyse the survey data which primarily consists of close-ended questions to extract broad patterns in the customer attitude. It was complemented by open-ended questions to get deeper qualitative understanding. The objective was to explore the impact of AI application across different stages of customer journey in online retail.

Quantitative data was analysed by using descriptive statistical techniques. To summarise consumer perceptions of AI integration at various stages of customer journey, frequency and percentage analysis were conducted for each of close-ended questions. The responses were categorized into positive, negative and neutral. This analytical method was deemed appropriate for this research due to its clarity in presenting trends and its accessibility to identify prevalent viewpoint. By exploring dominant patterns, the research could identify customer attitude AI functions such as product recommendations, interactions, customer support, transaction support.

Parallely, qualitative data collected from the open-ended questions were analysed thematically. The analysis was structured by the predefined themes that reflect three customer journey stages, aligning with the conceptual frameworks of the study. The process starts with data familiarisation where responses were read multiple times to ensure a thorough understanding of the data. After this, NVivo software was used for systematic coding. Data were mapped to the respective themes of pre-purchase, purchase and post-purchase stages. The application of NVivo software enhanced the consistency and validity of the analysis by systematic coding and allowing thematic exploration (Jones 2014, 195). Themes were refined to achieve internal consistency and representational accuracy. It ensured that the themes reflect the perception of the participants on AI driven interactions during their online retail journey.

The last part of the analysis included integrated quantitative and qualitative results into a holistic interpretation of the data. Descriptive statistics complemented the thematic insights to validate qualitative findings through observed numeric trends (Creswell & Creswell 2018, 84). The integration of these methods allows the researcher to go beyond the surface level pattern and delve into the consumers' underlying attitudes and

experiences. Therefore, the mixed methods analysis offered a more enriched and comprehensive analysis of how AI affects customers' perceptions across customer journey stages.

### 3.4.2 Analysis of Focus Group Discussion

Focus group discussion data was analysed using rigorous multistage qualitative method to gain participants' perspectives on the impact of artificial intelligence (AI) across the online retail customer journey. The process included four stages such as collecting in person data collection and recording, transcription and the cleaning of data, coding through NVivo software, and the thematic interpretation. All steps were performed to preserve the authenticity of the participation input and its feasibility of systematic analysis. The data was coded in NVivo as in Figure 5 below.

Name	Files	References	Created on	Created by	Modified on	Modified by
○ The effect of AI on customer journey in online retailing	54	464	10/03/2025 1.15	MHP	10/03/2025 1.15	MHP
○ Purchase stage	52	125	10/03/2025 1.18	MHP	10/03/2025 1.18	MHP
○ User engagement and interaction quality	26	26	10/03/2025 1.18	MHP	10/03/2025 1.18	MHP
○ Transaction Support	47	47	11/03/2025 2.33	MHP	11/03/2025 2.33	MHP
○ Transaction efficiency	52	52	10/03/2025 1.18	MHP	11/03/2025 2.33	MHP
○ Pre-purchase stage	53	142	10/03/2025 1.16	MHP	10/03/2025 1.16	MHP
○ User engagement and interaction quality	42	42	10/03/2025 1.17	MHP	10/03/2025 1.17	MHP
○ Trust, transparency and privacy	52	53	10/03/2025 1.17	MHP	10/03/2025 1.17	MHP
○ Personalization and product discovery	47	47	10/03/2025 1.17	MHP	10/03/2025 1.17	MHP
○ Post-purchase stage	53	197	10/03/2025 1.19	MHP	10/03/2025 1.19	MHP
○ Post-purchase experience and retention	51	78	10/03/2025 1.20	MHP	10/03/2025 1.20	MHP
○ Overall satisfaction	52	52	10/03/2025 1.21	MHP	14/03/2025 4.41	MHP
○ Improvement need	1	67	14/03/2025 4.42	MHP	14/03/2025 5.12	MHP

Figure 4: Qualitative data analysis using NVivo coding.

The focus group discussion was conducted in a face-to-face setting. In-person format provided an environment for spontaneous interactions and encouraged participants to share their experiences and opinions which is often limited in remote and text-based formats (Denzin & Lincoln 2018, 618). With participants' informed consent the entire session was audio recorded so that each contribution could be captured in detail. Speaker identification and timestamps were maintained through a recording to reference accurately in later analysis stages. This structured documentation was essential to preserve conversational context to detect overlapping speech, or to distinguish among speakers during the group interactions.

Transcription of the audio recording was carried out by using Temi, an AI-based transcription tool, which is known for its efficiency and speed. While these AI transcription tool reduced a lot of the manual work which is required to produce transcripts, their accuracy vary from accent to accent, rate of speech, background noise, and more from technical terminology. Therefore, a rigorous manual validation process was conducted to overcome these limitations. The transcript file cross checked and corrected the by listening the recording several times ensuring that it captured not only the words, but also the tone, emphasis and conversational flow. The iterative listening was especially important to this process of ensuring fidelity with intended meaning especially in those cases where subtle linguistic cues or hesitation signifies underlying concerns or emotions.

When the accuracy of the transcript was confirmed then it went through a cleaning process to remove non-verbal fillers and expression such as ‘umm’, ‘uh’, ‘mmm’, ‘yeah’, ‘and others non substantive utterances. However, these elements are natural in speech, but they create qualitative data clutter that obscures the themes during analysing the data (Jones 2014, 194). The data was carefully cleaned to eliminate the meaningful pauses or vocal nuances that could be associated with interpretative depth. The transcript was clear, concise and focused on substantive content making it ready for the next stage of analysis.

The refined transcript was then imported into NVivo, a qualitative analysis software, to conduct the qualitative analysis as it can manage, code and retrieve qualitative data. The use of NVivo allowed structured and transparent analysis process to enhance overall reliability and reproducibility of the findings. Deductive thematic analysis was used guided by predefined categories of the analytical framework and research questions. This allowed the analysis to focus on the core areas of interest while still providing room for the unexpected insights.

Coding process was started with a thorough re-reading of the transcript to remain familiar with the contents. This step essentially made sure that context was preserved and nuances were not overlooked. On NVivo, data segments were systematically assigned to the thematic nodes that described various dimensions of the online customer journey. In several rounds, the researcher iteratively refined the dataset to ensure accuracy, conceptuality, coherence and consistency (Jones 2014, 194). During this process,

reflective memos and annotations were maintained to document analytical decisions enhancing transparency and authenticity of analysis.

The chosen approach was methodologically sound substantially rich integrating technological tools with consistent manual procedures and theory-based coding strategy. The analysis was able to keep participant's voice authentic and categorise the data into predefined categories to understand the consumer attitude, perspectives and concern of AI application in the online retail.

### **3.5 Evaluation of the Study**

According to Lincoln and Guba's (1985, 289) framework the trustworthiness of this study was evaluated in four criteria which are credibility, transferability, dependability, and confirmability. To establish credibility in this study, triangulation of survey response and focus group discussions was used to understand customers' view on AI in online retail. The internal validity, however, increased because this method could prove and compare the results from different sources (Bryman 2016, 12). Repeatedly listening to the focus group recordings and manually correcting the AI generated transcripts allowed the study to identify respondents' tone, emphasis and contextual nuances (Lincoln & Guba 1985, 290).

Thick descriptions of the study context, the characteristics of the participants, and the technologies described provided transferability. Interpretation was grounded to specific data excerpts and the research context, allowing others to assess its relevance in other similar contexts (Tuomi & Sarajärvi 2018, 86; Collis & Hussey, 2021, 128). This process did not make the research statistically generalized rather it offered contextual depth and analytical transferability to similar settings.

Dependability refers to the consistency of the research process over time. From the qualitative research perspective dependability means reliability which emphasises that the research is logical, traceable and documented well. To ensure dependability this study employed application of the transparent account of the research design, the data collection methods, the analysis steps and the decision-making process in the study (Bryman 2016, 13). Structured and traceable coding with the use of NVivo software was also another factor that contributed to procedural dependability. Change in the themes or categories during analysis were documented and reflective memos were kept justifying analytical

decisions. The path of the inquiry is logically driven by the approach, making the process of the methodological process more stable and rigorous (Collis & Hussey 2021, 8).

The confirmability is the degree to which the findings are affected by the researcher's bias and personal interpretations. The use of reflexivity and documentation confirmed the confirmability of this study. The research maintained a reflexive stance throughout the research process, consciously recognising potential preconceptions and their impact on data interpretation (Lincoln & Guba 1985, 293). Further, the data were organised and stored so that they could be reviewed by external entities. Conclusions were taken from the data by using participant quotes and clear relationship between raw data and interpreted themes. The study blended AI transcription tools and manual review with a good coding process in NVivo, thereby making the results more transparent and neutral (Tuomi & Sarajärvi 2018, 86).

