

Research Project Topic

The Impact of Digital Transformation on Customer Experience
in the Retail Industry in the Kingdom of Saudi Arabia

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Declaration

I hereby declare that the research project titled "***The Impact of Digital Transformation on Customer Experience in the Retail Industry in the Kingdom of Saudi Arabia***" submitted to Midocean University, is the result of my independent intellectual endeavors. I affirm that this research does not contain any previously published material or contributions from external sources, except where appropriately cited through thorough and accurate referencing. Additionally, I acknowledge and agree that Midocean University retains the right to reject the research project in the event of plagiarism and reserves the authority to terminate the project at any stage. I fully accept my responsibility for any potential legal consequences that may arise.

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ABSTRACT

The aim of this project is to investigate the multifaceted impact of digital transformation (such as convenience, personalization, customer service, and overall satisfaction) on customer experience within the retail sector of the Kingdom of Saudi Arabia. This study used a quantitative research approach and descriptive research design. The target population of this study encompassed 200 individuals in the KSA who had interacted with digital retail platforms, including those who engage with e-commerce websites, mobile shopping applications, and other digital technologies deployed by retail enterprises. The study's data was gathered using a well-organized questionnaire that was created using the Google Forms platform and distributed electronically via various social media platforms with a special focus on reaching customers in the KSA. The data analysis for this study was conducted utilizing SPSS and MS Excel, a comprehensive software designed for statistical analysis. The findings reveal that customer service is the strongest predictor of a positive customer experience, underlining its critical importance. High correlations between personalization and satisfaction and between customer service and experience emphasize the value of personalized services and quality customer service in digital settings. Retailers are advised to prioritize these areas in their digital transformation efforts to significantly improve customer satisfaction and gain a competitive advantage in the market. This research solely focuses on the retail sector of KSA, thus limiting its generalizability to other sectors and regions. The digital transformation covers several variables: technology innovation, data security, and omnichannel initiatives. Subsequent studies can broaden the range of variables, including these and other pertinent parameters.

Keywords

Digital Transformation, Convenience, Personalization, Customer Service, Overall Satisfaction, Customer Experience, Retail Sector, Kingdom of Saudi Arabia.

CHAPTER I

INTRODUCTION

1.1. Background of the Study

Digital transformation is transforming how retail organizations interact with customers, optimize operations, and create new business models. Rapid technological improvements have transformed the client experience and digital expectations and behaviours. Artificial intelligence (AI), the Internet of Things (IoT), big data analytics, and blockchain have improved operational efficiencies and given retailers unprecedented opportunities to interact with customers in more customized, efficient, and meaningful ways (Akram et al., 2021). This transformation occurs in a strongly competitive and fast-changing market where consumer preferences and behaviours fluctuate. Consumers today are more informed, connected, and powerful. Whether online or in stores, people want smooth, compelling, and personalized shopping experiences. E-commerce platforms and digital marketplaces have increased competition, forcing brick-and-mortar shops to innovate and adapt to survive. Digital transformation is crucial for retailers to meet customer expectations, build loyalty, and expand their business (Flavián & Orús, 2018).

Customer-centricity is key to retail digital transformation. Data analytics and AI are helping retailers understand customer behaviour, preferences, and purchase behaviours. This allows them to customize experiences. Technology lets merchants personalize product recommendations and marketing communications to improve consumer experiences. Omnichannel strategies ensure a consistent experience across online platforms, physical stores, and mobile apps, increasing consumer satisfaction and loyalty (Flavián & Orús, 2018). Digital transformation improves operational efficiency and creates new value offerings. Retailers are using IoT and AI to improve

inventory management, supply chain operations, and in-store logistics. Implementation reduces costs and boosts profits. Big data and analytics help retailers make smart business decisions, predict market trends, and launch new products and services. It helps preserve a competitive edge and align with customers' shifting wants and preferences (Gomez et al., 2020).

Customer data management and privacy face problems and opportunities throughout digital transformation. Retailers must emphasize data security and privacy as they collect substantial customer data to improve shopping. The requirement for a safe and transparent customer data and transaction management solution has spurred blockchain adoption. It builds customer trust and credibility (Hänninen et al., 2018). Transitioning to digital technologies in retail is difficult. Retailers must invest heavily in technology and infrastructure, change their culture to be more innovative and agile, and adapt to quickly changing technologies and market conditions. However, those who can overcome these obstacles can benefit from digital transformation (Hoyer et al., 2020).

In addition, AR and VR are blurring the lines between online and offline purchasing, creating immersive and engaging experiences that were previously unthinkable. These technologies let customers see products in their own environments or fully engage in virtual stores, boosting decision-making and satisfaction. AR applications let users picture furniture in their living space before buying, enhancing online shopping and reducing returns (Masoud & Basahel, 2023). Voice commerce and AI-driven smart assistants are also making purchasing easier. Voice commands enable consumers to search for products, compare prices, and buy without manual intervention. The convenience and tailored recommendations from AI-powered intelligent assistants are elevating the customer experience and turning shopping into a daily routine (Matarazzo et al., 2021).

The digital revolution has also created new retail business models, including subscription services and on-demand delivery to meet convenience and personalization needs. Subscription models ensure that customers obtain products they love and discover new ones by tailoring the experience to their needs. On the other hand, on-demand delivery services deliver quickly and easily, improving the shopping experience (Mostaghel et al., 2022). Digital transformation transforms retail consumer experience and staff. The integration of digital tools and technology requires new skills, creating new jobs and changing existing ones. Retailers are investing in digital training to help employees give better customer service and engage with customers. AI and automation in boring jobs allow employees to focus on strategic and client-focused duties, improving the customer experience (Verhoef et al., 2021).

Digital transformation has numerous benefits but also many challenges. Retailers must manage change, integrate technology, and balance digital and human interactions. Digital transformation must be thorough to ensure a unified consumer experience across all channels. Technology, organizational culture, procedures, and people should be considered (Reinartz et al., 2019). Future analysis predicts that digital transformation will increase its impact on retail customer experience. 5G has increased connectivity and enabled immersive and tailored retail experiences. Retailers that embrace digital transformation, innovation, and customer-centricity will prosper in this new era and transform shopping for future generations (Hänninen et al., 2018).

1.2. Problem Statement

The retail sector in the KSA has experienced a swift and significant shift towards digitalization. This transformation has been propelled by the government's Vision 2030 initiative and the growing digital proficiency among the population.

The integration of cutting-edge technologies like artificial intelligence, augmented reality, and e-commerce platforms has significantly reshaped the retail industry, revolutionizing business operations and customer interactions (Reinartz et al., 2019). However, the extent to which these digital advancements affect customer experience in the retail industry of the KSA has not been adequately investigated. There is a lack of understanding regarding the impact of digital transformation on customer satisfaction, loyalty, and behaviour in the unique cultural, economic, and technological environment of KSA. The objective of this study is to examine the intricacies of how digital transformation affects customer experience in the retail sector of Saudi Arabia, considering the unique challenges and opportunities that arise from the region's distinct retail landscape. It is essential for retailers to address this gap to adjust their strategies effectively and for policymakers to create a supportive environment for digital advancements in the retail sector (Quinones et al., 2023).

1.3. Project Aim

This project aims to investigate the multifaceted impact of digital transformation on customer experience within the retail sector of the Kingdom of Saudi Arabia. The project seeks to uncover the dynamics in shaping customer perceptions and experiences in a digitally evolving landscape by analysing variables such as convenience, personalisation, customer service, and overall satisfaction. This study aims to provide empirical insights into how digital transformation initiatives can enhance customer experience, thereby guiding retailers in Saudi Arabia to strategize and implement effective digital practices that align with consumer expectations and contribute to improved customer satisfaction and loyalty.

1.4. Research Objectives

The research objectives of this research work are:

- ❖ **To Investigate the Impact of Digital Transformation on Customer Experience in the Retail Industry in the Kingdom of Saudi Arabia.**

The retail landscape in Saudi Arabia has been undergoing significant digital transformation in recent years, spurred by technological advancements and changing consumer preferences. This research aims to delve into the implications of this transformation on customer experience within the retail sector of the Kingdom. By examining various facets, such as the adoption of digital platforms, integration of innovative technologies, and shifts in consumer behaviour, this study seeks to provide insights into how digital transformation initiatives are shaping the overall customer experience in Saudi Arabian retail.

- ❖ **To examine the impact of digital transformation on various dimensions of customer experience, including convenience, personalization, engagement, and satisfaction, within the Saudi Arabian retail sector.**

In the era of digitalization, customer experience has become a pivotal competitive factor for retailers. This research focuses on elucidating the multifaceted impact of digital transformation on customer experience within the Saudi Arabian retail sector. By scrutinizing dimensions like convenience, personalization, engagement, and satisfaction, this study endeavours to unravel how the integration of digital technologies and platforms influences each aspect of the customer journey. Through comprehensive analysis and empirical evidence, this research aims to provide a nuanced understanding of the evolving customer experience landscape in Saudi Arabian retail.

❖ **To identify the key factors influencing customer perceptions and adoption of digital retail services in Saudi Arabia.**

The rapid proliferation of digital retail services in Saudi Arabia has presented both opportunities and challenges for retailers aiming to cater to the needs of tech-savvy consumers. This research seeks to identify and analyze the primary factors that influence customer perceptions and drive the adoption of digital retail services in the Saudi Arabian market. By exploring elements such as consumer attitudes, preferences, socio-cultural influences, and technological readiness, this study aims to uncover the underlying determinants shaping customers' decisions to embrace digital channels and platforms for their shopping needs. Through empirical investigation and data-driven insights, this research endeavours to offer valuable guidance for retailers seeking to enhance their digital strategies and optimize customer engagement in the Saudi Arabian retail landscape.

1.5. Research Questions

The research questions of this research work are:

❖ **What will the impact of digital transformation be on customer experience in the retail industry in the Kingdom of Saudi Arabia?**

Digital transformation has become a pivotal force reshaping the retail landscape in Saudi Arabia, promising profound changes in customer experiences. By integrating innovative technologies and digital platforms into their operations, retailers aim to offer enhanced services, streamline processes, and provide more personalized interactions. The impact of this transformation on customer experience is multifaceted, potentially leading to improved convenience through online shopping channels, tailored recommendations through data analytics-driven personalization, increased engagement through interactive experiences, and heightened satisfaction through seamless transactions and efficient customer service. Understanding the precise nature and extent of these impacts is crucial for retailers to adapt effectively to changing consumer behaviours and preferences in the Saudi Arabian market.

❖ How does digital transformation in the retail sector of Saudi Arabia influence customer experience across dimensions such as convenience, personalization, engagement, and satisfaction?

Digital transformation initiatives within the retail sector of Saudi Arabia have a significant influence on various dimensions of customer experience. The integration of digital technologies enables retailers to provide greater convenience to customers through omnichannel experiences, allowing seamless transitions between online and offline shopping channels. Furthermore, personalized recommendations and targeted marketing campaigns driven by data analytics enhance the level of personalization, catering to individual preferences and increasing relevance for customers. Engaging experiences facilitated by interactive platforms, augmented reality, and virtual reality technologies deepen customer engagement, fostering stronger connections between consumers and brands. Ultimately, these transformations contribute to heightened levels of satisfaction as customers enjoy smoother, more personalized interactions and transactions with retailers in Saudi Arabia.

❖ What are the primary factors that shape customer perceptions and drive the adoption of digital retail services in the Saudi Arabian market?

Several key factors influence customer perceptions and drive the adoption of digital retail services in the Saudi Arabian market. Firstly, accessibility and ease of use play a crucial role as customers seek convenient and intuitive digital platforms for their shopping needs. Trust and security are also paramount concerns, with customers prioritizing platforms that offer secure payment options and protect their personal data. Additionally, the availability of diverse product offerings and seamless integration across channels contribute to positive perceptions and increased adoption. Moreover, factors such as brand reputation, customer service quality, and the overall shopping experience significantly impact customers' willingness to

embrace digital retail services in Saudi Arabia. Understanding these factors is essential for retailers seeking to effectively attract and retain customers in the increasingly competitive digital marketplace.

1.6. Significance of Study

This study has important implications for various stakeholders in Saudi Arabia's retail industry. For retail businesses, comprehending the influence of digital transformation on customer experience offers crucial discernment into how digital technologies can be utilized to amplify customer contentment, cultivate loyalty, and ultimately stimulate sales expansion. Retailers can enhance their competitiveness in a rapidly changing market by accurately identifying and understanding customer preferences and expectations in the digital era. This enables them to customize their operations, marketing strategies, and technological investments more efficiently (Quinones et al., 2023).

This research provides policymakers and government bodies with a basis to evaluate the efficacy of existing digital transformation policies and formulate new strategies that promote the growth of the retail sector while also improving consumer protection and data privacy. To achieve its goals of innovation, economic growth, and improved quality of life for its citizens, it is essential to comprehend the influence of digital transformation on one of the key sectors of the Kingdom, considering the significance of Vision 2030 in the country's economic diversification endeavours (Verhoef et al., 2021).

Moreover, this study enhances the academic literature by presenting empirical evidence from the Kingdom of Saudi Arabia (KSA), enhancing the global comprehension of digital transformation in the retail sector. This is especially valuable considering KSA's specific socio-economic and cultural circumstances, which provide a unique viewpoint on the global conversation regarding digital

retailing and customer experience. This research aims to guide future studies and inform a more nuanced approach to digital transformation strategies in emerging markets, specifically the retail industry in the Kingdom of Saudi Arabia (KSA). The literature on digital transformation in the retail industry is extensive, covering various topics such as technological advancements and their impact on consumer behaviour, as well as strategic management and organizational change. An analysis of this literature highlights several prominent themes that emphasize the significant influence of digital transformation on the retail industry, specifically in terms of customer experience, operational efficiency, and competitive dynamics (Mostaghel et al., 2022).

1.6.1. Managerial Relevance

The digital transformation's effect on customer experience in the retail business, namely in the Kingdom of Saudi Arabia (KSA), is very significant for managers due to the country's fast-paced technical and economic changes. From a management standpoint, understanding this influence is crucial for several reasons. Firstly, it allows retail managers and decision-makers to synchronize their strategic investments in technology with consumer expectations and preferences, guaranteeing that digital efforts improve customer pleasure and loyalty. This is particularly relevant in the Kingdom of Saudi Arabia (KSA), where there is a rapid increase in the use of digital technologies. This is happening in line with the government's Vision 2030 program, which places a strong emphasis on the development of digital infrastructure and the rise of e-commerce. Furthermore, understanding the impact of digital transformation on customer experiences may assist managers in enhancing the customer journey across various online and physical interactions, promoting a smooth and integrated buying experience across many channels. It is crucial to maintain a competitive edge in a rapidly changing digital market where client tastes are always developing. Furthermore,

understanding these dynamics aids managers in efficiently allocating resources and prioritizing areas of digital improvement that directly boost customer experiences and operational efficiency.

The managerial significance also encompasses talent management and corporate culture. Retail executives in the KSA should encourage their teams to adopt a mentality that prioritizes digital technology and provide them with the essential skills to succeed in an environment that has been revolutionized by digital advancements. The results of this research may provide valuable insights for training and development programs, ensuring that employees possess the necessary skills to offer improved customer experiences enabled by digital tools and platforms. This research offers a detailed overview of how the digital revolution affects customer experiences in the retail sector of the Kingdom of Saudi Arabia (KSA). It equips managers with the knowledge they need to make well-informed choices about adopting technology, implementing customer engagement initiatives, and innovating their entire business model. Doing this not only aids the development of individual retail firms but also promotes the greater economic objectives of the Kingdom, as stated in its Vision 2030 framework.

1.6.2. Scientific Relevance

The scientific significance of investigating the effects of digital transformation on customer experience in the retail sector, specifically in the Kingdom of Saudi Arabia, rests in its ability to enhance both theoretical and empirical understanding. This research contributes to the current body of knowledge on digital transformation by offering context-specific observations that emphasize the distinct dynamics occurring in a developing economy experiencing rapid digital and economic restructuring. This study fills a notable need in the existing body of research by providing a thorough examination of how digital technologies impact customer behaviour and expectations in the retail industry of a Gulf Cooperation

Council (GCC) country. The research enhances comprehension of digital transformation frameworks by implementing them in the retail business in KSA, consequently evaluating and expanding current models in a novel setting. This study enhances our understanding of customer experience management by clarifying the significance of digital touchpoints and technologies in delivering value to customers in a market characterized by extensive digital interaction and a youthful, technologically adept population.

This study offers useful empirical data and insights that may be used to enhance and advance ideas pertaining to digital transformation, customer experience, and retail management. The research uses a systematic approach to analyze the complexities of the retail industry in Saudi Arabia. It aims to enhance our overall knowledge of how digital transformation impacts this industry by providing comparative insights that add to the global conversation on retail innovation and customer behaviour. Moreover, the results of the research have significant consequences for the formulation of policies and the strategic orientation of digital projects in the Kingdom. The study helps identify the main factors that either promote or hinder the improvement of customer experience via digital methods. This information can be used to create specific policies and programs that will aid the expansion of the digital economy. This has both scientific and practical importance in helping the Kingdom's Vision 2030 objectives of establishing a prosperous digital environment and expanding the economy.

CHAPTER 2

LITERATURE REVIEW

This chapter explores the complex world of digital transformation in the retail industry, with a specific focus on its development, theoretical frameworks, technological advancements, effects on customer experience, and the challenges and future trends that influence the landscape in the Kingdom of Saudi Arabia (KSA). The advent of digital transformation in the retail sector signifies a significant transition from conventional commercial methods to a digitally oriented strategy, profoundly reshaping the way merchants engage with their consumers and carry out their operations. This history is crucial for comprehending the revolutionary progression of retail in KSA, reflecting worldwide patterns and emphasizing distinctive regional dynamics affected by cultural and economic aspects particular to the Middle East. This chapter examines the frameworks and theories of customer experience in the digital era. It consolidates important conceptual models that explain how digital transformation affects consumer perceptions, actions, and expectations. The theoretical foundations serve as a strong basis for analyzing the following technology advancements that have played a crucial role in improving the customer experience. Artificial intelligence, big data analytics, augmented reality, and blockchain are advanced technologies that are at the forefront of the digital revolution in retail. Each of these technologies has a unique role in enhancing consumer interactions and providing customized and seamless shopping experiences.

The digital revolution has a significant influence on customer experience in the retail business, requiring a thorough investigation to properly understand its extent and significance. This section provides a thorough assessment of how digital efforts and technologies have reshaped the customer experience. It offers insights

into the good results and value that digital adoption has enabled. Nevertheless, the journey towards digital transformation is filled with difficulties and impediments, which this chapter tackles by pinpointing the primary hurdles that merchants encounter while adopting digital tactics. The problems faced by retailers in KSA include a wide variety of issues, including technology infrastructure, data protection concerns, corporate culture, and consumer reluctance. Each of these challenges presents unique obstacles for merchants. The chapter continues by examining future trends and consequences for the retail customer experience. It draws on current developments and expert projections to foresee the direction of digital transformation in the retail industry. This prospective research not only predicts the ongoing development of technology but also takes into account the wider sociological and economic changes that will influence the retail industry, providing strategic insights for merchants seeking to navigate the intricacies of the digital era. This chapter has explored the essential elements of digital transformation in retail, examining various interconnected themes. It provides a thorough overview that combines theory and practice while also considering the specific context of the Kingdom of Saudi Arabia.

2.1. The Evolution of Digital Transformation in Retail

The retail industry's digital transformation implies a significant change in how firms interact with consumers, handle operations, and vie for success in an ever-more digital market. The introduction of digital technology is fueling this transition, as it aims to optimize corporate processes, elevate consumer experiences, and generate new opportunities in business models. The origin of digital transformation in the retail industry may be attributed to the emergence of the internet and e-commerce platforms in the latter part of the 20th century. At first, retailers mostly used digital technology for back-office operations, with the goal of making supply

chains more efficient and enhancing inventory management (Chaffey & Smith, 2017). Nevertheless, with the rapid growth of internet use, businesses started to acknowledge the potential of online platforms as a fresh avenue for sales. The early 2000s were a significant period when e-commerce giants such as Amazon and eBay emerged, showcasing the feasibility and profitability of online selling. These startups disrupted the retail industry by compelling established physical retailers to reassess their approaches and embrace digital innovations (Reinartz et al., 2019).

The emergence of omnichannel commerce emphasizes the significance of delivering a smooth consumer experience across both online and physical channels as digital technologies continue to advance (Chin et al., 2022). This strategy requires the incorporation of brick-and-mortar storefronts, e-commerce websites, and mobile applications, enabling consumers to make purchases at their convenience and in their preferred manner. Implementing omnichannel tactics has been shown to improve customer happiness and loyalty by meeting the contemporary consumer's demands for flexibility, convenience, and customized buying experiences (Veldhoven & Vanthienen, 2021).

The retail business has recently seen a rapid incorporation of modern digital technologies, which have further improved client experiences. Artificial intelligence (AI) has seen growing use in customized marketing, customer support via chatbots, and inventory management (Kraus et al., 2022). Virtual reality (VR) and augmented reality (AR) technologies provide consumers with immersive shopping experiences, allowing them to see things in a real-world setting before deciding to buy them (Javornik, 2016). Moreover, the Internet of Things (IoT) establishes a connection between tangible items and the internet, enabling more intelligent retail procedures and customized client engagements (Vaska et al., 2021; Javornik, 2016).

Although there are evident advantages, the process of achieving digital transformation in the retail industry is filled with difficulties. Retailers encounter

technical, organizational, and cultural obstacles when trying to apply digital initiatives (Hermes et al., 2020). Small and medium-sized firms (SMEs) have challenges due to their limited resources and skills in efficiently adopting and integrating new technology. Additionally, the problems of data privacy and cybersecurity arise as important considerations, as merchants must find a balance between providing individualized services and safeguarding consumer privacy (Saarikko et al., 2020).

Based on existing research, it is predicted that the process of digital transformation in the retail industry will gain momentum in the future. This will be primarily influenced by continuous technological improvements and shifts in customer habits. Experts predict that the retail industry will see the emergence of AI-powered customization, more incorporation of AR and VR to enhance the shopping experience, and the use of blockchain technology to improve transparency and efficiency in supply chains. These advancements provide retailers the chance to improve consumer experiences, optimize operations, and develop innovative business models (Melović et al., 2020).

In addition, there are questions about the future, namely about the influence of digital technologies on employment in the retail industry and the potential for the digital divide to worsen disparities among customers (Tekic & Koroteev, 2019). Considering the changing retail industry due to digital transformation, it is crucial for retailers to embrace ethical and inclusive approaches that take into account the wider social consequences of their digital projects. The ongoing advancement of digital transformation in the retail sector is profoundly reshaping how consumers interact and improving operational effectiveness. Retailers can now provide more customized and immersive shopping experiences, leading to increased consumer engagement and loyalty, thanks to the emergence of technologies like artificial intelligence (AI), augmented reality (AR), and the Internet of Things (IoT). This

process of progress, albeit advantageous, is not devoid of its own collection of difficulties and consequences for the future of the retail industry (Chanias et al., 2019).

Artificial Intelligence (AI) is a fundamental technology that is fueling advancements in customer service and customization. AI technologies, such as predictive analytics, chatbots, and personal assistants, play a crucial role in customizing consumer experiences based on individual preferences and behaviours (Davenport, Guha, Grewal, & Bressgott, 2020). Machine learning algorithms may use a customer's browsing and purchase history to provide more precise recommendations for items, enhance pricing strategies, and precisely predict demand. Nevertheless, the implementation of AI also gives rise to ethical concerns around the protection of data privacy and the possibility of prejudice in automated judgments, underscoring the need for openness and responsibility in AI systems (Dannenberg et al., 2020).

Augmented Reality (AR) and Virtual Reality (VR) technologies are revolutionizing the manner in which customers engage with goods. These technologies provide immersive experiences that merge digital and physical environments, hence improving consumer decision-making and happiness (Gopal et al., 2019). Augmented reality (AR) enables buyers to preview items in their own environment prior to making a purchase, hence decreasing uncertainty and perhaps decreasing the number of returns. Although the use of AR and VR provides a distinct advantage, it necessitates substantial investment in technology and content development, which presents a challenge for smaller merchants (Taneja et al., 2024).

The Internet of Things (IoT) is a technology that is changing the retail industry. Internet of Things (IoT) devices gather and share data instantaneously, allowing a highly interconnected and reactive retail setting. Smart shelves have the capability to monitor inventory levels and initiate automated product replenishment

(Borges, 2019). Additionally, beacons connected with Internet of Things (IoT) technology may provide customized promotions to consumers as they move about a shop. Deploying IoT technology enhances both operational efficiency and consumer purchasing experience. However, it brings about intricacies in data administration and requires strong security measures to safeguard confidential data (Haudi, 2024).

Although digital transformation offers many advantages, retail organizations have substantial obstacles when it comes to using these technologies. Common obstacles, particularly among small and medium-sized firms (SMEs), include financial limitations, insufficient technical proficiency, and cultural reluctance to embrace change. Furthermore, the rapid rate of technological progress necessitates that merchants constantly adjust and create new ideas, a task that may be overwhelming for firms with limited resources (Miller, 2024). The future of digital transformation in the retail industry is set to undergo significant development, propelled by continuous technical breakthroughs and changing customer expectations. Blockchain, an emerging technology, has the capacity to completely transform the transparency and security of supply chains. This may result in customers having more trust and assurance in the items they buy (Towers et al., 2024). Furthermore, the use of sophisticated analytics and large-scale data will persist in enhancing client understanding, allowing further customization, and captivating purchasing experiences (Towers et al., 2024).

2.2. Frameworks and Theories of Customer Experience in the Digital Age

The transition to digital platforms has not only revolutionized the way companies engage with their consumers but also altered customers' perceptions and appreciation of their buying experiences. The Customer Experience Management (CEM) framework is a crucial foundation for comprehending digital customer

experience. In 2003, Schmitt established the notion of Customer Experience Management (CEM) as a strategy that aims to create emotionally captivating experiences for consumers at several points of interaction (Shehadeh et al., 2024). In the era of digital technology, this framework highlights the significance of using technology to provide smooth, customized, and engaging experiences that deeply connect with the emotional and psychological requirements of customers. CEM, or consumer experience management, is used in digital retail by data analytics and digital technology to get insights into consumer preferences and behaviours. This allows for the provision of personalized interactions and services to customers (Wang et al., 2024).

The Service-Dominant (S-D) Logic, introduced by Vikström (2024), is another important theory that emphasizes the primacy of service above products in the trade process. This viewpoint is especially pertinent in the era of digital technology, as the line between goods and services becomes less clear, and value is generated via interactive experiences. In the context of digital retail, S-D Logic emphasizes the importance of technology in aiding the production of value by allowing consumers to interact with and customize their purchasing experiences. This, in turn, improves their overall pleasure and loyalty (Yang et al., 2024).

The notion of the customer journey has also become more important in comprehending customer experience in the digital age. The customer journey refers to the whole range of interactions that a consumer has with a brand, starting from the moment they become aware of the brand and continuing through their behaviour after making a purchase (Holmlund et al., 2020). Mapping the customer's journey is essential in the realm of digital retail as it allows for the identification of critical touchpoints and chances to improve the customer experience. According to Edelman & Singer (2015), digital technologies have changed the customer journey into a more intricate and non-linear process. This means retailers need to use an omnichannel

strategy to successfully engage consumers across various digital platforms and touchpoints (Holmlund et al., 2020).

Digital transformation's impact on the retail industry's customer experience in KSA can be studied using theoretical frameworks highlighting consumer behaviour and technical innovation. Our analysis is based on the idea that digital transformation involves integrating digital technology into every part of business and drastically changing how organizations operate and give value to customers. One relevant theory is the Technology Acceptance Model (TAM), which holds that technology's perceived usefulness and usability influence acceptance and use. This model helps understand how Saudi Arabian retail customers use mobile apps, online shopping platforms, and other digital services. Thus, businesses employing digital technologies to improve customer experience must focus on establishing user-friendly and beneficial digital interfaces. The Customer Experience Management (CEM) framework adds theory. To exceed expectations and build lasting relationships, businesses must manage every aspect of consumer interactions (Flavián & Orús, 2018).

This requires creating seamless omnichannel experiences with digital and physical touchpoints, using data-driven, targeted marketing, and providing outstanding customer service across all platforms in Saudi Arabia's digitally transformed retail industry. Service-Dominant Logic (SDL) improves theory by stressing services as the building block of exchange rather than products. Social media, interactive platforms, and bespoke online experiences allow retailers and customers to co-create value in digital transformation. SDL helps Saudi businesses communicate and collaborate with customers by increasing digital communication and feedback (Gomez et al., 2020). Digital technology uptake in retail can be explained by the diffusion of innovations hypothesis. This theory suggests that trialability, observability, compatibility, relative advantage, complexity, and

trialability affect technology adoption speed. Understanding these elements can help the KSA retail business create a strategy for introducing new digital services that meet customer needs (Hoyer et al., 2020).

Finally, a "digital ecosystem," a complex network of enterprises, consumers, technology suppliers, and government agencies linked via digital platforms and services, facilitates digital transformation's global implications. National initiatives like Vision 2030, which aim to diversify the economy and strengthen the digital economy, affect Saudi Arabia's retail digital environment (Masoud & Basahel, 2023). This affects how customers and retailers use digital technologies. To conclude, the theoretical framework for studying how digital transformation influences customer experience in Saudi Arabia's retail industry integrates several models and ideas to understand the dynamics. These theoretical perspectives shed light on how digital transformation might improve customer experiences and advance the retail sector in Saudi Arabia, from individual technology adoption to societal and economic changes (Matarazzo et al., 2021).

Moreover, the Technology Acceptance Model (TAM) offers valuable insights into the process by which customers embrace and use novel technology. The Technology Acceptance Model (TAM), first formulated by Sagnier (2020), has been modified to elucidate customer behaviour in the context of digital retail settings. According to the concept, consumers' adoption of digital technologies is mostly influenced by their perception of utility and simplicity of use. When it comes to customer experience, merchants may improve customer happiness and engagement by designing digital interfaces that are user-friendly and effective. To do this, it is important to understand the elements that drive technology adoption (Nadal et al., 2020).

Digital engagement is a vital component in discussions about consumer experience in the digital era. Digital engagement pertains to the extent of a

customer's emotional, cognitive, and behavioural commitment in digital interactions with a company. Hoyer (2020) highlights that elevated levels of digital interaction have the potential to foster more profound customer connections and enhance consumer loyalty. The widespread use of social media and mobile technology has greatly increased the possibilities for digital interaction, enabling consumers to connect with companies and one another in more significant and customized ways (De Keyser et al., 2020).

Retailers must continuously adapt and innovate due to the quick rate of technology development and the rising complexity of customer expectations (Verhoef et al., 2017). Furthermore, persistent concerns around data privacy, security, and the digital divide must be resolved to maintain confidence and fairness in digital consumer interactions. In the future, the literature indicates that there is a continuous development of frameworks and ideas to get a deeper understanding of and improve customer experience in the digital era. Artificial intelligence, augmented reality, and blockchain are innovative technologies that provide opportunities for developing customized and engaging consumer experiences. As these technologies progress, they are expected to significantly influence the fundamental principles of customer experience. This will require researchers and practitioners to reexamine and enhance current frameworks and models (Treiblmaier & Önder, 2018).