According to the chosen research design, data collection, data analysis methods that was discussed in this chapter, the next chapter discussed and presented the key findings of this research. These findings were derived from the analysis of survey data and focus group discussion data. The chapter is organised into three main categories which is three stage of customer journey: pre-purchase, purchase, and post-purchase. Drawing from qualitative insights from both survey data and focus group discussion it outlined how AI tools influence customer experience across the customer journey in online retail.

## 4 Findings

This chapter presented the findings of the study on the role of artificial intelligence (AI) on customer journey in online retailing platforms. The discussion was structured and divided into three main stages of customer journey including pre-purchase, purchase, and post-purchase stage with having discussion of related themes of each chapter based on the conceptual framework developed in literature and data analysis chapter. The discussion of the findings included insights from both survey data and focus group discussion under each theme rather than separating the discussion by data source. This strategy enabled a more holistic and effective exploration of how AI tools-recommendation engines and chatbots mediate customer experiences and behaviours in each stage of the customer journey in online retailing. That chapter not only focused on the aspects of what the experience of the customers was, it also focused on a recurring pattern identified across different data sources which gave the opportunity to examine the analysis more deeply. Themes related to each stage mainly focused on the functionality and impact of AI tools which were experienced by the customers.

### 4.1 Role of AI in Pre-Purchase Stage

The discussion developed in this section by addressing the first sub-research question: **“How does the use of AI shape the pre-purchase stage in customer journey?”** It investigated the role played by AI tools particularly recommendation engines and chatbots in influencing customer behaviour and decision making in the early stage of the customer journey. The pre-purchase stage is divided into three themes including personalization and product discovery, user engagement and interaction quality, and trust, transparency, and privacy. These themes were analysed based on the data collected. These themes explored the influence of AI tools in the initial stage of customer journey when customers mainly gather information, look for alternatives and evaluate the available options. By analysing the closed end survey data table 3 below presents the responses of the participants regarding their pre-purchase shopping experience in online retailing platforms.

Table 4: Summary of survey data analysis of pre-purchase stage.

	<b>Question</b>	<b>Positive (%)</b>	<b>Neutral (%)</b>	<b>Negative (%)</b>
1	Product recommendation	92.3	0.0	7.7
2	Recommendation quality	25.0	72.9	2.1
3	Used Chatbots	55.8	0.0	44.2
4	Interaction Quality	34.6	59.6	5.8
5	Reliability of the recommendation	50.0	0.0	50.0
6	Data collection perception	13.5	44.2	42.3

The table summarizes the key responses related to each theme within the pre-purchase stage of the customer journey. The overview of the findings is presented in the table, but it is discussed more briefly in the following sub-sections.

#### 4.1.1 Personalization and Product Discovery

The first theme of pre-purchase stage of customer journey in online retailing is personalization and product discovery. This theme discussed the role of AI generated recommendation in need recognition and product discovery phase. By tailoring product recommendation according to the customers preference AI tools facilitate customer decision making process. According to the survey data, a significant majority of people (92.3%) mentioned they have encountered AI tailored product recommendation or marketing while they were using online retailing platforms. While only 25.0% of respondents found those product recommendations relevant and matching their preference but a major portion of respondents (72.9%) reported a neutral stance regarding those recommendations. That means a large portion of shoppers acknowledged the effort of AI tools in facilitating the customer journey, but their effort is not up to the mark all the time. On the other hand, (2.1%) respondents found these recommendations irrelevant that highlights the necessity of more research and development for these tools.

AI driven tools facilitate the pre-purchase stage of customer journey in online retailing platforms by making product discovery easier, faster and more relevant. Because of the personalized product recommendation customers can find their desired products more easily and gather information about those products. But from the open-ended survey data and focus group discussion it was evident that customers not only prefer tailored product recommendation they also expect the recommendation to be more context aware and according to their preferences.

In the survey several respondents expressed their desire for AI tools to provide relevant product recommendations and explain the logic behind recommending a product. Recommendation engines normally use past purchase data and stated preference by the customer to tailor the product recommendation. If it can explain how the recommended product aligns with customer preference, then it can reduce the cognitive load and enhance transparency. One survey respondent stated this desire directly by saying *“provide more context for recommendations,”* suggesting that it could be more helpful in the decision-making process if it clarified *“why it’s suggesting a product.”* This clearly indicates that nowadays customers not only prefer tailored product recommendations but also seek the logic behind getting those recommendations which support their confidence while taking any decision.

Focus group participants also shared their experiences which echoed the same importance and convenience of personalized recommendation in pre-purchase stage. Pavan shared his experience of getting help from personalized product recommendation by stating that, *“some product recommendations are trustworthy. They suggest good products, and many people review them positively.”* While participants were appreciating the effectiveness of tailored recommendations some respondents raised the concern that AI tools might serve retailers’ interest more than serving customer’s need. As an example, Ishtyak found these recommendations unnecessary and stated that *“they’re mainly pushing sales, particularly stock clearance items.”*

In discussion of the participants, they desired predictive recommendations that are not served by the AI tools in online platforms. They anticipate that AI should analyze the purchase pattern and anticipate the need of the customer. Which means customers expect repurchase reminders from the brands for the products that they use frequently. One survey participant stated this issue by saying AI should *“improve its ability to predict what I need before I even search for it.”* This expectation from AI clearly makes them shopping assistants for daily life rather than confining them to the role of product marketing.

However, participants showed their concern about the effectiveness of AI tools is confined within certain product category. Some participants stated that AI tailored recommendations work perfectly fine for certain types of product category like shoes, electronic items, home appliances items. But they are not effective in recommending

products like clothes as it is difficult to match product quality, size, material preference. Monsur sated this issue in the focus group discussion by saying, *“buying clothes online is challenging, and I’m not always sure if AI recommendation matches my needs.”* These insights indicate that product personalization is one of the most important factors that shape the pre-purchase experience of the customers. As Susanuma and Yang (2024, 3) suggested that, using advanced algorithms is not enough to make the product recommendation successful. Brands need to understand the expectations and preferences of the customers and tailor their product recommendations according to the needs of the customers.

#### 4.1.2 User Engagement and Interaction Quality

The second theme of the pre-purchase stage is user engagement and interaction quality. This theme explored the effectiveness of chatbots in customer engagement during the product discovery phase. According to the survey data, around (55.8%) respondents reported that they had used AI driven chatbots for product search and getting product information. Among these users, (34.6%) respondents gave positive feedback about these chatbots which means their interaction was satisfactory and convenient. On the other hand, a large portion of participants (59.6%) stated that their experience with chatbots was neutral, which means the performance of AI driven tools was not consistent. However, (5.8%) respondents had frustrating experience with AI tools while they looked for any product or information. Though majority of respondents acknowledged the influence of AI-driven chatbots positively but still there is room for improvement for these AI tools which can create engaging and satisfactory interactions with the customers.

By analysing open ended survey data and focus group discussion data this theme explored the quality of interaction provided by AI chatbots in the early stage of customer journey when customers search for product and information. The analysis revealed a visible gap between the users’ expectations and performance of current chatbots. In survey responses some participants mentioned that, though the responses of chatbots were quick and easy to access but sometimes their interaction felt like rigid and scripted in nature. Sometimes, they felt that chatbots can handle most common queries or provide basic information instantly but their capability to handle complex issues is still limited. One survey participant directly addressed this issue by stating that *“current chatbots cannot handle complex issues,”* and as a result, *“I end up waiting for a human agent.”* This issue clearly

indicates that AI chatbots can provide instant support, but their knowledge depth and capabilities are still limited. Another respondent echoed this issue by stating “*sometimes chatbots could not answer all the queries.*” That means chatbots have limited adaptability which is very crucial to facilitate satisfactory interaction with the customers. They can provide immediate support when queries are raised within predefined context but if the question deviates from that context, then chatbots fail to facilitate the interaction.