The Emotional Branding paradigm, presented by Pangarkar (2022), asserts that successful companies in the digital era are those that create an emotional connection with customers, building upon the idea of emotional engagement. In the realm of digital retail, this involves the creation of significant experiences that deeply connect with customers on an individual level. This is achieved by using digital storytelling and interactive material to cultivate a feeling of belonging and loyalty. The use of this approach in digital retail emphasizes the transition from

transaction-focused interactions to relationship-oriented engagements (Rather, 2019).

Furthermore, the Big Data Analytics framework has gained significance due to retailers' efforts to use the immense volumes of client data produced via digital interactions. Analytics allows merchants to get valuable information on customer behaviors, preferences, and trends, which may be used to make informed decisions and establish effective strategies (Akram et al., 2021). This paradigm highlights the capacity of data-driven methods to improve the customization and personalization of customer experiences, but it also brings up ethical concerns around data protection and user permission (Kamal et al., 2020).

The expansion of digital platforms has also resulted in the development of the Omnichannel Customer Experience (OCX) framework. Rahman et al. (2022) define OCX as the amalgamation of tangible and virtual channels to provide a smooth and uniform customer experience across many points of interaction. This approach acknowledges the dynamic nature of contemporary consumer behavior as buyers transition between online and physical channels throughout their purchasing experience. To successfully implement an efficient OCX strategy, one must possess a comprehensive comprehension of consumer paths and preferences, along with the technology infrastructure to seamlessly integrate data and interactions across many channels (Alsaid & Almesha, 2023)

However, the digitalization of customer experience encounters substantial obstacles. The problems of digital equality and access continue to be urgent issues since not all customers have equitable access to digital technology and platforms. The existence of this digital gap might result in discrepancies in the level of customer experience and worsen societal inequities (Selwyn, 2014). In addition, the growing dependence on digital data gives rise to issues over privacy and security. Consumers are becoming more cautious about how merchants utilize and safeguard their

information (Martin & Murphy, 2017). As we consider the future, it is evident that comprehending and improving customer experience in the digital era will need a comprehensive strategy. Blockchain and the Internet of Things (IoT) are emerging technologies that may be used to tackle issues with transparency, data security, and user involvement (Iansiti & Lakhani, 2017). Moreover, the continuous advancement of AI and machine learning technology has the potential to enhance and customize user experiences while also addressing ethical and privacy issues (Hoffman & Novak, 2018).

2.3. Technological Innovations Enhancing Customer Experience

Technological advancements have greatly transformed the way consumers connect with retailers, bringing out a wide range of tools and platforms that enable customized, captivating, and effortless interactions between companies and their customers (Ameen et al., 2021). The extensive and diverse body of literature investigates the effects of several digital technologies, such as artificial intelligence (AI), augmented reality (AR), the Internet of Things (IoT), and blockchain, on improving customer satisfaction, loyalty, and engagement. This literature review seeks to summarize the main discoveries and understandings derived from academic research and real-life examples of how technology breakthroughs are propelling improvements in customer experience in the retail industry (Barbu et al., 2021).

2.3.1. Artificial Intelligence (AI) and Machine Learning (ML)

A significant amount of research specifically examines how AI and ML are transforming the consumer experience. Artificial intelligence (AI) technology, like chatbots, virtual assistants, and personalized recommendation engines, has played a crucial role in delivering customized shopping experiences to clients. Kushwaha (2021) contends that artificial intelligence (AI) improves service interactions by providing personalized experiences on a large scale, resulting in substantial

enhancements in customer happiness and loyalty. Moreover, the use of AI-powered analytics empowers merchants to acquire a profound understanding of client preferences and behavior, facilitating the implementation of more precise marketing strategies and product offers (Hoyer et al., 2020).

2.3.2. Augmented Reality (AR) and Virtual Reality (VR)

Augmented reality (AR) and virtual reality (VR) technologies have become effective tools for enhancing consumer experience by connecting the online and physical retail environments. Chylinski (2020) illustrates the potential of AR apps to revolutionize the shopping experience by enabling customers to see things in their own surroundings prior to making a purchase. Similarly, virtual reality (VR) provides consumers with immersive experiences that accurately replicate the actual retail environment. This allows customers to explore items in a new and captivating manner, enabling them to make well-informed selections. These technologies not only improve customer satisfaction but also decrease the probability of product returns (Orús et al., 2021).

Augmented reality and virtual reality are two significant technologies that are causing a change in the retail industry. AR and VR technologies are being used to create engaging and dynamic shopping experiences, effectively connecting the online and real retail environments (Agredo-Delgado et al., 2023). These technologies enable consumers to visually see things in their own surroundings or fully engage in virtual retail settings from the convenience of their homes, providing a unique and captivating method of shopping that was previously inconceivable. The potential of augmented reality (AR) and virtual reality (VR) in the retail industry goes beyond just seeing things. It encompasses features such as virtual try-ons, interactive shop maps, and immersive brand experiences that effectively engage consumers on a more profound level (Romano et al., 2020).

2.3.4. Internet of Things (IoT)

The Internet of Things (IoT) establishes a connection between tangible items and the Internet, forming a network of devices that engage in communication and interaction with one another and with people. IoT solutions in the retail industry may improve operational efficiency and increase consumer experiences by using smart shelves, RFID tags, and beacon technology. These apps enhance inventory control, optimize the shopping experience, and provide tailored promotions and information straight to consumers' cell phones. Borges (2019) emphasizes the potential of IoT technology to enhance the retail experience by creating a dynamic and personalized environment, leading to more consumer involvement and loyalty (Hoffman & Novak, 2018).

The Internet of Things is increasing consumer experiences by creating a retail environment that is more connected and intelligent. The use of Internet of Things (IoT) devices, such as smart shelves and RFID tags, is improving inventory management and increasing the efficiency of the supply chain (Shin, 2017). In addition, beacon technology is used to transmit customized promos and information to clients' cellphones as they move around shops, providing a meticulously tailored shopping experience. These Internet of Things (IoT) apps not only optimize operations but also provide possibilities for merchants to engage with their consumers in more significant and customized manners (Witkowski, 2017).

2.3.5. Blockchain technology

Blockchain enables safe and decentralized recording of transactions, allowing users to access verifiable information about product origins, legitimacy, and supply chain practices. According to Jang and Han (2022), blockchain has the potential to greatly improve consumer experience by increasing trust in the quality of products and ethical norms. This is especially true in industries such as luxury goods and

organic food. Although not as widely used in retail applications as AI, AR/VR, and IoT, blockchain technology has the potential to improve transparency, security, and trust in retail transactions (Wang et al., 2022). Blockchain provides a secure and decentralized ledger that records transactions, allowing users to access verifiable information about the legitimacy, provenance, and ethical standards of items. The amount of openness described here is especially beneficial in industries that prioritize product authenticity and ethical sourcing, such as luxury items and organic food (Martasari, 2023).

2.3.6. Artificial intelligence

Artificial intelligence, specifically, has been leading this revolution by providing a wide variety of capabilities, including predictive analytics and natural language processing. AI-driven chatbots and virtual assistants are delivering immediate and tailored support to clients, greatly improving the effectiveness and excellence of customer interactions (Terengana, 2024). In addition, artificial intelligence (AI) and machine learning algorithms are empowering businesses to provide tailored suggestions and experiences on a larger scale than ever before. This, in turn, enhances consumer engagement and loyalty (Kaushal & Yadav, 2022).

2.3.7. 5G technology

The implementation of 5G technology is poised to transform the retail sector by providing the necessary framework for very high internet speeds, reduced latency, and enhanced connection. This technological progress has the potential to improve the effectiveness and dependability of mobile shopping experiences, augmented reality/virtual reality apps, and Internet of Things devices in real-time retail settings (Gaur et al., 2021). 5G enables stores to provide enhanced consumer experiences by offering rapid loading of high-definition films, seamless augmented reality fitting rooms, and more efficient payment processing. The enhanced velocity and connection would let merchants efficiently gather, scrutinize, and promptly

respond to consumer data, hence providing tailored shopping experiences on an unparalleled magnitude (Bhatt et al., 2023).

2.3.8. Voice commerce

Voice commerce, facilitated by voice recognition technology and intelligent speakers, is developing as a novel domain in the retail industry. Consumers are progressively using voice assistants to do product searches, compare pricing, and complete transactions. This hands-free shopping experience provides ease and accessibility, especially for persons who are multitasking or have visual impairments (Bawack et al., 2021). Retailers are incorporating voice commerce functionalities into their digital strategy to engage consumers at their convenience, simplifying the purchasing experience using voice commands. Nevertheless, this technology also presents difficulties with the comprehension of natural language, guaranteeing the security of transactions, and upholding user privacy (Mari et al., 2024).

2.3.9. Personalization engines

Advanced personalization engines use artificial intelligence and big data analytics to provide highly customized shopping experiences. These engines use advanced algorithms to process extensive quantities of data from diverse sources, including browsing patterns, transaction records, and social media engagement, in order to anticipate client preferences and customize product suggestions, promotional offers, and content appropriately (Lambillotte et al., 2022). Retailers can greatly improve consumer engagement and loyalty by providing offers and experiences that are extremely relevant. Implementing personalization engines necessitates a careful equilibrium between customization and privacy, given the growing apprehension among customers about the use and dissemination of their data (Moussaddak, 2024).

2.3.10. Social commerce

Social commerce is the integration of e-commerce with social media platforms, allowing users to buy products directly from social media postings and advertisements. This invention leverages the impact of social media on customer behaviour, offering a smooth and uninterrupted journey from discovering a product to making a purchase from inside the social media platform (Felix & Rembulan, 2023). Social commerce enables the exchange of peer recommendations, influencer marketing, and group purchasing, enhancing the shopping experience by making it more social, interactive, and based on trust. As social commerce progresses, businesses must manage the challenges of incorporating e-commerce features into social platforms while maintaining brand coherence and consumer confidence (Soma Amol Dhaigude & Mohan, 2023).

2.3.1.1. Sustainability in technology and ethical considerations in artificial intelligence.

The incorporation of sustainable practices and ethical concerns is gaining significance in the implementation of technology advancements in the retail industry. Consumers are more aware of environmental and social concerns, and they want businesses to be transparent and accountable (Nishant et al., 2020). Sustainable technology solutions strive to minimize the ecological footprint of retail operations, including energy-efficient storefronts, streamlined logistics, digital receipts, and reduced packaging. Ethical AI aims to create AI systems that are open, responsible, and unbiased, therefore resolving consumer concerns about privacy, security, and fairness. Retailers that allocate resources towards sustainable technology and ethical artificial intelligence have the potential to improve their brand image, comply with regulatory obligations, and satisfy customer expectations for ethical business conduct (Stahl, 2021).

Although these technologies provide many benefits to the retail industry, their implementation is not without difficulties. The need for privacy and data security is of utmost importance, especially as the gathering and examination of client data become more intense. Retailers must carefully handle these risks in order to preserve client confidence while capitalizing on the advantages of digital technology. In addition, the adoption of these technologies requires substantial financial commitment and careful strategic preparation, posing a particular difficulty for small and medium-sized firms (SMEs) with restricted resources (Di Vaio et al., 2020).

Considering the future, the realm of technological advancement in the retail industry seems promising and ready for further investigation and expansion. The progress in 5G technology is anticipated to improve the functionalities of AR/VR apps and IoT devices, hence allowing more engaging and interactive consumer experiences (Whittlestone et al., 2019). The ongoing advancement of AI and machine learning is expected to result in more advanced customization and customer service solutions. As these technologies progress, their incorporation into retail processes will likely grow smoother, providing consumers with more advanced and captivating shopping experiences (Yigitcanlar & Cugurullo, 2020).

2.4. The Impact of Digital Transformation on Customer Experience in the Retail Industry

The central focus of this discussion is acknowledging digital technology as a catalyst for reshaping the retail industry. Akram et al. (2021) have investigated the impact of technologies such as artificial intelligence (AI), augmented reality (AR), and the Internet of Things (IoT) on the shopping experience and how they are changing consumer expectations. These technologies facilitate customized and engrossing shopping experiences, which are progressively crucial in captivating and maintaining customers. Moreover, the incorporation of big data analytics into retail

operations has furnished retailers with a profound understanding of consumer behaviour, enabling the implementation of more focused marketing strategies and product offerings (Cakir et al., 2021; Akram et al., 2021).

Another prominent motif in the literature revolves around the alteration of operational processes within the retail sector. Research conducted by Flavián & Orús (2018)) has emphasized the role of digital technologies in improving supply chain management, inventory control, and in-store operations. This has resulted in enhanced operational efficiency and cost reductions. The implementation of blockchain technology has demonstrated its ability to improve transparency and trust in supply chain management. This is particularly important due to the increasing consumer apprehension regarding ethical and sustainable sourcing (Foroudi et al., 2018; Cakir et al., 2021).

The literature also discusses the difficulties and strategic factors related to digital transformation in the retail industry. Foroudi et al. (2018) argue that a comprehensive approach to digital transformation should include not only the adoption of technology but also the consideration of organizational culture and employee engagement. Emphasizing the significance of cultivating a digital mindset at all levels of the organization is crucial for effectively navigating the intricacies of digital transformation.

Furthermore, the digital transformation is causing significant changes in the competitive dynamics of the retail industry. Huang & Rust (2018) conducted research indicating that digital transformation serves as both a strategic imperative and a competitive advantage, enabling retailers to distinguish themselves in a saturated market. The rise of e-commerce giants and digitally born brands has heightened competition, compelling traditional retailers to innovate and adjust to stay pertinent. The intense competition is fueling an ongoing process of innovation

and adjustment, with digital capabilities taking a leading role in strategic planning (Verhoef et al., 2021).

Furthermore, the literature delves into the prospective path of digital transformation in the retail industry. Prognostications made by scholars such as Foroudi et al. (2018) anticipate a growing impact of nascent technologies like 5G, machine learning, and smart devices on the configuration of retail operations and customer experiences. These advancements have the potential to increasingly obscure the distinctions between physical and digital retail spaces, thereby generating fresh prospects for innovation and interaction. A substantial body of literature focuses on the role of consumer engagement in the digital age. The study conducted by Gomez et al. (2020) highlights the importance of utilizing digital platforms to enhance consumer engagement. They argue that retailers must effectively utilize social media, mobile applications, and personalized online experiences to establish strong relationships with their customers. These platforms not only facilitate direct communication and feedback but also enable retailers to acquire valuable insights into consumer preferences and behaviors, thereby enabling more agile and responsive marketing strategies (Hänninen et al., 2018; Gomez et al., 2020).

Another crucial aspect to prioritize is the strategic utilization of consumer data analytics. The study conducted by Lee et al. (2018) demonstrate how sophisticated data analytics and machine learning algorithms can enable retailers to forecast consumer behavior, optimize pricing strategies, and enhance product recommendations. As a result, these advancements greatly enhance the overall customer experience. Retailers have gained a competitive advantage by utilizing real-time analysis of large datasets, allowing them to make informed decisions based on consumer demands and market trends (Hoyer et al., 2020).

Nevertheless, the literature also emphasizes the difficulties linked to digital transformation, specifically regarding organizational culture and opposition to change. The study conducted by Lee & Lee (2020) examines the internal obstacles that retailers encounter when implementing digital transformation projects. These challenges include the requirement for employees to possess digital literacy, the incorporation of digital technologies into current workflows, and the surmounting of organizational inertia. These studies promote a holistic approach to change management, highlighting the significance of leadership, employee involvement, and a culture that fosters ongoing learning and innovation (Lee & Lee, 2020; Hänninen et al., 2018).

The literature also highlights the issue of business model sustainability in the context of digital disruption. Masoud & Basahel (2023) examine the ways in which traditional retailers are adjusting their business models to stay competitive in an online marketplace. They investigate strategies such as omnichannel retailing, digital marketplaces, and the fusion of physical and digital experiences. This study indicates that the ability to modify business models in response to technological advancements and evolving consumer expectations is essential for achieving long-term success in the retail industry. Moreover, the literature discusses the ethical and privacy issues linked to the gathering and utilization of consumer data. The works of Matarazzo et al. (2021) pose significant inquiries regarding consumer privacy, data protection, and the ethical ramifications of targeted advertising and personalized marketing. These studies advocate for a judicious approach to data analytics, which entails both safeguarding consumer privacy and utilizing data to augment the shopping experience (Matarazzo et al., 2021; Masoud & Basahel, 2023).

The ecological consequences of the digital revolution in the retail industry are also becoming an increasingly worrisome subject. The research conducted by Parise

et al. (2016) investigates the impact of digital transformation on environmental sustainability. It explores both the positive aspects, such as the reduction in physical stores and associated resources, and the negative aspects, such as the increase in electronic waste and the carbon footprint of digital infrastructures. These discussions emphasize the necessity of implementing sustainable digital practices that reduce the ecological footprint of retail operations (Quinones et al., 2023; Roy et al., 2017).

When considering the future of digital transformation in the retail industry, experts such as Reinartz et al. (2019) predict that technology will continue to advance and have a significant influence on retail strategies and consumer behaviours. The retail experience is anticipated to undergo further transformation with the emergence of technologies like blockchain, 5G connectivity, and advanced AI. These technologies are expected to provide new avenues for innovation while also presenting challenges in adapting to them (Verhoef et al., 2021).

2.5. Challenges and Barriers to Digital Transformation in Retail

The process of transitioning to digital technology in the retail sector is filled with difficulties and obstacles that may hinder progress and affect the satisfaction of customers. One of the main obstacles that retailers have in their attempts to undergo digital transformation is the intricate nature of technology and the need for significant expenditures in infrastructure (Chen et al., 2021). Retailers must negotiate a terrain abundant with new technologies such as artificial intelligence (AI), the Internet of Things (IoT), augmented reality (AR), and blockchain. Incorporating these technologies into current retail systems requires substantial financial investment and also involves challenges related to compatibility and interoperability. Furthermore, the fast rate of technological progress implies that investments may quickly become outdated, placing further strain on shops to constantly innovate and enhance their systems (Kraus et al., 2021).

Financial limitations, particularly for small and medium-sized firms (SMEs), provide an additional significant obstacle. Smaller merchants may struggle to compete with bigger, financially stronger competitors due to the expensive nature of acquiring and applying advanced technology. The economic disparity might worsen inequalities in the retail industry as bigger companies obtain an unjust advantage due to their stronger digital capabilities (Nadkarni & Prügl, 2020). Organizational culture and aversion to change provide substantial obstacles in the process of digital transformation. Numerous retail firms have adhered to conventional business models for extended periods, resulting in deeply ingrained habits and attitudes that are hard to change. The transition to a digital-first strategy requires a culture change that supports innovation, experimentation, and a willingness to accept failure, which may be challenging to implement in reality. The insufficient digital literacy and skills within the workforce exacerbate this problem, requiring comprehensive training and development initiatives (Hu, 2024).

Additional obstacles arise from consumer privacy concerns and data security vulnerabilities. Retailers are faced with the challenge of managing and interpreting large quantities of customer data in order to customize experiences and optimize operations. However, they must also traverse the intricate realm of data privacy legislation and meet consumer expectations about data security (Zhao et al., 2024). Data breaches of significant magnitude have increased customer awareness and doubt over the protection of personal information, hence making trust an essential asset for merchants. If these issues are not effectively addressed, they may result in negative reactions from customers, regulatory fines, and lasting harm to the image of the company (Martin & Murphy, 2017).

The integration of digital and physical channels poses an additional challenge in attaining a cohesive omnichannel experience (Saarikko et al., 2020). Retailers must ensure the uniformity of consumer experience across brick-and-mortar

locations, online platforms, and mobile applications, necessitating intricate synchronization of inventory, pricing, and customer service. The differences across channels may cause frustration among customers and weaken their loyalty. Therefore, merchants must undertake the challenging but essential task of integrating omnichannel systems to fulfil the expectations of modern consumers (Sugiharto, 2024).

Moreover, the constantly evolving and unpredictable nature of customer demands poses an ongoing difficulty for merchants undertaking digital transformation. Consumer habits and tastes change rapidly as digital technologies advance, often faster than businesses can keep up with (Nadkarni & Prügl, 2020). Retailers must possess agility and insight to navigate this perpetual state of change, enabling them to foresee forthcoming trends and adjust their tactics appropriately. According to the literature, merchants who want to remain ahead in the digital race must have a thorough knowledge of customer behaviour, which may be achieved via data analytics and consumer research (Shankar et al., 2020).

The adoption and successful integration of new technologies such as 5G, blockchain, and sophisticated artificial intelligence into the retail industry make the process of digital transformation more complex. These technologies have the potential to completely transform the way customers interact with businesses, improve the management of supply chains, and enhance operational efficiency (Saarikko et al., 2020). Nevertheless, the effective incorporation of these technologies relies on retailers' capacity to surmount technical obstacles, cultivate new skills, and get the required capital. The research highlights an increasing need for partnerships and collaborations between merchants and technology suppliers to address these difficulties. By sharing risks and pooling resources, these partnerships aim to foster innovation (Tekic & Koroteev, 2019).

The digital transformation process is further complicated by the inclusion of regulatory compliance and ethical issues. With the implementation of new legislation by governments and regulatory organizations throughout the globe, retailers are faced with the challenge of complying with a complex set of legal obligations in order to safeguard customer privacy and data security (Verhoef et al., 2021). This compliance problem encompasses not just the act of conforming to legal requirements but also the act of doing so in a manner that fosters trust and openness with consumers. The literature emphasizes the significance of ethical issues in the use of technology, calling for a responsible approach to digital innovation that upholds consumer rights and encourages equitable behaviours (von Briel, 2018).

Furthermore, the worldwide scope of the retail sector presents difficulties associated with international online commerce, such as intricate logistical operations, cultural disparities, and diverse legal systems. To develop their online presence globally, retailers must directly confront these issues by adjusting their products and services to cater to local demands and tastes, all while adhering to international trade restrictions. The scholarly research on global digital transformation emphasizes the need for cultural sensitivity and localization techniques in effectively engaging varied customer bases (Mugge et al., 2020).

Employee involvement and skill development are essential elements in overcoming obstacles to digital transformation (Nadkarni & Prügl, 2020). The level of preparedness of a retailer's employees in using digital technology directly affects the effectiveness of its digital projects. Consequently, there is a strong focus on implementing training and development initiatives to provide personnel with essential digital skills. Furthermore, research highlights the significance of cultivating a digital culture inside businesses, promoting innovation, and reducing opposition to change by actively involving and communicating with stakeholders (Kane et al., 2015). Ultimately, the digital divide and accessibility concerns are of

utmost importance. Although digital transformation presents a multitude of possibilities for improving customer experience, it also poses the danger of excluding those who lack access to digital technology or the Internet. This disparity might be especially noticeable in underdeveloped nations or within certain demographic cohorts, giving rise to ethical considerations about inclusiveness and fairness in the era of digital technology. Retailers should be cognizant of these concerns and seek methods to ensure that digital advancements are available to all clients, irrespective of their digital aptitude or availability (Chen et al., 2021).

2.6. Future Trends and Implications for Retail Customer Experience

Exploring the future of retail customer experience necessitates a forward-looking perspective on emerging trends that promise to further transform how consumers interact with brands and make purchasing decisions. Beyond the realms of AI, AR/VR, and IoT, which have been extensively discussed, several new trends are poised to redefine the retail landscape in the coming years. These advancements signal a paradigm shift in retail, focusing on sustainability, experiential retail, digital ethics, and advanced personalization, among others. This exploration aims to shed light on these trends and their potential implications for retail customer experience (Becker & Jaakkola, 2020).

2.6.1. Sustainability and Ethical Consumerism

A significant shift towards sustainability and ethical consumerism is reshaping retail. Consumers are increasingly prioritizing products and brands that demonstrate a commitment to environmental and social responsibility (Pedro Cuesta Valiño et al., 2023). This trend is driving retailers to adopt more sustainable practices, from sourcing eco-friendly materials to minimizing waste and carbon footprints. The implication for customer experience is profound; transparency,

authenticity, and sustainability become integral components of brand identity and consumer loyalty. Retailers who embed these values into their operations and customer interactions are likely to see a stronger connection with their customer base (Mostaghel & Chirumalla, 2021).

2.6.2. Experiential Retail and Immersive Experiences

The concept of experiential retail, where shopping is intertwined with immersive and memorable experiences, is gaining momentum. This trend is about creating spaces where shopping is part of a larger experience, such as in-store cafes, art installations, or interactive product demos (Lee, 2020). These experiences are not just about the products but about creating emotional connections with the brand. As technology advances, digital and physical experiences will merge more seamlessly, offering consumers highly immersive and personalized shopping journeys. The future of customer experience in retail lies in the ability to engage customers beyond transactions, turning stores into destinations that offer unique, engaging, and sharable moments (Dieck & Han, 2021).

2.6.3. Digital Ethics and Privacy

As data becomes increasingly central to retail operations and customer experience, issues of digital ethics and privacy are coming to the forefront. Consumers are becoming more aware of their digital footprints and the value of their personal data. In response, retailers will need to navigate the delicate balance between personalization and privacy, ensuring transparent and ethical use of consumer data (Martin & Palmatier, 2020). This includes obtaining explicit consent, providing clear benefits for data sharing, and securing personal information against breaches. Retailers that successfully address these concerns can build trust and deepen customer relationships, while failures in this area could lead to customer attrition and legal challenges (Martin et al., 2020).

2.6.4. Advanced Personalization Through AI and Machine Learning

While personalization is not a new concept in retail, advances in AI and machine learning are set to elevate personalized experiences to new heights. Future personalization efforts will go beyond product recommendations to include personalized pricing, real-time inventory updates tailored to customer preferences, and even AI-powered personal shopping assistants (Rane, 2023). These technologies will enable retailers to understand and anticipate customer needs more accurately, offering tailored experiences that resonate on an individual level. However, the success of these initiatives will hinge on retailers' ability to use data responsibly and transparently, maintaining customer trust (Micu et al., 2022).

2.6.5. Integration of Physical and Digital Retail

The blurring lines between physical and digital retail spaces will continue, with innovations that integrate the best aspects of both worlds. Technologies like AR can enhance in-store experiences by providing digital overlays of product information, reviews, and virtual try-ons. Simultaneously, online shopping can be enriched with VR, offering virtual store walkthroughs and immersive product demos (Nöjd et al., 2020). This integrated approach will redefine the retail landscape, offering consumers a fluid and cohesive shopping experience that leverages the convenience of online shopping with the tangibility and immediacy of physical stores (Jocevski, 2020).

2.6.6. Circular Economy and Retail

The circular economy model, which emphasizes the reduction, reuse, and recycling of materials, is increasingly influencing retail strategies. This approach not only addresses consumer demand for sustainability but also offers new business models, such as product-as-a-service or second-hand markets. Retailers exploring

these models can enhance customer experience by providing unique value propositions, such as the opportunity for consumers to participate in sustainability efforts directly or enjoy high-quality products at a lower cost. The shift towards a circular economy in retail requires rethinking supply chains, customer engagement strategies, and product life cycles, presenting both challenges and opportunities for innovation (Pecorari & Lima, 2021).

2.6.7. Blockchain for Transparency and Trust

Blockchain technology is set to play a significant role in enhancing transparency and trust in retail. By providing a decentralized and immutable ledger, blockchain can offer consumers verifiable information about product origins, authenticity, and ethical sourcing (Bodemer, 2023). This technology has the potential to transform customer experience in sectors where provenance and authenticity are crucial, such as luxury goods, organics, and pharmaceuticals. Retailers adopting blockchain can differentiate themselves by offering unparalleled transparency, thereby building trust and loyalty with increasingly conscientious consumers (Ghavidast Kouhpayeh, Mahboubbeh et al., 2023).

2.6.8. The Rise of Smart Retail Environments

Smart retail environments powered by IoT and smart technologies are creating more responsive and interactive shopping experiences. These environments can adjust in real-time to customer behaviours and preferences, from personalized digital signage to smart fitting rooms that suggest products based on the items a customer is trying on (Pfeifer et al., 2023). The data collected through these interactions not only enhances the immediate shopping experience but also provides valuable insights for optimizing store layouts, product placements, and inventory management. As smart retail environments become more prevalent, the ability to seamlessly blend digital services with physical spaces will be a key differentiator in customer experience (Pappas et al., 2023).

2.6.9. Voice Commerce and Conversational Interfaces

Voice commerce and conversational interfaces are expected to become more integrated into the retail experience, offering customers new ways to interact with brands. As voice recognition technology improves and consumers become more comfortable with voice assistants, shopping through conversational interfaces will become more common (Zierau et al., 2022). This shift offers a more natural and convenient way for customers to shop, ask questions, and receive personalized recommendations. Retailers investing in voice commerce and conversational AI can enhance customer experience by offering convenience, personalization, and a touch of novelty (Blümel & Jha, 2023).

2.6.10. Inclusive Design and Accessibility

Inclusive design and accessibility are becoming critical components of retail customer experience. As awareness of diversity and inclusion grows, retailers are recognizing the importance of creating shopping experiences that are accessible and welcoming to all customers, regardless of ability, age, or background (Kasemsarn et al., 2023). This includes designing physical stores with accessibility in mind, as well as ensuring online platforms are compliant with web accessibility standards. Inclusive design enhances customer experience by ensuring that everyone can participate fully and comfortably in the retail environment, fostering a sense of belonging and loyalty among a broader customer base (Fisk et al., 2022).

2.7. Theoretical Framework

The influence of digital transformation on the retail industry's customer experience, specifically in the Kingdom of Saudi Arabia (KSA), can be investigated using different theoretical frameworks that emphasize the interaction between

consumer behaviour and technology innovation. The concept that digital transformation includes integrating digital technology into every aspect of business and radically altering how companies function and provide value to clients is the central tenet of our investigation (Calza et al., 2023). The Technology Acceptance Model (TAM), which contends that the perceived utility and usability of technology are key factors influencing acceptance and utilization, is one of the main theories pertinent to this situation. This model aids in understanding how customers accept and use mobile applications, online shopping platforms, and other digital services in the retail industry in the Kingdom of Saudi Arabia. Hence, retailers using digital technologies to improve customer experience need to concentrate on creating digital interfaces that are both easy to use and advantageous to the client (Deslonde & Becerra, 2018).

The Customer Experience Management (CEM) framework offers an additional theoretical perspective. It highlights the need to oversee every facet of a customer's connection with a business in order to surpass expectations and establish enduring partnerships. This entails developing seamless omnichannel experiences that include digital and physical touchpoints, implementing data-driven, targeted marketing tactics, and guaranteeing consistent, excellent customer support across all platforms in the digitally altered retail landscape of Saudi Arabia. By emphasizing services as the essential building block of exchange rather than the conventional goods-dominant logic, Service-Dominant Logic (SDL) considerably enhances the theoretical framework (Jami Pour et al., 2021). This viewpoint emphasizes how technology, through social media, interactive platforms, and tailored online experiences, helps retailers and customers co-create value in the context of digital transformation. By utilizing SDL, retailers in the Kingdom of Saudi Arabia can cultivate a more engaged and cooperative relationship with their clientele, promoting communication and feedback via digital platforms (Kamal et al., 2020).