Focus group participants shared mixed feelings regarding their interactions with chatbots in product discovery phase. While some of them acknowledged that they did not use chatbots for shopping purposes, they use AI tools like ChatGPT for educational and knowledge gathering purposes. Which indicates that utilization of AI driven chatbots in online shopping platforms is still limited compared to its effect in educational purpose. Participants who used chatbots in the shopping platforms also reported that rather than feeling conversational the interactions felt more like as transactional. Anjan shared his experience by stating that, “*I do not trust chatbots. They feel too computerized, robotic, and have limited understanding of my questions.*” This type of negative experience not only affects customer interaction but also creates trust issue because of chatbot’s limited capability to handle customer queries. But it also reflects that customers are open to embrace the changes in online retail, but brands must make sure an improved interaction platform. Customer’s openness towards new featured of online retail platform was indicated by one participant’s statement which was “*I tried chatbots few days ago, but it didn’t work well.*”

These findings indicate that the success of integrating chatbots in online retail platforms is hindered by lack of ability to create a context aware and emotionally attached conversations. Consumers prefer a conversation that feels natural, less scripted and more likely humanized. Even if the chatbots perform technically well sometimes they might fail to create an emotional attachment with the customer because of the lack of natural conversation patterns (Shumanov & Johnson 2021, 5).

#### 4.1.3 Trust, Transparency and Privacy

The third theme of pre-purchase stage of customer journey in online retailing is trust, transparency and privacy. This theme analyses the psychological factors like how customers see the AI-generated product recommendations and their concern related to data privacy. From the survey, it appeared that exactly (50%) of the participants

considered AI generated recommendations as trustworthy whereas the other (50%) participants preferred human suggestions. It revealed that there are still certain gaps which should be filled to improve the trustworthiness of the AI tailored product recommendations. In the case of privacy, only (13.5%) respondents viewed utilization of customers personal data for product the purpose of product recommendations positively. Whereas (44.2%) respondents preferred data driven product recommendations but if the utilization of data is secure and transparent. On the other hand, (42.3%) respondents showed their concern regarding the use of personal data for marketing and product recommendation purposes.

Factors like trust, transparency and privacy contribute to establishing the sense in consumers' minds that brands are operating their business ethically and respectfully by integrating AI tools into their platforms. Whereas customers accept AI driven product recommendations and chatbot support positively when they feel these services are trustworthy and transparent. Several participants expressed their concern related to data privacy and showed discomfort regarding the issue that their personal data is used without their proper consent. One participant clearly stated, "*not to collect personal information*" which showed how sensitive personal data is in building trust. Another participant emphasized on utilizing customer data more securely and carefully by stating "*I would love if my personal data were secure even after analysed by AI.*" These concerns are evident that consumers prefer tailored recommendation, but they do not want to compromise the privacy of their personal information.

Apart from having serious data concern participants also showed their discomfort regarding the aggressive and pushy strategy followed by AI tools. They think that AI tools are more likely to serve the interest of the retailers rather than serving the needs of the participants. These types of aggressive roles played by the AI tools can create dissatisfaction and lack of acceptance. Ishtyak directly stated this issue by saying "*AI can be persuasive and irritating, so this aggressive approach should be changed.*" Such feedback clearly reveals the expectations of the customers, which is they prefer recommendation engines and chatbot as a customer centric support assistant rather than serving a retailer centric sales agent.

Participants also acknowledged the fact that the effectiveness of AI tools deeply relies on the analysis of collected data and purchase behaviour. Because of this data driven

personalization product recommendations and interactions are more accurate and effective. But their data collection strategy is not transparent and open. Sometimes, they use a covert data collection strategy by surveilling the customer secretly. Pavan raised this issue and stated that AI “*secretly listens even without explicit consent*” which creates a bad impression for AI tools and reduces the acceptances of their features. To increase the credibility and acceptance of AI tools they should communicate clearly and utilize an ethical design which can foster transparent interaction (Wang et al. 2023, 8).

#### 4.2 Role of AI in Purchase Stage

This section of the finding discussed the second sub-research question: “**How does the use of AI shape the purchase stage in customer journey?**” Depending on the role played by AI tools in enhancing or complicating the transaction process, the purchase stage of the customer journey was divided into three themes: transaction efficiency, transaction support, and user engagement and interaction quality. The goal of these themes is to facilitate the transaction process by providing a smooth and secure transaction platform. They also provide virtual assistance to resolve any queries that can arise at the time of transaction. The discussion of the findings in this stage includes analysis of survey data and focus group discussion which customers experienced in the purchase stage. Table 4 below summarizes the close end survey data of customers interaction with AI tools in purchase stage.

Table 5: Summary of survey data analysis of pre-purchase stage.

	<b>Question</b>	<b>Positive (%)</b>	<b>Neutral (%)</b>	<b>Negative (%)</b>
1	Experienced dynamic pricing	80.8	0.0	19.2
2	Perception of dynamic pricing	21.1	38.5	40.4
3	Noticed AI-based checkout	78.8	0.0	21.2
4	Perception of AI-based checkout	69.2	25.0	5.8
5	Used AI chatbots during purchase	40.4	0.0	59.6
6	Chatbot effectiveness	56.8	0.0	43.2

The table summarizes the key responses related to each theme within the purchase stage of the customer journey. The overview of the findings is presented in the table, but it is discussed more briefly in the following sub-sections.

#### 4.2.1 Transaction Efficiency

The first theme of purchase stage of customer journey is transaction efficiency. This theme discussed the role played by AI-based recommendation engines in dynamic pricing, discount management at the time of product purchase. According to the closed end survey data, (80.8%) respondents reported experiencing AI-based dynamic pricing at the time of purchasing product from online retail platform. This high percentage value indicates that dynamic pricing strategy is one of the most highly implemented features of AI tools in online retail. Among this high number of respondents, around (21.1%) respondents viewed this pricing strategy positively and considered that it provides competitive prices.

On the contrary, around (40.4%) respondents viewed this pricing strategy negatively and thought it offered manipulative and unfair product prices by analysing customer purchasing behaviour. Moreover, (38.5%) respondents shared a neutral view on this strategy which means this strategy does not affect their purchase decision. These results are evident that though the customers accepted the presence of AI-driven pricing mechanism in online retail platforms, they expect fair and justified product price from the retailers.

Open ended survey data and focus group discussion also revealed customer's encounter with dynamic pricing mechanism in their purchase journey. Though these AI tools are integrated into the retail platform to increase the efficiency of the transaction, customers raised serious concerns about their pricing strategy. Most of the participants reported that they have experienced change in product price because of the browsing history and purchasing behaviour. One participant showed his frustration by warning, "*Do not utilize dynamic price changes. It wastes clients time and effort,*" which clearly indicates that customer view this pricing strategy as manipulative. Similarly, Pavan who was a focus group participant shared his experience by stating, "*I experienced it while booking flight tickets. Frequent searches seemed to increase the price due to perceived demand.*" These user experiences are evident that if the pricing mechanism is not transparent than AI-driven dynamic pricing can create dissatisfaction among the customers.

Respondents also acknowledged the capability of AI tools to make the transaction process easy and comfortable. They also suggested that AI should be able to add some features like adding promotional discounts and loyalty bonus at the time of transaction. One survey respondent addressed this issue by stating “*automatically add all discounts available to the checkout.*” This additional feature can facilitate the decision-making process. Respondents also reported of getting benefit from dynamic pricing strategy, though they were not sure if it occurred because of time dealing the product purchase or AI pricing mechanism. Ishtyak shared his experience that he checked out a shoe worth 130 euro but when he went back again to complete the transaction, he paid 70 euro for that shoe. His statement was “*I’m unsure if this was AI-driven or merely supply-demand fluctuations.*” It shows that customers understand something is controlling the pricing mechanism whether they might not be fully aware of the influence of AI tools.

Users also prefer personalized product recommendation at personalized prices. One respondent stated the issue by sharing, “*Visual search and dynamic pricing to offer discounts based on behaviour and demand.*” That means by analysing purchase behaviour and product demand AI should be able to tailor product recommendation as well as price to individual context. All this discussion indicated that AI could facilitate the transaction process effectively, but they must be transparent and fair. If the brands want to increase their customer conversion rate, they must integrate an adaptive and transparent pricing mechanism in their platforms which will be driven by AI (Kannan & Li 2016, 62).

#### 4.2.2 Transaction Support

The second theme of purchase stage on online retailing customer journey is transaction support. AI enhances customer satisfaction during the checkout process by using features like auto filled payment form and one click payment. These features facilitate transaction support during transaction. According to the closed end survey data, (78.8%) respondents reported that they had experienced AI-based checkout process while shopping online retail. Among these respondents around (69.2%) respondents viewed this feature positively which means it made the transaction process easier and faster. On the contrary, (5.8%) respondents viewed this feature problematic that means it created complications in their checkout process. (25%) respondents showed a neutral stance toward this feature

which suggests that these customers did not notice any difference in AI based checkout platforms.

In the open-ended survey data and focus group discussion respondents also emphasized that AI could streamline the purchase process by assisting in decision making and providing a smooth transaction experience. Respondents also acknowledged that AI features in the transaction process enhance the confidence of the customer. The importance of this feature was noted by one respondent comment which was *“accurate sizing recommendations based on user data to reduce returns boost confidence.”* That means customers prefer precise and context-aware support at the transaction which can maximize purchase satisfaction. Participants also echoed their preference for product comparison tools which can assist them in decision making and avoid uncertainty. Monsur addressed this issue by stating that *“provide pros and cons between two products.”* This type of support at the time of transaction helps customers feel more informed about the product they are going to buy.

Participants also addressed the fact of creating a seamless shopping experience in the purchase process. One participant stated that *“create a seamless and engaging shopping experience.”* This type of expectation clearly raises the necessity of creating an uninterrupted and convenient shopping experience which will reduce cart abandonment. Apart from the expectations the participants shared their experiences which made the transaction process easy and smooth. Ishtyak stated that *“AI makes the checkout process easy by guiding you through billing and applying discount codes when available.”* This experience clearly indicates that the transaction process becomes hassle-free when AI based checkout features are integrated in online retail. Some participants did not have experience of using AI based checkout features, but they shared positive attitude towards these recognizing them helpful. Anjan shared that *“I haven’t used them, but I think it’s a good feature.”* All the findings indicate that AI tools can reduce complications at the transaction stage, but they must be more adaptive (Rana et al. 2021, 1749).

#### 4.2.3 User Engagement and Interaction Quality

The last theme of purchase stage is user engagement and interaction quality. This theme reflects how AI based chatbots provide quick and instant support for any queries that might disrupt the transaction process. Around (40.4%) respondents reported that they have used AI based chatbots at the time of transaction. Among these respondents (56.8%)

found chatbot support effective and their queries were resolved immediately. On the other hand, (43.2%) respondents reported their dissatisfaction. Which means participants did not get their expected support from the AI-based chatbots because of their limited problem-solving capabilities.

Because of the intangible nature of shopping customers sometimes feel confused about the product quality, product sizing, delivery information. To resolve these queries, AI based chatbots support as a virtual assistant at the time of transaction. Their quick responses and accurate information can increase customer satisfaction. On the other hand, complicating the issue can result in cart abandonment. Survey respondents and focus group participants highlighted their concern about the responsiveness of these AI tools. one participant stated that *“customer support can be improved in the purchase stage, particularly the reply policy,”* which indicates that AI chatbots have limitations in providing answer outside the context and they are not accessible all the time. Another participant noted that chatbot should be *“an option to use, rather than forcing it upon users,”* which means customer prefer control over when they will use chatbots.

One of the most attractive features of online retail platforms is that customers can use that and buy products from there anytime from anywhere. Because of the technological advancement and benefit of modern retail platforms customers can buy products from overseas retail platforms as well. But the acceptance and usability of an online platform depends on how fast their support system is and how easily customers can avail these support services at the time of purchase. Pavan who was a focus group participant also echoed this issue by stating *“provide more relevant and quick response.”* This clearly indicates that customers not only prefer quick responses from the chatbots they also want relevant and accurate answers which will fulfill their information need.

Some participants also expressed their frustration regarding the support provided by chatbots. Because of the aggressive strategy and scripted nature of response, chatbot can also over-complicate the issue which might result in customer dissatisfaction. Anjan shared his dissatisfaction and experience with chatbot by stating *“they’re manipulative. It felt like a scam.”* That means if the responses of chatbots feel scripted and pushy then customers get suspicious which can erode trust. From the above discussion it is clear that, success of customer engagement in purchase stage not only depends on the availability of the chatbots or other virtual agents but also quality of communication and efficiency

of these support agents. Chatbot's support should not be confined within a predefined context rather they should be adaptive to learning and solving emerging customers issues at the time of transaction (Shumanov & Johnson 2021, 6).

### 4.3 Role of AI in Post-Purchase Stage

The discussion of this chapter was constructed by addressing the third sub-research question: "How does the use of AI shape the post-purchase stage in customer journey?" By analysing the collected data, it explored how AI-driven tools: recommendation engines and chatbots enhance customer satisfaction, customer retention and ongoing brand engagement after the transaction is completed. Post-purchase stage of customer journey in online retailing divided into two themes which are post-purchase experience and retention, overall satisfaction and improvement needs. These two themes tried to figure out how AI tools facilitate the post-purchase journey by analysing available data. Table 5 below summarizes the close end survey data of customers interaction with AI tools in the post-purchase stage.

Table 6: Summary of survey data analysis of post-purchase stage.

	Question	Positive (%)	Neutral (%)	Negative (%)
1	Recommendation quality	30.8	53.8	15.4
2	Chatbot effectiveness	62.2	0.0	37.8
3	Perception of brands using AI	55.8	30.8	13.4
4	Overall perception on AI	63.5	32.7	3.8

The table summarizes the key responses related to each theme within the post-purchase stage of the customer journey. The overview of the findings is presented in the table, but it is discussed more briefly in the following sub-sections.

#### 4.3.1 Post-Purchase Experience and Retention

In the post purchase stage AI driven tools provide services like tailored product recommendation considering customer's purchase behaviour and preference, personalized interaction about product delivery, return policy, clarifying warranty issues etc. From the analysis of closed-end survey data it was seen that around (88.5%) of participants have reported that they have encountered AI-generated product recommendations after purchase. Among these huge numbers of participants only (30.8%) participants found product recommendation relevant and useful while the

majority (53.8%) participants showed neutral stance toward this recommendation. That means most of the shoppers found the product recommendation occasionally relevant without having major impact. Whereas (15.4%) participants found these recommendations irrelevant. In terms of interaction with chatbots after purchase, (62.2%) participants got their expected answers while interacting after purchase but (37.8%) participants had negative experience and faced unresolved issues.

In the open-ended survey responses participants emphasized the need for adaptive and improved product recommendations based on preferences and customer feedback. After purchasing a product normally customers provide feedback regarding their overall experience and expect that the issues that they face earlier should be resolved. But if they face problematic issues again when they intend to purchase from the same brand again it might be a reason for dissatisfaction. One respondent addressed this issue and suggested that AI should *“adapt to changing customer demands to maintain high retail standards.”* This clearly indicates that using only static algorithms cannot improve the performance of AI in online retail. Brands need to adopt a dynamic and informed approach which will improve the performance of AI by analysing customer feedback and purchase behaviour.

In the focus group discussion participants appreciated the support provided by AI based chatbots in the post-purchase stage. Especially they liked the features like AI-powered delivery tracking and pickup point suggestions which increased their post-purchase satisfaction. Monsur shared his experience by stating that *“It’s a quite good feature that AI provides real-time updates, showing exactly where the product is and the delivery status.”* Another participant echoed this positive side of AI and reported on getting a smooth post-purchase experience because of AI driven delivery handling. Anjan noted that *“yes, I’ve experienced suggestions for pickup locations based on proximity and convenience.”* These types of experience give customers a feeling that they matter to retailers even after purchasing the product which eventually supports retention.

However, participants encountered some frustrating experiences when they used AI-driven customer services after purchasing a product. Because of the over-complicated system and delay in getting response made them frustrated. Ishtyak noted this issue by stating *“it was somewhat frustrating due to numerous steps and questions. A simple, one-click solution would be preferable.”* All these findings suggest that customer retention not only depends on service availability but also depends on how easily and effectively

customers can avail of those services. To enhance customer engagement and retention after purchase brands need to integrate such AI system in their platform which will provide continuous support and resolve any issue quickly (Chen & Prentice 2024, 5).

#### 4.3.2 Overall Satisfaction and Improvement Need

The last theme of the post-purchase stage of the customer journey is overall satisfaction and improvement need. This theme explores how customers evaluate their shopping experience in an AI driven environment and what improvements they expect in AI-driven retail platforms. Analysis of closed end survey data reveals that (55.8%) participants preferred brands that use AI in their customer journey whereas only (13.4%) of participants disliked AI-driven shopping experience. On the other hand, (63.5%) participants gave positive feedback that AI improved their shopping experience while (32.7%) participants remained neutral and only (3.8%) participants thought AI harmed their shopping experience.