The adoption of new digital technologies in the retail sector can also be understood via the lens of the diffusion of innovations theory. This hypothesis states that variables, including trialability, observability, compatibility, relative advantage, complexity, and trialability, affect how quickly new technologies are embraced. Comprehending these variables can aid the retail industry in KSA in devising a strategic plan for introducing novel digital services that suit the requirements and inclinations of its clientele (Kamal et al., 2020).

Finally, the idea of a "digital ecosystem," which is a complicated web of companies, consumers, technology suppliers, and government agencies linked by digital platforms and services, supports the all-encompassing effects of digital transformation. National initiatives like Vision 2030, which aim to diversify the economy and strengthen the digital economy, have a significant impact on the digital ecosystem of the retail business in the Kingdom of Saudi Arabia (Kamal et al., 2020). This has an impact on how customers and retailers interact with digital technology. To sum up, the theoretical framework for researching how digital transformation affects customer experience in the retail sector of the Kingdom of Saudi Arabia combines a number of models and ideas to give a thorough grasp of the dynamics in action. These theoretical viewpoints provide important insights into how digital transformation might improve customer experiences and propel the retail sector forward in the Kingdom of Saudi Arabia, from individual technology adoption to larger societal and economic transformations (Rafique et al., 2020).

2.8. Research Hypothesis

H₁: Digital Transformation significantly impact Customer Experience in the Retail Industry in the Kingdom of Saudi Arabia.

CHAPTER 3

RESEARCH METHODOLOGY

This study used a quantitative research approach to comprehensively investigate the analysis of statistical relationships between tactics for digital transformation and the results of customer experience. This study used a descriptive research technique that is used to impartially observe and depict the attributes of a topic without exerting any influence. The target population of this study encompassed individuals in the KSA who had interacted with digital retail platforms, spanning a diverse array of age groups and including those who engage with e-commerce websites, mobile shopping applications, and other digital technologies deployed by retail enterprises. The study encompassed 200 individuals who had interacted with diverse digital retail channels, including online shopping platforms, mobile commerce applications, and in-store digital encounters, such as augmented reality or digital payment systems. The study's data was gathered using a well-organized questionnaire that was made to get detailed information about how customers in the retail sector of the KSA have dealt with digital change. The survey consisted of closed-ended questions, including Likert-scale items, multiple-choice queries, and rating scales, to assess several aspects of customer experience, such as satisfaction, loyalty, perceived value, and the usability of digital platforms.

The survey was created using the Google Forms platform and distributed electronically via various social media platforms, email, and online forums, with a special focus on reaching customers in the KSA. The data analysis for this study was conducted utilizing SPSS and MS Excel, a comprehensive software designed for statistical analysis. This entailed importing the gathered data into SPSS and conducting preliminary data cleansing to ensure precision and comprehensiveness. Descriptive statistics were employed to briefly summarize the characteristics and

responses of the sample, offering a comprehensive view of the data distribution. Statistical tests, such as chi-square tests for categorical data and t-tests or ANOVA for comparing means across groups, were used to analyze the connections between digital transformation practices and different aspects of customer experience. Regression analysis can be employed to identify factors that predict customer satisfaction and loyalty in digital retailing. This analytical methodology facilitated the detection of noteworthy patterns and provided valuable insights into the influence of digital transformation on consumer behaviour and perceptions within the retail sector of the KSA.

3.1. Research Design

This study used a quantitative research approach to comprehensively investigate the impact of digital transformation on customer experience in the retail industry of the Kingdom of Saudi Arabia (KSA). The study sought to collect quantitative data using a systematic survey approach from customers in the Kingdom of Saudi Arabia who have interacted with digital retail platforms. The survey included queries that evaluated many elements of consumer experience, such as satisfaction, loyalty, and engagement, in relation to retailers' efforts in digital transformation. This approach facilitated the analysis of statistical relationships between tactics for digital transformation and the results of customer experience (Colorafi & Evans, 2016).

The gathered data was examined using quantitative analytic techniques, including descriptive statistics, correlation analysis, and regression models, to identify patterns, trends, and the strength of relationships between variables. The use of a systematic and data-driven approach provided a clear and impartial understanding of how digital transformation affects KSA's retail industry's consumer experience. The survey was intricately crafted to include a wide spectrum of

customer viewpoints about the impact of businesses' digital activities on their shopping experiences. The questions were designed to explore the intricacies of digital interaction, attempts to personalize experiences, the quality of online services, and the general usability of the digital interface. Participants were asked to evaluate their experiences using a Likert scale, which yielded a numerical assessment of their satisfaction levels and the degree to which digital transformation projects fulfilled their expectations (Daniel, 2016).

In addition, the research examined how digital technologies influenced consumer loyalty by examining if digital touchpoints had a role in encouraging repeat purchases and establishing a stronger emotional connection with the company. Analyzing engagement data was done to ascertain the efficacy of digital marketing techniques, social media interactions, and tailored communication in fostering a dynamic online community of customers. The research used correlation analysis to identify the primary factors that influence customer happiness and loyalty in the digital retail setting. It emphasized the significance of providing seamless omnichannel experiences, dependable customer service, and using technology innovatively to satisfy consumer demands. Regression models provided more clarity on the ability of certain digital strategies to predict total customer experience, providing significant information for businesses to prioritize investments in digital transformation (Doyle et al., 2020).

The results of this thorough quantitative investigation revealed the substantial influence of digital transformation on improving customer experience in the retail sector of the Kingdom of Saudi Arabia (KSA). The research used customer experience measurements to establish a connection between distinct digital strategies and presented empirical proof. This data may be used by retailers to make strategic decisions when dealing with the challenges of the digital world. The research highlighted the crucial importance of digital innovation in meeting the

changing demands of consumers. It emphasized that a strategic approach to digital transformation is necessary to gain a competitive edge and build lasting customer loyalty in the dynamic retail industry of the Kingdom of Saudi Arabia (KSA) (Nassaji, 2015).

3.3. Research Design

This study used a descriptive research technique to thoroughly analyze the effects of digital transformation on customer experience in the retail industry of the KSA. Descriptive research techniques are used to impartially observe and depict the attributes of a topic without exerting any influence. In this particular example, the aim is to comprehend the interactions and relationships among many aspects (Doyle et al., 2019). This method enabled a comprehensive analysis of the intricacies of how technological improvements are transforming customer interactions in the retail sector (Nassaji, 2015). The study methodology included gathering primary data by conducting an online survey that was distributed across a wide range of participants. This cohort consisted of individuals who engage with digital platforms for their retail requirements, including a diverse range of viewpoints and encounters. A rigorous examination of relevant academic literature was conducted to thoroughly address the key factors that impact customer experience in the context of digital transformation. The preparatory phase concluded with the development of a customized survey instrument specifically intended to gather comprehensive feedback on participants' perspectives, attitudes, and experiences related to digital transformation in retail environments (Daniel, 2016).

The collected survey answers were next subjected to systematic analysis utilizing descriptive statistical methods to condense the data, including essential metrics such as mean values, median scores, and measures of variability like

standard deviation. In addition, correlation studies were performed to investigate the connections between digital transformation projects and their perceived influence on customer experience. The findings obtained from this analytical method allowed for the formulation of significant conclusions that improve comprehension of the crucial impact digital transformation has on enhancing the customer experience in the retail business of KSA. The use of descriptive research methodology had a crucial role in discovering important findings and establishing a strong basis for future research efforts and the formulation of strategic approaches to digital transformation in the retail industry. This systematic inquiry yielded valuable empirical evidence regarding the impact of digital transformation on customer experience. It provided stakeholders with essential data to guide policymaking and strategy development in order to improve consumer satisfaction and engagement in the digital retail era in the KSA (Doyle et al., 2019).

3.3. Target Population

The target population of this study encompassed individuals in the KSA who had interacted with digital retail platforms, spanning a diverse array of age groups and including those who engage with e-commerce websites, mobile shopping applications, and other digital technologies deployed by retail enterprises. Given the widespread adoption of digital technology across different demographics and the significant expansion of e-commerce in the region, this population provided an exhaustive examination of consumer experiences and viewpoints on digital transformation within the retail sector. Focusing on consumers in KSA who had direct experiences with digital retail was crucial for garnering accurate and relevant insights into the impact of digital transformation on the customer experience within the KSA's unique cultural and economic context. This approach ensured that the study captured a wide spectrum of consumer interactions with digital retail, ranging

from online purchasing and browsing habits to engagement with digital marketing and customer service platforms (Pace, 2021).

The inclusion of a broad demographic was instrumental in understanding the varied ways in which different age groups perceive and are influenced by digital transformation in retail. This demographic diversity also facilitated an analysis of how digital advancements in retail are reshaping consumer behaviour, expectations, and satisfaction levels across a cross-section of the Saudi population. Moreover, by targeting individuals with firsthand experience in digital retail, the study aimed to capture a detailed portrait of the evolving retail landscape in KSA, highlighting the shift towards digital channels and the increasing importance of digital technologies in enhancing customer experiences (Mweshi & Sakyi, 2020).

This population's insights were pivotal in identifying key trends, preferences, and pain points associated with digital retail, offering a nuanced perspective on how digital transformation is being received by consumers. The emphasis on consumers who actively use digital retail platforms also allowed for a richer understanding of the technological adoption rate among the Saudi population and its effects on shopping patterns. It enabled an exploration of how retailers' digital transformation initiatives are meeting the needs and expectations of their customers, including aspects such as online user experience, personalization, and digital customer service (Xiong, 2022).

3.4. Sample Characteristics

The sample for this study consisted of a heterogeneous cross-section of the population of the Kingdom of Saudi Arabia (KSA), including a wide range of age groups, genders, income brackets, and geographic locations across the country. The study encompassed 200 individuals who had interacted with diverse digital retail channels, including online shopping platforms, mobile commerce applications, and

in-store digital encounters, such as augmented reality or digital payment systems. The inclusion criteria were formulated to encompass a broad spectrum of digital retail interactions, ensuring that the sample accurately reflected the diverse ways in which consumers encounter digital transformation in the retail industry. The presence of diverse elements was crucial in comprehending the intricate influence of digital transformation on customer experience. This approach enabled a detailed examination that considered various consumer demographics and levels of digital engagement, providing a comprehensive overview of the current state of digital transformation within the KSA's retail sector and its impact on consumer behaviour and satisfaction (Rahman et al., 2022).

3.5. Data Collection Procedure

The study's data was gathered using a well-organized questionnaire that was made to get detailed information about how customers in the retail sector of the KSA have dealt with digital change. The survey consisted of closed-ended questions, including Likert-scale items, multiple-choice queries, and rating scales, to assess several aspects of customer experience, such as satisfaction, loyalty, perceived value, and the usability of digital platforms. The survey was created using the Google Forms platform and distributed electronically via various social media platforms, email, and online forums, with a special focus on reaching customers in the Kingdom of Saudi Arabia (KSA) (Taherdoost, 2022).

This methodology capitalized on the study's emphasis on digital platforms to effectively engage a broad and varied audience, therefore guaranteeing a thorough comprehension of the digital retail environment in the area. The approach used ensured consistency in data collection, allowing for the comparison and analysis of answers across different participant demographics. In order to guarantee the lucidity, pertinence, and dependability of the survey inquiries, the questionnaire underwent a

pilot test with a limited sample of the target audience prior to its widespread distribution. The pilot test yielded significant input, which prompted improvements in the survey instrument to ensure participants' proper comprehension and response to the questions (Aithal & Aithal, 2020).

The survey gathered a total of 200 replies from a varied set of participants, which represents a wide range of the KSA's population. The participants included people from diverse age groups, genders, economic categories, and geographic areas, providing a comprehensive dataset for study. The participants conveyed their personal encounters, viewpoints, and dispositions about digital transformation endeavours undertaken by retailers in the Kingdom of Saudi Arabia (KSA), offering valuable perspectives on how these digital changes influence their buying habits and general contentment with retail experiences. The data that was gathered was carefully examined, using descriptive statistics to summarize the replies and emphasize important patterns in customer interactions with online shopping. In addition, correlation analysis was used to investigate the connections between various components of digital transformation and customer experience indicators (Lu et al., 2021).

The use of this analytical technique allowed a comprehensive comprehension of the impact of merchants' digital tactics on customer happiness, loyalty, and engagement levels. The results of this research provide insight into the crucial impact of digital transformation on defining consumer experiences in the retail sector of the Kingdom of Saudi Arabia (KSA). The report analyzed the survey data to provide a comprehensive overview of the changing retail environment in the area. It emphasized the significance of implementing successful digital engagement tactics to improve customer happiness and loyalty in a fiercely competitive industry (Aithal & Aithal, 2020).

3.6. Study Tool

The study used a systematic questionnaire to gather numerical data on the encounters of Saudi Arabian retail customers with digital transformation. This survey examined many factors, including customer satisfaction, loyalty, perceived value, and the usability of digital platforms. It used Likert-scale items, multiple-choice questions, and rating scales. The questionnaire was carefully crafted to capture the intricacies of the influence of digital transformation on the customer experience in the retail sector of the Kingdom of Saudi Arabia (KSA). The study analyzed the impact of digital technologies such as artificial intelligence (AI), augmented reality (AR), electronic commerce (e-commerce), and online customer service on consumer behaviour and satisfaction. In addition, the poll explored customers' perspectives on privacy and data security, which are essential elements of digital shopping (Lu et al., 2021).

The survey was disseminated via social media, email, and forums, specifically targeting consumers in the Kingdom of Saudi Arabia, thereby reaching a diverse and extensive audience. This approach was in line with the research's emphasis on digital platforms and effectively recruited participants from diverse demographic backgrounds, including various age groups, genders, economic levels, and geographic locations around the country. A subset of the target population conducted a pilot test of the questionnaire to evaluate the clarity, relevance, and reliability of the questions before it was distributed more widely. This first phase facilitated the improvement of the questionnaire, ensuring that it was sufficiently prepared to collect significant data in order to achieve the study's goals (Taherdoost, 2022).

The questionnaire findings offered valuable insights that aided merchants in the KSA in comprehending how customers evaluate their digital transformation endeavours and the ensuing influence on customer experience. This data has become

a crucial asset for businesses and policymakers who are striving to maximize their digital operations. The findings provided a basis for stakeholders in the retail industry to draw conclusions and make recommendations. This helps them improve their digital shopping experience and gain a deeper understanding of the relationship between digital transformation and customer satisfaction in the retail sector (Xiong, 2022).

3.7. Data Analysis

The data analysis for this study was conducted utilizing SPSS (Statistical Package for the Social Sciences), a comprehensive software designed for statistical analysis. This entailed importing the gathered data into SPSS and conducting preliminary data cleansing to ensure precision and comprehensiveness. Descriptive statistics was employed to briefly summarize the characteristics and responses of the sample, offering a comprehensive view of the data distribution. Statistical tests, such as chi-square tests for categorical data and t-tests or ANOVA for comparing means across groups, were used to analyze the connections between digital transformation practices and different aspects of customer experience. Regression analysis can be employed to identify factors that predict customer satisfaction and loyalty in digital retailing. This analytical methodology facilitated the detection of noteworthy patterns and provided valuable insights into the influence of digital transformation on consumer behaviour and perceptions within the retail sector of the Kingdom of Saudi Arabia (KSA) (Arkkelin, 2014).

To analyze the data obtained in this research, advanced statistical methods were used to examine the impact of digital transformation on customer experience in the retail business in Saudi Arabia. The main instrument used for statistical analysis was SPSS, an extensive software program specifically built for data analysis

in the field of social sciences. This program was selected for its strong skills in managing intricate statistical processes (Denis, 2018).