The open-ended survey data revealed that customers expect AI tools to evolve over time to meet changing customer demand. It is already evident that some AI based features are working perfectly fine to meet customer demand at the present time. But customers are technologically aware nowadays and their demand and preferences are also changing from time to time. So, building an adaptive AI system which will evaluate customers' behaviour and go through continuous improvement will increase the efficiency of these tools. One responded noted that *"use moderate algorithms to improve results,"* which clearly indicate that customer prefer more context aware product recommendation which will meet their demand. Some participants found online retail platforms over complexed because of the several unnecessary steps and showing unnecessary features. They prefer an easy and smooth customer journey which was noted by one participant's statement *"guiding customer journey with a bit easier flow."*

In the focus group discussion participants showed a mixed reaction towards AI driven features like email reminders, follow-up discounts, and loyalty promotion. Some found these activities effective to get customers' attention and encourage repurchase. As an example, Pavan said that *"sometimes reminders about incomplete checkouts and follow-up emails for reviews encourage additional purchase."* That means continuous engagement with the customers can foster additional purchases. On the other hand, some

participant found this irritating which was noted by Anjan's statement that they consider these types of marketing as "*spam emails.*"

When discussed about brand loyalty participants emphasized more on product quality rather than evaluating only with AI experience. When customers buy something from a brand for the first time, if the purchase journey is easy and smooth and driven by AI it can create purchase satisfaction. But if the brand wants to convert that customer within a loyal customer, then it must make sure some other things like high product quality, accurate sizing, quick dispute management, resolving warranty issues etc. Anjan noted this issue by stating "*loyalty would depend on product satisfaction.*" Moreover, participants also suggested creating a shopping environment with a mixture of human and AI collaboration.

In most of the times AI can handle customer queries and provide accurate information but, in some cases, customer prefer human interaction while they are making a valuable or important purchase. Monsur noted this issue by stating, "*I prefer both. AI can handle common queries, but humans have deeper product knowledge.*" That means customers appreciate the usability of AI, but they do not have ultimate trust in them as they are driven by some algorithms. Depending on the above discussion there are still some gaps in AI based features which are provided by AI tools like recommendation engines and chatbots. To make the AI deployment more effective user centric refinement and improvement should be conducted (Araújo et al. 2022, 267).

#### **4.4 Summary of the Findings**

This section presented a consolidated overview of the effect of AI tools specially recommendation engines and chatbots on each stage of the customer journey in online retailing platforms. From the analysis of survey data and focus group discussion the summary highlights the key findings related to user experience, interaction, satisfaction, trust in the pre-purchase, purchase and post-purchase customer journey in online retail. Table 6 below presented the summary in a tabular form where each stage of the customer journey was divided into their associated themes then presented positive and negative insights from customer experience.

Table 7: Summary of the findings.

<b>Customer journey stage</b>	<b>Themes</b>	<b>Positive findings</b>	<b>Negative findings</b>
Pre-purchase	Personalization and product discovery	Improved product discovery, tailored recommendation.	Lack of context, irrelevant recommendations.
	User engagement and interaction quality	Instant and flexible virtual support during search.	Robotic interaction, limited information.
	Trust, transparency and privacy	Trusted when data is secured.	Privacy concern, possible data misuse.
Purchase	Transaction efficiency	Easy checkout including discounts and promo codes.	Unfair and manipulative dynamic pricing.
	Transaction support	Faster and smooth checkout.	Complex navigation of AI tools.
	User engagement and interaction quality	Instant and accurate support by chatbots.	Aggressive nature of chatbots.
Post-purchase	Post-purchase experience and retention	Improved product tracking, pickup suggestions.	Complicated after sales support.
	Overall satisfaction and improvement need	Encouraged repurchase.	Aggressive marketing through emails and ads.

In the pre-purchase stage of the customer journey AI based recommendation engines and chatbots streamlined customer experience related to product discovery, interactions with the retailers and trust. Most of the customers appreciated personalized product recommendations but they expect more relevant and context aware product suggestion which will match their purchase behaviour and preferences. They also emphasized adding features like voice command or visual search to make product discovery easier. Customers appreciated the availability of AI-based chatbots and their support, but they suggested making it more humanized and able to provide deep knowledge. Though the customers liked data-driven product recommendations, they expect that retailers would be more transparent regarding the usage of customers' data. They also suggested not collecting customers' data without prior consent.

In the purchase stage AI tools influenced transaction efficiency, transaction support and customer engagement when customers do the transaction. The main functionality of transaction efficiency was AI based dynamic pricing. Customers had mixed feelings about this pricing mechanism. Some customers found this strategy appropriate as it

provides competitive pricing. Others found it manipulative and unfair. AI tools also enhanced customer satisfaction by providing an AI based checkout system at the time of transaction. This checkout system removes the complications of checkout by providing features like one click payment, auto filled checkout form, automatically adding discounts. But customers suggested making the navigation of the checkout process easier and simple. Experience of interacting with the chatbots at the time of transaction varied. Some customers found their expected information's from chatbot immediately, but others found the interactions robotic. In some cases, chatbots failed to understand the customer's need, which happened because of limited product knowledge. By integrating an adaptive strategy, AI tools can make the purchase stage simpler and more beneficial for the customers.

AI tools contribute to the post-purchase stage by influencing post-purchase engagement and retention. Most of the customers liked the features provided by AI tools in the post purchase stage. These features include real-time product tracking, delivery suggestions, dispute management. Because of the AI tools customers can get their product easily at their convenient location without hassle. This increases their satisfaction, but sometimes navigating these features is complex. Customers suggested making it simpler and faster. Rather than providing generalized product recommendation customers also suggested to provide context-aware recommendations which will match their purchase behaviour. Marketing and promotional activities via email and ads should not happen at excessive level. Some customers appreciated AI-driven reminders and promotional campaigns, but others found it irritating. Lastly, most of the customers preferred a mix of AI and human driven shopping experience. AI can provide convenience, but they have some limitations which can be solved by human presence.

The findings outlined in this chapter indicates the influence of AI tools: recommendation engines and chatbots on online customer journey. Some of these findings showed similarity with the existing literature some showed some new insights which can complement the existing literature. The next chapter interpreted these insights more broadly. It discussed the theoretical and practical implications of the findings of this research, limitations of the study and outlined directions for future research.

## 5 Conclusions

The chapter synthesized the insights from the discussion of findings chapter to address the main research question of the research which is “How does the use of AI affect and shape the different stages of the customer journey?” From the analysis of survey data and focus group discussion the chapter investigated how AI tools particularly recommendation engines and chatbots influenced the pre-purchase, purchase and post-purchase stage of the customer journey in online retailing platforms. The main goal was to find out how AI tools influence the themes of each stage of the customer journey. By linking the AI influence in customer journey with existing literature and conceptual framework of this study this chapter figured out the possibilities and drawbacks of AI tools in online retailing platforms. The discussion of the chapter also includes how the findings of the research supplement and contradict with existing literature, what are the practical and managerial insights of this study, and limitations of the study. It also offered future research directions in this dynamic field.

### 5.1 Theoretical Contributions

The study contributes to theoretical understanding by examining the role of artificial intelligence in customer journey from pre-purchase to post-purchase stages in online retailing platforms. While most of the existing literature examined the role of AI tools withing a specific stage of the customer journey, this study offered a more holistic view by evaluating the effect withing whole customer journey. It highlighted the influence of AI tools on customer experience, satisfaction and interaction which result in customer satisfaction, trust, and retention.

First, this study explored and evaluated the effect of AI tools especially recommendation engines and chatbots across the customer journey from pre-purchase to post-purchase stage. While most of the existing literature explored the customer journey model in online retaining with minimal or no effect of AI tools, this study explored how AI tools influence customer expectations and needs. Though AI tools are integrated into online retail platforms to enhance customer satisfaction, but its effectiveness depends on factors like availability, transparency, and context-aware support. In the pre purchase stage, existing literature such as Susanuma & Yang (2024, 3) and Chen & Prentice (2024, 4) mainly focused on improving recommendation systems which will assist the customers in

understanding the need and better product discovery. This study also found that relevant product recommendations enhance customer satisfaction, but it also extended the discussion by adding explainable and user-controlled product recommendations. Effectiveness of AI recommendations does not solely depend on the relevancy or context-awareness. Customers try to understand why they see the recommendation and how they can control that by using tools like visual or voice search.

In the purchase stage, existing literature like Rana et al. (2021, 1749) and Kannan & Li (2016, 61) discussed how AI tools make the transaction process efficient by providing support like dynamic pricing, one-click payment. This research also found that these features provided by AI tools streamline the transaction process by making it easy and smooth. But sometimes customers find dynamic pricing strategies providing manipulative or unjustified product prices. That means if the transaction support strategies are not implemented thoughtfully it can create discomfort. In the post-purchase stage, the findings of this research closely aligned with the existing literature such as Chen & Prentice (2024, 8), and Susanuma & Yang et al. (2024, 3). According to the existing literature and our findings, this study found that post purchase product recommendation and support can enhance customer retention and satisfaction. But this study also found that customers raised concern about over-automated and aggressive recommendations. Sometimes they find the after-sales support services very complicated, which can erode satisfaction.

Second, this research offered an extended and refined understanding of the personalization and user control concept. While previous literature discussed the efficiency of personalization critically depended on product matching only. This research found that efficiency depends not only on product matching but also factors like timing, perception of fairness and customer intent. In online retailing platforms customers not only look for personalized product recommendations they also look for the answer why they are getting specific product recommendation and how the product can meet their needs. This study also offers an understanding that customers want AI to do their job without crossing the limit of customer's privacy boundaries.

Third, this study offered a refined understanding of the AI-human interaction theory. Supporting the findings of Shumanov & Johnson (2021, 4), this study also found that only speed and automation are not enough to shape the customer interaction experience.

Rather, user engagement strategy should include features like emotional tone, user autonomy and avoiding scripted nature of interaction.

Finally, this study offered an extended understanding of long-term AI effect on customer satisfaction and retention. Existing literature emphasized data transparency and privacy to build trust and customer retention. But this study explored that only data privacy is not enough to build a long-term customer relation. Brands must make sure ongoing and context-aware customer support and provide quality products which can foster trust and retention. In summary, these insights contribute to a more human-centered theoretical understanding by positioning AI as a stage sensitive, socially influenced, and ethically complex actor in the customer journey.

## **5.2 Practical and Managerial Contributions**

This study offered several practical insights for the retailers who want to enhance customer experience in online retail platforms by integrating AI into their business. There is no doubt that AI can foster customer satisfaction and can help customers in decision making stages. But a more refined design, communication strategy and context awareness can increase the efficiency of AI.

One key insight for the managers who want to use AI more effectively in their online platform is creating an adaptive recommendation mechanism. Customers appreciated AI-driven product recommendation, but they also prefer relevancy and clarity. Modern customers look for the answer of what is the reason behind getting a product recommendation or what additional features the recommended product offers. By providing product comparison or adding features like voice and visual search AI can ensure customer control over recommendation and brief contextual reasoning.

Customers' interaction with AI driven chatbots was very satisfactory as it provided instant and quick support to resolve customer queries. But customers also showed concern about the impersonal and aggressive nature of chatbot interaction. Sometimes chatbots fail to provide deep information about the product which created consumers confusion. Retailers should adopt an AI-driven communication strategy which allows user control, adaptive response, and more context-based customer support when necessary.

Dynamic pricing, which is a crucial pricing mechanism for the retailers, often creates confusion in the customer's mind. Some customers found this strategy an effective feature

because it provided competitive pricing, but others found the product price unfair and manipulative. Creating a transparent pricing strategy which will explain why product price is changing or how supply and demand influencing the pricing can create pricing transparency.

Post-purchase engagement strategies like product recommendation and follow-up emails were seen as a helpful feature by the customers, but excessive product marketing was considered as intrusive. Retailers should provide product recommendations in the post purchase stage by analysing customer data which will meet customer demand and preference. This can increase the relevancy of post-purchase product recommendations. Retailers should make the support services and features easy and smooth. Complications in claiming customer support after the purchase can erode trust. Overall, this study found that technical functionality alone cannot define the success of AI tools in retail platforms. When the customer gets their expected service and has control over that service which is transparent and trustworthy, that can create a long-term customer relationship.

### **5.3 Limitations and Future Research Directions**

This study provided a meaningful understanding of the role of AI in shaping online customer journey. But there are some limitations which exist in this study. By understanding the context of the findings these limitations can be easily pointed out which can create opportunities for future research.

One key limitation of this study is it mainly focused on the application of recommendation engines and chatbots in online customer journey. But there are some other AI tools which are also integrated in modern online retail platforms such as predictive analysis, virtual try-ons, augmented reality, and virtual reality. Further research can explore a broader range of AI applications which is shaping the customer journey in online retail. Including all the AI applications can provide a holistic view of their applicability, functionality and effectiveness in shaping online customer experience.

The second limitation of this study is its sample size and demographic scope. The survey and focus group represented a relatively small and geographically limited group. This limited number of samples may not explore the actual scenario of global online retail consumer's experience. To get more relevant findings further research can use relatively large number of samples and more varied samples across different nations, economic, and

market context. This will help to get a broader view of global consumer's experience in online retailing platforms.

Another limitation of this research is its cross-sectional nature of data. This study explored the customer's experience at a specific point in time which might ignore the long-term effect of AI tools. That means while customers engage with AI tools for long-term how the customers experience evolve over time and how consistent AI tools remain in handling long term customers can be explored in subsequent studies. This will help to get a better view of AI tools short-term and long-term applicability.

Finally, this study adopted the three-stage customer journey framework for exploring and structuring the findings. Though this three-stage customer journey framework provided better clarity in exploring customers' experience, future studies can explore circular models of customer experience. Because of the changing modern retail platforms, the customer's purchasing behaviour is also changing day by day which is dynamic and non-linear in nature. In summary, this study offers a foundation for understanding the role played by AI tools in online customer journey setting. For deeper and broader understating related to AI tools application in online retail, this study provided some directions which did not cover this study.

## 6 Summary

The research titled “The Effect of Artificial Intelligence on Customer Journey in Online Retailing” investigated the role played by artificial intelligence tools especially recommendation engines and chatbots in shaping online customer experience across the three stages of customer journey: pre-purchase, purchase, and post-purchase stage. AI tools are reshaping the digital customer experiences and adding new features to increase the efficiency of AI tools in digital retail platforms. This study addressed the gaps in existing literature and offered a structured understanding of AI’s impact throughout the entire customer journey.

The study adopted qualitative exploratory research approach for analysing the data. Data was collected through an online survey involving 52 participants and it was complemented by a focus group discussion involving four participants. The participants of online survey and focus group discussion were selected based on their experience in AI-driven e-commerce platforms. Collected data was analysed by following a deductive thematic analysis technique using NVivo software. The investigation and data analysis were guided by a conceptual framework which was developed by following the three-stage customer journey framework.

Key findings of the research indicated that AI tools influence customer journeys by providing a wide range of services and features. Though the effectiveness of AI tools varied which resulted in satisfied or unsatisfied customer experience. In the pre-purchase stage customers appreciated AI tailored product recommendations. This feature helped the customer in decision making process and find relevant product easily. But they raised concern about using personal data with consent for product recommendation purposes. They also raise concern about getting irrelevant product recommendations which did not match their purchase behaviour. Chatbots also played a supportive role in this stage by providing immediate support, but they have limitations of handling complex queries.

In the purchase stage AI tools streamline customer experience by providing features like dynamic pricing, AI-driven checkout process, virtual assistance through chatbots. Customers found these AI driven features effective and making the transaction process easy and smooth. But sometimes customers also faced with over-automated support systems by AI tools and unjustified pricing for products. Transparent pricing strategy with

human-like support facility can increase customer experience in this stage. In the post-purchase stage AI tools can enhance customer retention and trust by offering after-sales product recommendation, dispute management, order tracking, managing warranty claim. Customers appreciated these services in the post-purchase stage, but they also pointed out that sometimes accessing these services is difficult and there is a lack of empathy in AI-generated responses. Overall, customers preferred an AI-driven online shopping environment which will show them relevant product recommendations, provide justified product prices, respect their privacy, and offer a smooth customer service.

In conclusion, this study found that AI tools have a multifaceted impact on the online customer journey. Though it enhances customer satisfaction by providing various support services, it also faces challenges like transparency, data ethics, and emotional connection. The study emphasized that the success of AI tools in online retailing platforms does not solely depend on technological advancement but also on creating an ethically responsible and human-centered AI deployment.