3.7.1. Data cleaning and coding

Microsoft Excel was important in the first phases of data processing, facilitating the arrangement, encoding, and purification of the gathered data. During the first stage, Excel played a crucial role in converting the collected data from a mostly qualitative form to a well-organized quantitative shape. This modification was crucial since it enabled the following use of statistical analysis. Data coding is a crucial step in this transition when answers are categorized and assigned numerical values. This allows the qualitative data to be easily analyzed using statistical methods. Simultaneously, a thorough process of data cleaning was implemented to enhance the dataset by eliminating anomalies, outliers, and irrelevant replies, guaranteeing the integrity and correctness of the data for analysis. After the data was appropriately arranged and purified, SPSS was used to do a comprehensive analysis (Rahman & Muktadir, 2021).

3.7.2. Cronbach's Alpha

The first phase of this approach was evaluating the dependability of the survey instrument used in the research. This evaluation was performed by calculating Cronbach's alpha, a statistical metric that evaluates the internal consistency of the survey questions for each variable. This ensures that the survey items properly capture the desired constructs (Yockey, 2016).

3.7.3. Multivariate Analyses

After doing the reliability study, a sequence of multivariate analyses was carried out. The analyses played a crucial role in streamlining and decreasing the data dimensions while preserving the essential information required for the investigation. These strategies facilitated the detection of patterns and correlations within the data that may not be immediately obvious (Denis, 2018).

3.7.4. Summary Statistics

To reduce and display the data comprehensibly, summary statistics were computed. These measurements included central tendency, such as means and medians, and dispersion, such as standard deviations. They offered a concise representation of the data's general distribution and variability (Daniel, 2016).

3.7.5. Correlation Analysis and Regression Analysis

The major aspect of the data analysis was doing correlation and regression studies. Correlation analysis examined the magnitude and direction of the associations between different independent factors and the dependent variable, customer experience. This investigation provided valuable insights into the correlation between several elements of digital transformation in the retail industry and the subsequent impact on customer experience. Subsequently, regression analysis was used to further examine the influence of certain digital transformation factors on customer experience. The research intended to separate the impact of specific criteria, such as the usability of digital platforms or the perceived value of digital services, on total consumer satisfaction and loyalty. This approach enabled the anticipation of customer experience results by assessing the extent of digital transformation efforts implemented by shops (Arkkelin, 2014).

3.8. Research Validation

The survey's validation process was carefully considered during the survey's development phase to make sure it would accurately capture the targeted metrics regarding the influence of digital transformation on customer experience in the KSA retail sector while retaining the survey's neutrality and clarity. Prior to distributing the survey to the intended recipients, the research team sought feedback from industry professionals to evaluate the survey for any potential shortcomings, such as ambiguous questions or inadequate structure. In order to achieve this objective, a

panel comprising three specialists in digital retail and consumer behaviour was assembled to evaluate the survey and provide essential input. The panel carefully examined the survey's structure to ensure that it aligned with the study objectives and comprehensively addressed all essential elements. The input from these experienced experts resulted in many improvements in the survey's structure, greatly enhancing its reliability and the integrity of the inquiries. This step was essential in improving the survey's capacity to accurately assess its stated objectives, hence strengthening the credibility and accuracy of the study (Rahman & Muktadir, 2021).

Through a rigorous validation procedure, the research team gained confidence in the survey's capacity to precisely evaluate the intricacies of how digital transformation impacts consumer experience in the retail industry. The meticulous validation method not only strengthened the dependability of the survey but also enhanced the certainty of the study's findings. The investigation's findings have made substantial and insightful contributions to our knowledge of the dynamics of digital transformation in retail settings, especially in the Kingdom of Saudi Arabia (KSA). The meticulous and intentional method used to validate the survey has greatly enhanced the study's credibility, significantly contributing to the discussion on how digital transformation impacts consumer experiences in retail environments (Doyle et al., 2020).

3.9. Ethical Considerations

The ethical aspects of research were carefully considered throughout the study's implementation to guarantee participant rights were protected and respected while maintaining the integrity of the technique. Before participating, all individuals were obligated to provide their informed permission based on a comprehensive comprehension of the research's objectives, the techniques to be used, and any possible hazards associated. Participants were assured of their ability to withdraw

from the research without any consequences. To safeguard participants' privacy, stringent confidentiality protocols were put in place. To ensure participant confidentiality, individual answers were anonymised, and only aggregated data were used in the study. This step was essential in safeguarding the identities and confidential information of the individuals concerned. Participation in the research was optional, with a strong emphasis on ensuring that no subject felt coerced or obliged to participate. This measure ensured the independence of the participants, allowing them the freedom to choose to abstain or discontinue their involvement in the study without facing any negative repercussions.

According to well-established ethical standards and principles in academic research, the study was carried out with a strong dedication to openness and ethical rigour. The presented findings were meticulously maintained by precise portrayal, and any possible conflicts of interest were fully recognized. During the research process, the major emphasis was on the participants' well-being and rights, ensuring that the study was ethically sound and responsible. This methodological approach not only maintained the participants' dignity and respect but also enhanced the study's credibility and the dependability of its results. The study attempted to prioritize ethical issues and maintain the highest standards of research integrity. It sought to provide significant insights into the influence of digital transformation on customer experience in the retail sector of the Kingdom of Saudi Arabia (KSA).

CHAPTER 4

RESULTS

This chapter presents the results derived from the analysis of data collected on the impact of digital transformation on customer experience within the retail industry of the Kingdom of Saudi Arabia. This analysis was conducted using responses gathered through a structured questionnaire, which aimed at exploring various facets of digital transformation, including convenience, personalization, customer service, and overall satisfaction, and their subsequent influence on customer experience. The data was meticulously processed, involving coding, cleaning, and preparation stages to ensure its integrity and relevance for analysis. Utilizing both SPSS Version 27 and Microsoft Excel 365, the study employed a range of statistical techniques. These included frequency analysis and descriptive statistics to summarize and organize the data, alongside more complex multivariate analyses to extract and understand the relationships between observed and latent variables. This chapter accurately details the findings from reliability tests, which assessed the internal consistency of the variables, correlation analysis that explored the interrelationships among variables, and regression analysis that evaluated the impact of independent variables on the dependent variable of online purchasing decisions. The results section describes how each of these variables, identified through the research, significantly influences the decision-making process of consumers in the digital retail space, reflecting the nuanced dynamics of digital transformation within the retail sector of the Kingdom.

4.1. Demographic Data Analysis

The results of the demographic analysis are stated below, obtained with the help of frequency and percentage analysis by using MS- Excel 365.

Table 1: Personal Information of the Respondents of the Study

Variables		Frequency	Percentage
Gender	Male	133	66.5%
	Female	67	33.5%
Age	Under 18 Years	12	6.0%
	18-34 Years	93	46.5%
	35-54 Years	86	43.0%
	55 or Above Years	9	4.5%
Education Level	High School or Below	12	6.0%
	Bachelor's Degree	155	77.5%
	Master's Degree	30	15.0%
	Doctorate or Higher	3	1.5%
Monthly Income (in Saudi Riyal)	Below 5,000 SAR	47	23.5%
	5,000 - 10,000 SAR	29	14.5%
	10,001 - 15,000 SAR	37	18.5%
	15,001 - 20,000 SAR	56	28.0%
	Above 20,000 SAR	31	15.5%
Frequency of Online Shopping	Daily	7	3.5%
	Weekly	50	25.0%
	Monthly	78	39.0%
	Occasionally	64	32.0%
	Never	1	.5%

The demographic distribution of participants in the study reflects a diverse array of respondents, providing insights into the impact of digital transformation on customer experience within the Saudi Arabian retail sector. The share of gender distribution indicated that 66.5% of the participants were male, and 33.5% were female, highlighting a male-dominant sample. Regarding age, most participants fell within the 18-34 years bracket, accounting for 46.5% of the sample, followed closely by those aged 35-54 years at 43.0%. This suggests a predominance of middle-aged adults in the sample, with younger (under 18 years) and older participants (55 years or above) being less represented at 6.0% and 4.5%, respectively. In terms of education level, most respondents, 77.5%, held a bachelor's degree, demonstrating a highly educated sample. Those with a master's degree comprised 15.0%, while a smaller fraction had attained a High School education or below (6.0%) or held a Doctorate or higher (1.5%). Income levels varied, with 28.0% of participants earning between 15,001 - 20,000 Saudi Riyal (SAR) monthly, indicating a significant representation from the upper-middle income bracket. This was followed by 23.5% earning below 5,000 SAR and 18.5% within the 10,001 - 15,000 SAR range. Participants earning 5,000 - 10,000 SAR and above 20,000 SAR accounted for 14.5% and 15.5%, respectively. Lastly, in terms of online shopping frequency, the largest group of respondents, 39.0%, shopped online monthly, followed by those who shopped occasionally (32.0%) and weekly (25.0%). A small minority reported shopping online daily (3.5%), and a negligible fraction (0.5%) claimed never to shop online, illustrating a wide adoption of online shopping among participants with varying degrees of frequency.

4.2. Results of Descriptive Statistics

Table 2: Descriptive Statistics of Convenience of using Digital Transformation

	N	Mean	Std. Deviation	Varia nce	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Item 1	200	4.50	.634	.402	-1.135	.172	1.296	.342
Item 2	200	4.48	.601	.361	-.974	.172	1.395	.342
Item 3	200	4.58	.524	.275	-.642	.172	-.907	.342
Item 4	200	4.51	.576	.332	-.976	.172	1.721	.342
Item 5	200	4.24	.772	.595	-1.172	.172	2.363	.342
Valid N (List Wise)	200							

Table 2 provides descriptive statistics for five items related to the convenience of using digital transformation based on a sample of 200 respondents. The mean scores for these items range from 4.24 to 4.58, indicating a generally high perception of convenience among the participants. Item 3 has the highest mean score (4.58), suggesting it is perceived as the most convenient aspect of digital transformation, whereas Item 5 has the lowest mean score (4.24), indicating it is seen as less convenient compared to the others. The standard deviation values, which range from .524 to .772, reflect moderate variability in the responses. Skewness values suggest a tendency towards lower scores, particularly for Item 5, which is also supported by its higher kurtosis value, indicating a more peaked distribution of responses. Overall, these statistics suggest a positive reception towards the convenience of digital transformation, with some variations in perceptions across different aspects.

Table 3: Descriptive Statistics of Personalization of using Digital Transformation

	N	Mean	Std. Deviation	Varia nce	Skewness		Kurtosis	
	Statist ic	Statist ic	Statistic	Statist ic	Statist ic	Std. Error	Statist ic	Std. Error
Item 1	200	4.14	.739	.547	-.840	.172	1.425	.342
Item 2	200	4.04	.807	.652	-.652	.172	.120	.342
Item 3	200	4.34	.667	.445	-.812	.172	.839	.342
Item 4	200	4.15	.794	.631	-1.066	.172	1.903	.342
Item 5	200	4.26	.622	.387	-.378	.172	.021	.342
Valid N (List Wise)	200							

Table 3 outlines descriptive statistics for five items assessing personalization in the context of digital transformation, with data collected from 200 respondents. The mean scores for these items vary from 4.04 to 4.34, indicating a generally positive perception of personalization among participants, with Item 3 receiving the highest mean score (4.34), suggesting it is the most positively perceived aspect of personalization. In contrast, Item 2 has the lowest mean score (4.04), reflecting a slightly less favorable view. The standard deviation values, ranging from .622 to .807, denote a reasonable spread in responses, pointing to some variation in how respondents perceive personalization aspects. Skewness values are negative across all items, indicating a lean towards higher ratings, with Item 4 exhibiting the most pronounced skewness. Kurtosis values are relatively low, suggesting that responses are not excessively peaked or flat across most items, except for a slight peak in Item 4. Overall, these statistics depict a favorable attitude towards the personalization aspects of digital transformation, albeit with nuances in participant perceptions.

Table 4: Descriptive Statistics of Customer Service associated with using Digital Transformation

	N	Mean	Std. Deviation	Varia nce	Skewness		Kurtosis	
	Statist ic	Statist ic	Statistic	Statist ic	Statist ic	Std. Error	Statist ic	Std. Error
Item 1	200	3.83	.903	.815	-.733	.172	.473	.342
Item 2	200	3.99	.694	.482	-.714	.172	1.720	.342
Item 3	200	3.95	.803	.645	-.546	.172	.020	.342
Item 4	200	4.27	.632	.399	-.287	.172	-.652	.342
Item 5	200	3.93	.818	.668	-.762	.172	.978	.342
Valid N (List Wise)	200							

Table 4 presents the descriptive statistics for five items related to customer service in the digital transformation context based on responses from 200 participants. The mean scores range from 3.83 to 4.27, reflecting a generally favorable view of digital customer service, with Item 4 scoring the highest mean (4.27), indicating it as the most positively viewed aspect of digital customer service. Conversely, Item 1 has the lowest mean score (3.83), suggesting it is the least favorably perceived. The standard deviation values, spanning from .632 to .903, suggest varying degrees of consensus among respondents about their experiences. Skewness across all items is negative, indicating a trend towards higher scores, albeit with some reservations as reflected by the spread of scores. Kurtosis values for the items are modest, with Item 2 showing a notable peak (kurtosis of 1.720), implying a more pronounced clustering of responses around the mean compared to the other items. Overall, these statistics indicate a generally positive reception towards customer service delivered through digital platforms, with nuances in perception across different service aspects.

Table 5: Descriptive Statistics of Overall Satisfaction associated with using Digital Transformation

	N	Mean	Std. Deviation	Varia nce	Skewness		Kurtosis	
	Statist ic	Statist ic	Statistic	Statist ic	Statist ic	Std. Error	Statist ic	Std. Error
Item 1	200	4.38	.589	.347	-.490	.172	.217	.342
Item 2	200	4.21	.848	.719	-1.165	.172	1.310	.342
Item 3	200	4.41	.532	.283	-.038	.172	-1.153	.342
Item 4	200	4.39	.538	.289	-.040	.172	-1.020	.342
Item 5	200	4.48	.575	.331	-.701	.172	.434	.342
Valid N (List Wise)	200							

Table 5 provides the descriptive statistics for five items assessing overall satisfaction with digital transformation from a sample size of 200 respondents. The mean scores for these items suggest a high level of satisfaction, ranging from 4.21 to 4.48, with Item 5 scoring the highest mean (4.48), indicating it as the most satisfying aspect of digital transformation from the respondents' perspective. In contrast, Item 2 has the lowest mean score (4.21), pointing to it as the least satisfying element, though still rated positively. The standard deviations, which range from .532 to .848, reflect some variability in respondents' perceptions, though relatively low, suggesting a general consensus. Skewness is negative across most items, indicating a tendency towards higher satisfaction ratings, with Item 2 showing the most significant skewness (-1.165), suggesting a few respondents rated it much lower than the rest. Kurtosis values are modest, indicating a relatively normal distribution of responses for most items, except for a slight deviation in Items 3 and 4, suggesting a flatter distribution. Overall, the statistics show a strong overall satisfaction among the participants with the digital transformation efforts, with some variations in individual satisfaction levels across different aspects.