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## Appendices

### Appendix 1 Survey Questionnaire

1. Have you seen AI generated product recommendations while shopping online?  
(Yes/No)
2. If the answer is yes, how do you find these recommendations:
  - Positive (relevant)
  - Neutral (Sometimes useful, sometimes not)
  - Negative (Irrelevant)
3. Can you write about a time when your decision was influenced by product recommendation?
4. Have you used AI chatbots while searching for products online? (Yes/No)
5. How was your experience while you were interacting with an AI chatbots?
  - Positive (Helpful)
  - Neutral (Sometimes helpful, sometimes not)
  - Negative (Frustrating)
6. Do you think AI driven product recommendations are as trustworthy as human suggestions? (Yes/No)
7. How do you feel about AI collecting data like browsing history, personal information to enhance personalize recommendation?
  - Positive (It improves my shopping experience)
  - Neutral (If it is secure than I don't mind)
  - Negative (It is a privacy concern)
8. Have you experienced product prices change dynamically because of demand, location or browsing history? (Yes/No)
9. How do you see this AI-driven dynamic pricing strategy?
  - Positively (Competitive pricing)
  - Neutral (Doesn't affect my decision)
  - Negatively (Manipulative pricing)
10. Have you noticed AI based checkout features like one click payment, auto-fill information? (Yes/No)
11. How do you feel about these AI based checkout features?
  - Positive (Easier and faster)

- Neutral (Didn't notice much difference)
  - Negative (More complicated)
12. Have you used AI chatbots for support during the purchase process? (Yes/No)
13. If yes, did AI chatbots provide you with the answer or resolve the issue during purchase process? (Yes/No)
14. After purchase, have you noticed AI recommending related products? (Yes/No)
15. How do you feel about these post purchase product recommendations?
- Positive (relevant)
  - Neutral (Sometimes useful, sometimes not)
  - Negative (Irrelevant)
16. Have you used AI chatbots for any assistance like tracking your order or processing a return after your purchase? (Yes/No)
17. If yes, did AI chatbots provide you with the answer or resolve the issue after your purchase? (Yes/No)
18. Do you feel likely to shop with the same brand because of the AI driven personalization? (Yes/No)
19. How do you see the brands that use AI for customer interactions?
- Positively (AI improves the experience)
  - Neutral
  - Negatively (I prefer human interaction)
20. What would you prefer in an ideal online shopping experience
- AI assistance only
  - Human support only
  - A mix of both
21. What is your perception towards AI driven personalized online shopping experience?
- Positive (It improves shopping experience)
  - Neutral (No significant difference)
  - Negative (It harms shopping experience)
22. What would be your suggestion for AI in online shopping to improve customer experience?

## **Appendix 2 Focus Group Discussion Guide**

### **Opening Question**

- What was your last experience of purchasing something from an online marketplace?

### **1. Pre-Purchase Stage**

Exploring how AI influences customer behaviour before making a purchase.

#### **AI Recommendation Engines & Product Discovery**

- Have you ever noticed AI-based recommendations while browsing products? (e.g., “You might also like,” “Customers who bought this also bought”).
- How often do you rely on these recommendations?
- Do AI recommendations help or feel irrelevant?

#### **AI-Powered Search & Personalization**

- Have you used voice search or AI-powered search filters (e.g., Amazon, Google Lens)?
- Do AI tools understand your preferences and suggest the right products?

#### **AI Chatbots & Virtual Assistants**

- Have you interacted with an AI chatbot while researching a product?
- Did it provide useful information or feel robotic?

#### **Trust & Transparency**

- Do you trust AI-driven recommendations more or less than human suggestions?
- Do you feel AI personalizes recommendations based on your preferences, or does it just push random products?
- How do you feel about AI collecting data like browsing history and personal information to enhance personalized recommendation?

### **2. Purchase Stage**

Examining how AI influences the transaction process.

#### **AI-Powered Pricing & Discounts**

- Have you noticed AI-driven dynamic pricing (e.g., fluctuating prices based on demand, location, or browsing history)?
- Do you feel AI pricing strategies are fair or manipulative?

### **AI-Driven Checkout & Fraud Detection**

- Have you experienced AI-powered checkout systems (e.g., one-click checkout, biometric payment, personalized discounts)?
- Have you ever encountered AI fraud detection blocking your transaction? How was your experience?

### **AI Chatbots for Customer Support**

- Have you used an AI chatbot to ask product-related questions or any last minute query during checkout?
- Did it help, or did you feel the need to speak to a human?

## **3. Post-Purchase Stage**

Exploring how AI affects customer satisfaction and loyalty after a purchase.

### **AI-Powered Order Tracking & Delivery Optimization**

- How do you feel about AI-powered order tracking (e.g., real-time delivery updates, predictive delays)?
- Have you experienced AI-based delivery optimizations, such as suggested pickup locations or drone delivery?

### **AI-Driven Customer Support & Issue Resolution**

- Have you used AI-powered customer service (e.g., chatbots for refunds, automated return processing)?
- Did AI resolve your issue, or did it make things more frustrating?

### **AI-Based Retargeting & Personalized Marketing**

- After making a purchase, have you noticed AI suggesting related products or reminding you to repurchase?
- Do you find post-purchase AI recommendations helpful or intrusive?

### **Brand Loyalty & AI's Role**

- Does AI-driven personalization make you more loyal to a brand?
- Do you trust brands that use AI for customer interactions?

### **Wrap-Up & Final Thoughts**

- Overall, do you think AI improves or harms the online shopping experience?

- What improvements would you suggest for AI in online retailing?

Would you prefer AI assistance or human support in future online shopping experiences?

## Appendix 3 Informed Consent



1 (1)

### Informed Consent Form for participation in scientific research

Research project title: The Effect of Artificial Intelligence on Customer Journey in Online Retailing

Place of research: Turku, Finland

The person responsible for the research: Md Mahamudul Hasan

I have been invited to participate in the above-mentioned research. I have read and understood the information given and I agree to participate in the project. I understand that participating in the research is voluntary and that I can at any point withdraw from participating in the research without giving any reason or cancel my consent without any negative consequences. I have received sufficient information about the research and how my personal data is processed. I have had the opportunity to ask questions from the researchers. With my signature, I give consent for participating in the research.

Yes  No

I consent that my interview can be audio-recorded

Yes  No

I consent that my interview can be video-recorded

Yes  No

I agree to be identified in the following way in the research outputs

[Pseudonym; alternative name/code chosen for the participant by the researcher]

Yes  No

Impersonal attribution

[e.g. by profession: company official, firm official]

Yes  No

### Contact information

\_\_\_\_\_  
Name of participant

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Name of interviewer

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature

## Appendix 4 Data Management Plan

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### Plan Overview

*A Data Management Plan created using DMPTuuli*

**Title:** The Effect of Artificial Intelligence on Customer Journey in Online Retailing

**Creator:** Md Mahamudul Hasan

**Affiliation:** University of Turku

**Template:** General data management plan - University of Turku

**Project abstract:**

Focus group discussion is conducted to understand the effect of artificial intelligence across the customer journey stages of pre-purchase, purchase and post-purchase in online retailing business sector.

**ID:** 27883

**Start date:** 01-11-2024

**End date:** 07-05-2025

**Last modified:** 23-04-2025

## The Effect of Artificial Intelligence on Customer Journey in Online Retailing

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### 1. General description of the data

**1.1 What kinds of data is your research based on? What data will be collected, produced or reused? What file formats will the data be in? Additionally, give a rough estimate of the size of the data produced and collected.**

Focus group discussion will be conducted. The length of the discussion will be 75 minus and it will be audio recorded for further use. The major concepts of the discussion is artificial intelligence, customer journey and online retailing.

**1.2 How will the consistency and quality of data be controlled?**

The researcher informed the guide and usage of the data before conducting the focus group discussion to maintain consistency and quality of data.

### 2. Ethical and legal compliance

**2.1 What legal issues are related to your data management? (For example, GDPR and other legislation affecting data processing.)**

No legal issues.

**2.2 How will you manage the rights of the data you use, produce and share?**

Data is processed through privacy notice.

### 3. Documentation and metadata

**How will you document your data in order to make it findable, accessible, interoperable and re-usable for you and others? What kind of metadata standards, README files or other documentation will you use to help others to understand and use your data?**

Data will be accessed by only the researcher. It will not be accessible by any third party.

### 4. Storage and backup during the research project

**4.1 Where will your data be stored, and how will the data be backed up?**

Data is only stored in the personal laptop of the researcher and it will be destroyed from that source after completing the research (latest 31 May, 2025).

**4.2 Who will be responsible for controlling access to your data, and how will secured access be controlled?**

The researcher will be solely responsible for controlling access to data. No access will be given to anyone else.

### 5. Opening, publishing and archiving the data after the research project

**5.1 What part of the data can be made openly available or published? Where and when will the data, or its metadata, be made available?**

The real data will not be available anywhere only the findings of the research will be made available.

**5.2 Where will data with long-term value be preserved, and for how long?**

Data will be stored and used only till the end of the research project.

### 6. Data management responsibilities and resources

**6.1 Who (for example role, position, and institution) will be responsible for data management?**

Md Mahamudul Hasan, Turku School of Economics, University of Turku

**6.2 What resources will be required for your data management procedures to ensure that the data can be opened and preserved according to FAIR principles (Findable, Accessible, Interoperable, Re-usable)?**

Data will be stored and used only till the end of the research project.

## Appendix 5 Declaration on the Use of AI Assistant

1. If I take 5 respondents in focus group discussion and 50 respondents in online survey will it be acceptable for masters thesis?