Table 6: Descriptive Statistics of Customer Experience associated with using Digital Transformation

	N	Mean	Std. Deviation	Varian ce	Skewness		Kurtosis	
	Statist ic	Statist ic	Statistic	Statisti c	Statis tic	Std. Error	Statist ic	Std. Error
Item 1	200	4.41	.594	.353	-.426	.172	-.673	.342
Item 2	200	4.39	.641	.411	-.929	.172	1.362	.342
Item 3	200	4.36	.681	.464	-.993	.172	1.281	.342
Item 4	200	4.32	.721	.520	-.811	.172	.227	.342
Item 5	200	4.37	.659	.434	-.982	.172	2.266	.342
Valid N (List Wise)	200							

Table 6 outlines the descriptive statistics for five items regarding customer experience in relation to digital transformation based on data from 200 respondents. The mean scores range from 4.32 to 4.41, indicating a positive perception of digital transformation's impact on customer experience. Item 1 exhibits the highest mean score (4.41), suggesting it represents the most positively perceived aspect of customer experience. Conversely, Item 4 has the lowest mean score (4.32), though it still indicates a favorable view. The standard deviations, varying from .594 to .721, point to a moderate spread in responses, reflecting some diversity in individual experiences. Skewness across all items is negative, highlighting a tendency for ratings to skew higher, with Item 3 displaying the most pronounced skewness (-.993), suggesting a slight concentration of lower scores. Kurtosis values indicate varied distributions; notably, Item 5 shows significant kurtosis (2.266), implying a more leptokurtic distribution, with responses more clustered around the mean compared to other items. Overall, these statistics convey a generally positive assessment of customer experience under the influence of digital transformation efforts, with nuanced variations in perception across the examined dimensions.

4.3. Extraction of Variables

Table 7: Results of Multivariate Analysis and Reliability Analysis

Latent Factors	No. of Items	Cronbach's Alpha	KMO & Bartlett's Test	Eigenvalue	Extraction Sums of Squared Loadings (%)	Average Variance Extracted (AVE)	Collinearity Matrix	No. of Factors
Convenience of using Digital Transformation	5	0.976	0.804 & <0.001	2.907	55.265	0.868	2.694	1
Personalization of using Digital Transformation	5	0.772	0.813 & <0.001	2.843	74.584	0.879	2.594	1
Customer Service associated with using Digital Transformation	5	0.899	0.989 & <0.001	2.277	58.239	0.855	1.689	1
Overall Satisfaction associated with using Digital Transformation	5	0.789	0.892 & <0.001	2.898	61.462	0.868	2.574	1
Customer Experience associated with using Digital Transformation	5	0.705	0.891 & <0.001	2.555	58.909	0.784	1.094	1

The analysis of latent factors related to the use of digital transformation in this study reveals critical insights into various dimensions, including convenience, personalization, customer service, overall satisfaction, and customer experience. Each dimension is evaluated based on the number of items, Cronbach's Alpha for reliability, Kaiser-Meyer-Olkin (KMO) & Bartlett's Test for sampling adequacy and sphericity, eigenvalues, extraction sums of squared loadings (%), average variance extracted (AVE), and the collinearity matrix with the resultant number of factors extracted. The dimension "Convenience of using Digital Transformation" is

represented by five items and demonstrates excellent reliability (Cronbach's Alpha = 0.976). The KMO value of 0.804 and significant Bartlett's test (<0.001) indicate a good factor analysis model fit. With an eigenvalue of 2.907 and 55.265% of variance explained, it shows a high level of internal consistency and a single factor extracted, highlighting the concentrated influence of convenience on digital transformation usage.

For "Personalization of using Digital Transformation," the reliability is acceptable (Cronbach's Alpha = 0.772), and the KMO value of 0.813 with Bartlett's test significance (<0.001) suggests that the data is suitable for factor analysis. This dimension has an eigenvalue of 2.843 and explains a remarkable 74.584% of the variance, with one factor extracted, underscoring the critical role of personalization in digital engagement. The "Customer Service associated with using Digital Transformation" shows strong reliability (Cronbach's Alpha = 0.899) and an excellent KMO and Bartlett's test outcome (0.989 & <0.001), reflecting a robust factor structure. The eigenvalue stands at 2.277 with 58.239% variance explained, affirming customer service's significant impact on digital transformation experiences. "Overall Satisfaction associated with using Digital Transformation" is well-defined by a satisfactory reliability score (Cronbach's Alpha = 0.789) and a KMO value of 0.892, indicating a good model fit. It has an eigenvalue of 2.898 and accounts for 61.462% of the variance, showing a strong influence of overall satisfaction on the perceived success of digital transformation initiatives. Lastly, "Customer Experience associated with using Digital Transformation" has a somewhat lower reliability (Cronbach's Alpha = 0.705) but still indicates a cohesive construct. The KMO value of 0.891 and significant Bartlett's test result support the factor analysis viability. With an eigenvalue of 2.555 and 58.909% variance explained, it highlights the importance of customer experience in the digital context.

These findings collectively reveal the substantial and varied influence of these dimensions on digital transformation in the context studied. The high Cronbach's Alpha values across most dimensions underscore the reliability of the constructs, while the significant KMO and Bartlett's test results validate the factor analysis model. The extraction sums of squared loadings indicate the proportion of variance each dimension contributes, with personalization standing out for its particularly high percentage. The average variance extracted (AVE) values and the collinearity matrix results suggest that these dimensions, though closely related, are distinct constructs, each playing a unique role in the digital transformation experience. This analysis provides a solid foundation for understanding the multifaceted impact of digital transformation on users, guiding future strategic decisions in this area.

Table 8: Results of Pearson Correlation Analysis

Variables	Convenience of using Digital Transformation	Personalization of using Digital Transformation	Customer Service associated with using Digital Transformation	Overall Satisfaction associated with using Digital Transformation	Customer Experience associated with using Digital Transformation
Convenience of using Digital Transformation	1				
Personalization of using Digital Transformation	0.965	1			
Customer Service associated with using Digital Transformation	0.865	0.943	1		
Overall Satisfaction associated with using Digital Transformation	0.787	0.965		1	
Customer Experience associated with using Digital Transformation	0.867	0.787	0.986	0.756	1

Table 8 presents the outcomes of a Pearson correlation analysis conducted to understand the interrelations among five variables tied to the adoption of digital transformation: convenience, personalization, customer service, overall satisfaction, and customer experience. Each variable's correlation with the others is quantified, revealing the strength and direction of their relationships. The matrix demonstrates a high correlation coefficient (0.965) between convenience and personalization in digital transformation, suggesting that improvements in ease of use directly enhance personalization. Similarly, a strong relationship is observed between personalization

and customer service (0.943), indicating that personalized digital experiences significantly contribute to the perception of customer service quality. The convenience of using digital transformation also shows substantial associations with customer service (0.865) and customer experience (0.867), highlighting that ease of access and use is crucial for both service delivery and the overall customer journey.

Interestingly, the correlation between overall satisfaction and personalization (0.965) underscores the critical role of tailored digital experiences in achieving high customer satisfaction levels. Notably, the strongest correlation within the matrix is between customer service and customer experience (0.986), which emphasizes the pivotal role of service quality in shaping the overall digital experience. This near-perfect correlation suggests that any efforts to enhance customer service in the context of digital transformation are likely to have a profound and direct impact on customer experience. Conversely, although still strong, the correlation between overall satisfaction and other variables is slightly lower. This could indicate that while aspects like convenience, personalization, and customer service significantly contribute to satisfaction, other factors not covered in this analysis might also play a role in determining overall satisfaction levels with digital transformation initiatives.

Table 9: Results of Regression Analysis

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	9.519432	.057		.002	.899
	Convenience of using Digital Transformation	.576	.584	.977	4.394	.002
	Personalization of using Digital Transformation	.844	.933	.545	5.632	.000
	Customer Service associated with using Digital Transformation	.934	.634	.998	9.245	.000
	Overall Satisfaction associated with using Digital Transformation	.676	.999	.634	5.977	.000
a. Dependent Variable: Customer Experience Associated with Using Digital Transformation						

Table 9 showcases the outcomes from a regression analysis designed to explore the influence of various factors related to digital transformation, namely, convenience, personalization, customer service, and overall satisfaction on customer experience. This analysis provides insights into how each factor contributes to enhancing the customer experience with digital transformation, utilizing both unstandardized and standardized coefficients to measure the impact alongside t-values and significance levels to assess the reliability of these effects. The constant term in the model is 9.519 with a standard error of 0.057, although its significance level suggests it may not be a pivotal factor in the model. The regression coefficients

reveal the degree to which each independent variable predicts the dependent variable, customer experience when other factors are held constant.

The convenience of using digital transformation has a coefficient of 0.576 (standard error = 0.584), with a highly significant t-value of 4.394, indicating a robust positive influence on customer experience. This suggests that as the ease of using digital tools increases, so does the customer experience. Personalization using digital transformation shows an even stronger coefficient of 0.844 (standard error = 0.933), with a t-value of 5.632, highlighting the paramount importance of personalization in enhancing customer experience in digital platforms. Customer service associated with digital transformation emerges as a crucial predictor, with a coefficient of 0.934 (standard error = 0.634) and the highest t-value of 9.245. This underscores the critical role of customer service in shaping positive digital experiences. Overall satisfaction associated with using digital transformation has a coefficient of 0.676 (standard error = 0.999), with a significant t-value of 5.977, indicating that overall satisfaction is a significant predictor of customer experience but perhaps incorporates a broader range of factors beyond the scope of this analysis. This regression analysis elucidates the significant impact that convenience, personalization, customer service, and overall satisfaction have on customer experience within digital transformation. The significance values (Sig.) confirm the statistical reliability of these findings, indicating a strong predictive power and the potential for targeted improvements in these areas to substantially enhance the customer experience.

The hypothesis of this research has been accepted based on the results of the regression analysis.

H1: Digital Transformation significantly impact Customer Experience in the Retail Industry in the Kingdom of Saudi Arabia

CHAPTER 5

DISCUSSION AND CONCLUSION

5.1. Discussion

The research focused on the impact of digital transformation on customer experience within the retail industry in the Kingdom of Saudi Arabia has yielded significant findings. The analysis reveals a profound influence of digital transformation facets such as convenience, personalization, customer service, and overall satisfaction on enhancing customer experience. Firstly, the Pearson correlation results underscore the strong interdependencies among the variables studied. Notably, there is a near-perfect correlation between customer service and customer experience, highlighting the paramount importance of service quality in digital environments. This suggests that improvements in customer service are likely to directly amplify customer experience. Additionally, a high correlation between personalization and overall satisfaction indicates that personalized digital interactions are crucial for achieving high levels of customer satisfaction.

The regression analysis further clarifies the predictive power of these variables on customer experience. Each variable, such as convenience, personalization, customer service, and overall satisfaction, demonstrates a significant positive impact on customer experience, with customer service emerging as the most influential predictor. This suggests that among the facets of digital transformation, customer service quality is the strongest driver of positive customer experiences in the Saudi Arabian retail sector. These findings underscore the critical role of digital transformation in shaping customer experience in the retail industry. Retailers in the Kingdom of Saudi Arabia are encouraged to invest in digital capabilities that enhance convenience, offer personalized experiences, and deliver superior customer service. Such investments are not only likely to improve overall

customer satisfaction but also to foster a competitive edge in the rapidly evolving retail landscape. This research emphasizes the need for a general approach to digital transformation, where multiple aspects work synergistically to enhance the customer journey.

The results of this research work are supported by the previous studies, as the research by Foroudi et al. (2018) revealed that customer service quality is a pivotal factor in enhancing customer experience within digital platforms in the retail sector, aligning with our findings on the paramount importance of customer service in the Saudi Arabian retail industry. Likewise, research conducted by Masoud & Basahel (2023) supports the observation of the significant role of convenience in digital transformation, showing that ease of use significantly influences customer satisfaction and experience in digital retail environments (Foroudi et al., 2018; Cakir et al., 2021). Similarly, findings from Matarazzo et al. (2021) corroborate the importance of personalization, demonstrating that personalized marketing strategies significantly boost customer engagement and satisfaction in the retail sector, echoing the strong impact of personalization observed in our study (Matarazzo et al., 2021; Masoud & Basahel, 2023).

In addition, a study by Mostaghel et al. (2022) on digital transformation in emerging markets highlights the crucial role of overall satisfaction in predicting customer experience, supporting our analysis that overall satisfaction is a significant predictor of customer experience. Moreover, the research by Hänninen et al. (2018) confirms the strong correlation between customer service and customer experience, indicating that exceptional customer service is key to enhancing the overall digital experience for customers, as evidenced in our findings. Furthermore, a comparative analysis by Verhoef et al. (2021) on digital transformation across various industries showed that the retail sector benefits significantly from digital transformation in terms of customer experience, underlining the broader applicability of our results.

Correspondingly, the study by Lee et al. (2018) validates the relationship between digital convenience and customer loyalty, suggesting that convenience in digital transactions directly impacts customer retention and satisfaction. Likewise, Parise et al. (2016) investigated digital marketing practices and revealed that effective personalization strategies lead to higher customer satisfaction levels, which is in line with our findings on the impact of personalization on customer experience. Research by Reinartz et al. (2019) on e-commerce platforms emphasized the critical role of digital customer service, finding that responsive and efficient customer service is a key driver of customer satisfaction and trust. The study by Edelman & Singer (2015) explored the impact of digital transformation on customer behavior, noting that digital innovations that enhance customer service significantly influence customer purchase decisions

Additionally, a study by Saarikko et al. (2020) on the digital transformation in the retail sector found that customers highly value the integration of digital technologies that offer personalized experiences, supporting the critical role of personalization in enhancing customer experience. Akram et al. (2021) indicated that these advanced technologies facilitate customized and engaging shopping experiences, which are progressively crucial in captivating and maintaining customers. Moreover, incorporating big data analytics into retail operations has furnished retailers with a profound understanding of consumer behaviour, enabling the implementation of more focused marketing strategies and product offerings (Cakir et al., 2021; Akram et al., 2021).

5.2. Conclusion

This project aims to investigate the multifaceted impact of digital transformation on customer experience within the retail sector of the Kingdom of Saudi Arabia. By analyzing variables such as convenience, personalization,

customer service, and overall satisfaction, the project seeks to uncover the dynamics in shaping customer perceptions and experiences in a digitally evolving landscape. This study aims to provide empirical insights into how digital transformation initiatives can enhance customer experience, thereby guiding retailers in Saudi Arabia to strategize and implement effective digital practices that align with consumer expectations and contribute to improved customer satisfaction and loyalty. This study used a quantitative research approach to comprehensively investigate the analysis of statistical relationships between digital transformation tactics and customer experience results. This study used a descriptive research technique to impartially observe and depict the attributes of a topic without exerting any influence. The target population of this study encompassed individuals in the KSA who had interacted with digital retail platforms, spanning a diverse array of age groups, including those who engage with e-commerce websites, mobile shopping applications, and other digital technologies deployed by retail enterprises. The study encompassed 200 individuals who had interacted with diverse digital retail channels, including online shopping platforms, mobile commerce applications, and in-store digital encounters, such as augmented reality or digital payment systems. The study's data was gathered using a well-organized questionnaire to get detailed information about how customers in the retail sector of the KSA have dealt with digital change. The survey consisted of closed-ended questions, including Likert-scale items, multiple-choice queries, and rating scales, to assess aspects of customer experience, such as satisfaction, loyalty, perceived value, and the usability of digital platforms.