- ChatGPT said:

For a Master's thesis, your sample size should be justified based on research standards and methodological rigor. Here's an evaluation of your proposed sample size:

- 1. Focus Group Discussion (5 Participants)
- A single focus group with only 5 participants may not be sufficient to capture diverse perspectives.
- Typically, 3–5 focus groups with 5–8 participants each are recommended.
- If you can't conduct multiple groups, you should justify why a single group is sufficient (e.g., if your study focuses on a highly specialized audience with shared experiences).

Recommendation:

- Increase to at least 2–3 focus groups with 5–6 participants each, making it 10–15 participants in total.
- If you only conduct one focus group, emphasize that it serves as a preliminary exploration to inform the survey.
- 2. Online Survey (50 Respondents)
- A sample of 50 respondents in a survey is quite small for generalizable insights, especially in a mixed-methods study.
- Most Master's-level research aiming for valid quantitative insights should aim for at least 100–150 respondents.
- If your study is highly qualitative, you can argue that the survey is exploratory, but you'll still need a strong justification.

Recommendation:

- Ideally, aim for 100–150+ responses to improve statistical reliability.
- If limited to 50 respondents, you should:
  - Focus on qualitative insights from open-ended survey questions.
  - Emphasize that your study is exploratory rather than generalizable.
  - Consider using descriptive statistics rather than inferential statistics.
- Conclusion: Is it Acceptable?

- With 5 focus group participants and 50 survey respondents, your study may be seen as weak in sample size.
- If constraints exist (time, access to participants), you need a strong justification in your methodology chapter (e.g., difficulty in recruiting, exploratory nature, qualitative depth).
- Better approach: Increase focus group size to 10–15 participants (across 2–3 groups) and aim for 100+ survey responses.

Would you like help in crafting a justification for your sample size in your methodology section?

2. Can you write the methodology chapter base on my data collection and data analysis technique?

Certainly! Below is a structured **Methodology Chapter** for your thesis based on your data collection (Focus Group Discussion & Online Survey) and data analysis (NVivo for qualitative analysis). I've included proper academic citations, but you may need to format them according to your university's required referencing style (APA, Harvard, etc.).

- CHAPTER 3: METHODOLOGY
- 3.1 Introduction

This chapter outlines the research methodology employed to examine the effect of Artificial Intelligence (AI) on the customer journey in online retailing. It discusses the research design, data collection methods, sampling strategy, data analysis techniques, and ethical considerations. The study adopts an exploratory research approach using a mixed-methods design, incorporating focus group discussions and online surveys to ensure a comprehensive understanding of customer perceptions.

- 3.2 Research Design

This study employs an exploratory qualitative approach with supplementary quantitative elements. Exploratory research is appropriate for investigating emerging technologies such as AI in online retail, as it allows for a deeper exploration of customer experiences and behaviors (Creswell & Poth, 2018). By combining focus group discussions and online surveys, the study integrates qualitative and quantitative insights, enhancing data triangulation and validity (Saunders, Lewis, & Thornhill, 2019).

- 3.3 Data Collection Methods
- 3.3.1 Focus Group Discussions

Focus group discussions (FGDs) were conducted to gather in-depth qualitative insights into consumer experiences with AI-powered retail systems. FGDs are widely used in consumer research as they facilitate interactive discussions and idea generation (Krueger & Casey, 2015).

- Procedure
- Participants: The focus group consisted of 5 participants, selected through purposive sampling to ensure relevance to the study.
- Session Duration: Each session lasted approximately 60 minutes.
- Discussion Guide: A semi-structured discussion guide was developed, focusing on key themes such as AI-driven recommendations, chatbot interactions, and automated customer service experiences.
- Moderation & Recording: The discussion was moderated to ensure balanced participation and was recorded (with consent) for transcription and analysis.

While one focus group was conducted, the study acknowledges that multiple focus groups (typically 3–5) are recommended for richer data saturation (Morgan, 1996). The qualitative depth of the discussion, however, compensates for the limited sample size.

- 3.3.2 Online Survey

An online survey was distributed to collect quantitative and qualitative data on customer perceptions of AI in online retail. Surveys are effective in reaching a broader audience, ensuring a more diverse dataset than focus groups alone (Bryman, 2016).

- Survey Design
- Sample Size: The survey received 50 responses, which, while relatively small for quantitative research, is justified given the exploratory nature of the study.
- Sampling Method: A convenience sampling approach was used, targeting online shoppers familiar with AI-driven retail technologies.
- Questionnaire Structure: The survey consisted of both closed-ended and open-ended questions, allowing for statistical analysis as well as thematic exploration of qualitative responses.
- Distribution Platform: The survey was administered online via Google Forms (or any other platform used) to ensure accessibility.

While a larger sample (100–150 respondents) is typically recommended for generalizability, the insights from the focus group discussions compensate for the smaller survey sample, ensuring methodological triangulation (Denzin, 2012).

- 3.4 Data Analysis

- 3.4.1 Qualitative Data Analysis (NVivo Coding)

The qualitative data from the focus group discussion and open-ended survey responses were analyzed using NVivo software, which facilitates systematic thematic analysis (Bazeley & Jackson, 2013).

- Steps in NVivo Analysis:

1. Transcription: The focus group recording was transcribed verbatim.
2. Initial Coding: Open coding was conducted to identify key themes related to AI-driven customer experiences.
3. Thematic Analysis: Themes were refined using NVivo's node-based categorization, ensuring accurate representation of participants' perspectives.
4. Interpretation: The findings were contextualized using existing literature on AI in retail.

- 3.4.2 Quantitative Data Analysis

Although the primary focus is qualitative, the survey's closed-ended responses were analyzed using descriptive statistics. Basic frequency distributions and percentages were used to summarize responses related to customer interactions with AI. Statistical tools such as Microsoft Excel (or SPSS if applicable) were used for data visualization.

- 3.5 Sampling Strategy

A non-probability sampling approach was used, combining purposive sampling for focus groups and convenience sampling for the survey.

- Focus Group Sampling: Participants were selected based on their experience with AI-driven retail platforms.
- Survey Sampling: Online shoppers were recruited through social media and e-commerce forums.

While non-probability sampling limits generalizability, it is suitable for exploratory studies where the objective is to gain in-depth insights rather than statistical inference (Etikan, Musa, & Alkassim, 2016).

- 3.6 Ethical Considerations

The study adhered to ethical guidelines to ensure participant confidentiality and informed consent (Bryman & Bell, 2015).

- Informed Consent: Participants were provided with detailed study information before participation.
- Confidentiality: Data were anonymized to protect participant identities.
- Voluntary Participation: Respondents had the right to withdraw at any stage.

- 3.7 Limitations

While this methodology provides rich qualitative insights, some limitations exist:

- Small sample size: The focus group (5 participants) and survey (50 respondents) may limit generalizability.
- Sampling bias: Convenience sampling in the survey may not fully represent all online shoppers.
- Limited quantitative analysis: The study primarily focuses on qualitative insights, with minimal statistical testing.
- 3.8 Conclusion.

### 3. what is the way to write abstract of a thesis. what should be included in abstract?

What to Include in a Thesis Abstract

A good abstract typically contains the following components:

1. Background/Context
  - Briefly state the general area of your research.
  - What is the problem or gap in knowledge?
2. Objective/Purpose
  - What is the main goal or research question of your thesis?
3. Methods
  - What methodology did you use? (e.g., experiments, qualitative analysis, surveys)
4. Results/Findings
  - What are the key results or discoveries?
5. Conclusion/Implications
  - What is the significance of your findings?
  - How do they contribute to the field?

### 4. how to write the summary chapter of a qualitative thesis?

1. Restate the Research Purpose and Questions
  - Briefly remind readers of your research goals.
  - Rephrase the central research question(s).
2. Summarize the Key Findings
  - Recap the main themes or patterns identified in your data.
  - Highlight insights that directly answer your research questions.
  - Avoid re-presenting raw data — focus on interpretation.
3. Discuss the Meaning of the Findings

- What do your findings mean in the context of the literature and theory?
- Are there unexpected outcomes?
- How do your findings contribute to existing knowledge?

#### 4. Reflect on the Research Process

- Mention any methodological strengths or limitations.
- Discuss your positionality (if applicable): how your identity or biases may have influenced the research.

#### 5. Implications

- Practical: What can practitioners, policymakers, or communities take from your study?
- Theoretical: How does your work inform or challenge theory?
- Methodological: What does your approach offer future qualitative researchers?

#### 6. Recommendations (Optional)

- Suggest areas for further research or practical steps that could be taken.

#### 7. Final Thoughts

- Offer a concluding paragraph that brings closure and perhaps restates the significance of the study.