The survey was created using the Google Forms platform and distributed electronically via various social media platforms, email, and online forums, focusing on reaching customers in the KSA. The data analysis for this study was conducted utilizing SPSS and MS Excel, a comprehensive software designed for statistical analysis. This entailed importing the gathered data into SPSS and conducting

preliminary data cleansing to ensure precision and comprehensiveness. Descriptive statistics were employed to briefly summarize the characteristics and responses of the sample, offering a comprehensive view of the data distribution. Regression analysis can be employed to identify factors that predict customer satisfaction and loyalty in digital retailing. This analytical methodology facilitated the detection of noteworthy patterns. It provided valuable insights into the influence of digital transformation on consumer behaviour and perceptions within the retail sector of the KSA. The study on the impact of digital transformation on customer experience in Saudi Arabia's retail sector reveals critical insights. Key findings indicate that digital transformation elements—specifically convenience, personalization, customer service, and overall satisfaction—are significantly linked to enhanced customer experience. The research highlights customer service as the most influential factor, suggesting that superior service quality is essential for positive customer experiences. Furthermore, a strong correlation between personalization and satisfaction underscores the importance of tailored digital interactions. These outcomes suggest that retailers prioritize comprehensive digital strategies focusing on customer service excellence and personalization to drive customer satisfaction and competitive advantage. A significant limitation of this research is its limited regional scope. Focusing only on the Kingdom of Saudi Arabia offers interesting perspectives on the digital revolution taking place in the local retail sector. However, it also restricts the applicability of the results to other areas characterized by distinct cultural, economic, and technical contexts. Future studies should investigate the potential effects of new technologies, such as artificial intelligence, blockchain, and the Internet of Things (IoT), on customer experience. These technologies are quickly becoming essential elements of digital transformation initiatives, and their unique contributions to enhancing consumer experience in the retail sector and other areas need more examination

5.3. Limitations and Future Scope of Research

A significant limitation of this research is its limited regional scope. Focusing only on the Kingdom of Saudi Arabia offers interesting perspectives on the digital revolution in the local retail sector. However, it also restricts the applicability of the results to other areas characterized by distinct cultural, economic, and technical contexts. Subsequent studies might expand this analysis to a wider range of geographical locations, enabling a comparative examination that could reveal location-specific factors influencing customer experience within the digital transformation framework. Another limitation is that the research heavily relies on quantitative approaches, including Pearson correlation and regression analysis. Although these methodologies provide strong insights into the linkages and predictive capabilities of the variables analyzed, they may not completely capture the subtle ways in which consumers encounter and interpret digital transformation initiatives. Qualitative research methods, such as interviews or focus groups, may provide more profound understanding of the customer journey by revealing the subjective experiences, perceptions, and expectations that influence customer experience in the digital era.

The factors studied in this research are broad but not completely encompassing. The digital transformation covers several variables, including technology innovation, data security, and omnichannel initiatives. Subsequent studies can broaden the range of variables considered, including these and other pertinent parameters. This might lead to the discovery of more knowledge on the interplay between different elements of digital transformation and their impact on customer experience. The cross-sectional approach of the research has a constraint since it only provides a picture of the influence of digital transformation on customer experience at one specific moment in time. The ever-changing nature of digital

transformation, characterized by continuous technological breakthroughs and evolving customer expectations, implies that the observed linkages and consequences may change over time. Longitudinal studies have the potential to provide a more comprehensive comprehension of these evolving dynamics by monitoring the lasting impacts of digital transformation on customer experience.

Moreover, the existing study mostly focuses on the retail sector, which, while important, is only one of several industries experiencing digital revolution. Subsequent research endeavors might investigate the influence of digital transformation on customer experience in several sectors, including healthcare, banking, and education. Conducting cross-industry analysis may uncover universal principles of digital transformation, as well as industry-specific methods that successfully improve consumer experience. Future study should investigate the potential effects of new technologies, such as artificial intelligence, blockchain, and the Internet of Things (IoT), on customer experience. These technologies are quickly becoming essential elements of digital transformation initiatives, and their unique contributions to enhancing consumer experience in the retail sector and other areas need more examination. Future studies might investigate the moderating and mediating factors that may impact the links between digital transformation activities and customer experience, in addition to researching new variables and technologies. Customer demographics, technical knowledge, and privacy concerns are influential factors that shape consumers' perceptions and effects of digital transformation activities. As the process of digital transformation advances, it is crucial for future research to stay up-to-date with the fast-paced technical advancements and developing trends. Research that investigates emerging technologies like virtual reality, augmented reality, and tailored AI-driven experiences might provide valuable insights into the future of consumer experience in the digital domain.

References

- Agredo-Delgado, V., Ruiz, P. H., & Correa-Madriral, O. (2023). Human-Computer Interaction: 8th Iberoamerican Workshop, HCI-COLLAB 2022, Havana, Cuba, October 13–15, 2022, Revised Selected Papers. In Google Books. Springer Nature.
[https://books.google.com/books?hl=en&lr=&id=NMGoEAAAQBAJ&oi=fnd&pg=PA201&dq=Augmented+Reality+\(AR\)+and+Virtual+Reality+\(VR\)+Customer+Experience&ots=0FpcOUL8F1&sig=bnZ0O_Pvg_cnymFiaQ38roHt-cQ](https://books.google.com/books?hl=en&lr=&id=NMGoEAAAQBAJ&oi=fnd&pg=PA201&dq=Augmented+Reality+(AR)+and+Virtual+Reality+(VR)+Customer+Experience&ots=0FpcOUL8F1&sig=bnZ0O_Pvg_cnymFiaQ38roHt-cQ)
- Aithal, A., & Aithal, P. (2020). Munich Personal RePEc Archive Development and Validation of Survey Questionnaire Experimental Data -A Systematical Review-based Statistical Approach Development and Validation of Survey Questionnaire & Experimental Data -A Systematical Review-based Statistical Approach. https://mpra.ub.uni-muenchen.de/103996/1/MPRA_paper_103996.pdf
- Akram, U., Fülöp, M. T., Tiron-Tudor, A., Topor, D. I., & Căpușneanu, S. (2021). Impact of Digitalization on Customers' Well-Being in the Pandemic Period: Challenges and Opportunities for the Retail Industry. *International Journal of Environmental Research and Public Health*, 18(14), 7533. ncbi.
- Ameen, N., Tarhini, A., Reppel, A., & Anand, A. (2021). Customer Experiences in the Age of Artificial Intelligence. *Computers in Human Behavior*, 114(106548), 106548. NCBI.
- Arkkelin, D. (2014). Using SPSS to Understand Research and Data Analysis. Psychology Curricular Materials. Book, 1(1).

https://scholar.valpo.edu/cgi/viewcontent.cgi?article=1000&context=psych_oer

- Barbu, C. M., Florea, D. L., Dabija, D.-C., & Barbu, M. C. R. (2021). Customer Experience in Fintech. *Journal of Theoretical and Applied Electronic Commerce Research*, 16(5), 1415–1433. <https://doi.org/10.3390/jtaer16050080>
- Bawack, R. E., Wamba, S. F., & Carillo, K. D. A. (2021). Exploring the role of personality, trust, and privacy in customer experience performance during voice shopping: Evidence from SEM and fuzzy set qualitative comparative analysis. *International Journal of Information Management*, 58, 102309. <https://doi.org/10.1016/j.ijinfomgt.2021.102309>
- Becker, L., & Jaakkola, E. (2020). Customer experience: Fundamental Premises and Implications for Research. *Journal of the Academy of Marketing Science*, 48(4), 630–648. Springer. <https://link.springer.com/article/10.1007/s11747-019-00718-x>
- Bhatt, S., Giri Gundu Hallur, Obaid, A. J., Oudah, A. Y., Karrar Hatif Mohmmmed, & Haydar Abdulameer Marhoon. (2023). Impact of 5G on the digital marketing industry: Study of selected use cases. *Nucleation and Atmospheric Aerosols*. <https://doi.org/10.1063/5.0170730>
- Blümel, J. H., & Jha, G. (2023). Designing a conversational AI agent: Framework combining customer experience management, personalization, and AI in service techniques. In www.repository.cam.ac.uk. <https://www.repository.cam.ac.uk/items/8a200a1c-3e67-46a8-bf06-5b498b798b21>
- Bodemer, O. (2023, August 23). Transforming the Insurance Industry with Blockchain and Smart Contracts: Enhancing Efficiency, Transparency, and Trust. *Www.techrxiv.org*. <https://doi.org/10.36227/techrxiv.24006237.v1>

- Cakir, G., Iftikhar, R., Bielozorov, A., Pourzolfaghar, Z., & Helfert, M. (2021). Omnichannel retailing: Digital transformation of a medium-sized retailer. *Journal of Information Technology Teaching Cases*, 11(2), 204388692095980. <https://doi.org/10.1177/2043886920959803>
- Calza, F., Sorrentino, A., & Tutore, I. (2023). Combining corporate environmental sustainability and customer experience management to build an integrated model for decision-making. *Management Decision*, 61(13). <https://doi.org/10.1108/md-05-2022-0613>
- Chanias, S., Myers, M. D., & Hess, T. (2019). Digital transformation strategy making in pre-digital organizations: The case of a financial services provider. *The Journal of Strategic Information Systems*, 28(1), 17–33. <https://doi.org/10.1016/j.jsis.2018.11.003>
- Chen, C.-L., Lin, Y.-C., Chen, W.-H., Chao, C.-F., & Pandia, H. (2021). Role of Government to Enhance Digital Transformation in Small Service Business. *Sustainability*, 13(3), 1028. <https://doi.org/10.3390/su13031028>
- Chin, H., Marasini, D. P., & Lee, D. (2022). Digital transformation trends in service industries. *Service Business*. <https://doi.org/10.1007/s11628-022-00516-6>
- Chylinski, M., Heller, J., Hilken, T., Keeling, D. I., Mahr, D., & de Ruyter, K. (2020). Augmented reality marketing: A technology-enabled approach to situated customer experience. *Australasian Marketing Journal (AMJ)*, 28(4).
- Colorafi, K. J., & Evans, B. (2016). Qualitative Descriptive Methods in Health Science Research. *HERD: Health Environments Research & Design Journal*, 9(4), 16–25. <https://doi.org/10.1177/1937586715614171>
- Daniel, E. (2016). The Usefulness of Qualitative and Quantitative Approaches and Methods in Researching Problem-Solving Ability in Science Education Curriculum. In *Journal of Education and Practice* (Vol. 7, Issue 15, pp. 91–100). <https://files.eric.ed.gov/fulltext/EJ1103224.pdf>

- Dannenberg, P., Fuchs, M., Riedler, T., & Wiedemann, C. (2020). Digital Transition by COVID-19 Pandemic? The German Food Online Retail. *Tijdschrift Voor Economische En Sociale Geografie*, 111(3), 543–560.
- De Keyser, A., Verleye, K., Lemon, K. N., Keiningham, T. L., & Klaus, P. (2020). Moving the Customer Experience Field Forward: Introducing the Touchpoints, Context, Qualities (TCQ) Nomenclature. *Journal of Service Research*, 23(4), 109467052092839. <https://doi.org/10.1177/1094670520928390>
- Denis, D. J. (2018). *SPSS Data Analysis for Univariate, Bivariate, and Multivariate Statistics*. In Google Books. John Wiley & Sons. https://books.google.com/books?hl=en&lr=&id=MjVmDwAAQBAJ&oi=fnd&pg=PA1&dq=quantitative+data+analysis+with+spss&ots=qqnkUDmcVI&sig=a3nOxfn53gorHW2fuZ2JI_w57n0
- Deslonde, V., & Becerra, M. (2018). The Technology Acceptance Model (TAM): Exploring School Counselors' Acceptance and Use of Naviance. *The Professional Counselor*, 8(4), 369–382. <https://doi.org/10.15241/vd.8.4.369>
- Di Vaio, A., Palladino, R., Hassan, R., & Escobar, O. (2020). Artificial Intelligence and Business Models in the Sustainable Development Goals perspective: a Systematic Literature Review. *Journal of Business Research*, 121(1), 283–314. <https://doi.org/10.1016/j.jbusres.2020.08.019>
- Dieck, M. C. T., & Han, D. D. (2021). The Role of Immersive Technology in Customer Experience Management. *Journal of Marketing Theory and Practice*, 30(1), 1–12. <https://doi.org/10.1080/10696679.2021.1891939>
- Dimitrova, V. (2021). The effect of the COVID-19 pandemic on Digital Transformation in retailing: a Master's thesis. http://essay.utwente.nl/88025/1/Dimitrova_MA_BMS.pdf

- Doyle, L., McCabe, C., Keogh, B., Brady, A., & McCann, M. (2020). An Overview of the Qualitative Descriptive Design within Nursing Research. *Journal of Research in Nursing*, 25(5), 174498711988023. NCBI. <https://doi.org/10.1177/1744987119880234>
- Durach, C. F., Blesik, T., Düring, M., & Bick, M. (2020). Blockchain Applications in Supply Chain Transactions. *Journal of Business Logistics*. <https://doi.org/10.1111/jbl.12238>
- Felix, A., & Rembulan, G. D. (2023). Analysis of Key Factors for Improved Customer Experience, Engagement, and Loyalty in the E-Commerce Industry in Indonesia. *Aptisi Transactions on Technopreneurship (ATT)*, 5(2sp), 196–208. <https://doi.org/10.34306/att.v5i2sp.350>
- Fisk, R. P., Gallan, A. S., Joubert, A. M., Beekhuyzen, J., Cheung, L., & Russell-Bennett, R. (2022). Healing the Digital Divide With Digital Inclusion: Enabling Human Capabilities. *Journal of Service Research*, 109467052211401. <https://doi.org/10.1177/10946705221140148>
- Flavián, C., & Orús, C. (2018). The impact of virtual, augmented and mixed reality technologies on the customer experience. *Journal of Business Research*, 100(100), 547–560. Sciencedirect. <https://doi.org/10.1016/j.jbusres.2018.10.050>
- Foroudi, P., Gupta, S., Sivarajah, U., & Broderick, A. (2018). Investigating the effects of smart technology on customer dynamics and customer experience. *Computers in Human Behavior*, 80(1), 271–282. Sciencedirect. <https://doi.org/10.1016/j.chb.2017.11.014>
- Gaur, L., Afaq, A., Solanki, A., Singh, G., Sharma, S., Jhanjhi, N. Z., My, H. T., & Le, D.-N. (2021). Capitalizing on big data and revolutionary 5G technology: Extracting and visualizing ratings and reviews of global chain hotels.

- Computers & Electrical Engineering, 95, 107374.
<https://doi.org/10.1016/j.compeleceng.2021.107374>
- Ghavidast Kouhpayeh, Mahboubeh, Doshman Ziari, Esfandiar, & Roustia, A. (2023). Using the structural equation modeling method in building customer trust in the blockchain-based marketing ecosystem. *International Journal of Nonlinear Analysis and Applications*, -.
<https://doi.org/10.22075/ijnaa.2023.30450.4406>
- Gomez, H., Navarro, V. G., Badenes, R. O., & Quilis, J. A. L. (2020). Customer relationship management: digital transformation and sustainable business model innovation. *Economic Research-Ekonomska Istraživanja*, 33(1), 2733–2750. Tandfonline. <https://doi.org/10.1080/1331677x.2019.1676283>
- Gopal, G., Suter-Crazzolara, C., Toldo, L., & Eberhardt, W. (2019). Digital transformation in healthcare – architectures of present and future information technologies. *Clinical Chemistry and Laboratory Medicine (CCLM)*, 57(3), 328–335. <https://doi.org/10.1515/cclm-2018-0658>
- Hänninen, M., Smedlund, A., & Mitronen, L. (2018). Digitalization in retailing: multi-sided platforms as drivers of industry transformation. *Baltic Journal of Management*, 13(2), 152–168. <https://doi.org/10.1108/bjm-04-2017-0109>
- Haudi, H. (2024). THE IMPACT OF DIGITAL TRANSFORMATION ON CONSUMER BEHAVIOR AND MARKETING STRATEGIES. *INTERNATIONAL JOURNAL of ECONOMIC LITERATURE*, 2(1), 167–179. <https://injole.joln.org/index.php/ijle/article/view/59>
- Hermes, S., Riasanow, T., Clemons, E. K., Böhm, M., & Krcmar, H. (2020). The digital transformation of the healthcare industry: exploring the rise of emerging platform ecosystems and their influence on the role of patients. *Business Research*, 13(3), 1033–1069. <https://doi.org/10.1007/s40685-020-00125-x>

- Hoffman, D. L., & Novak, T. P. (2018). Consumer and Object Experience in the Internet of Things: An Assemblage Theory Approach. *Journal of Consumer Research*, 44(6), 1178–1204. <https://doi.org/10.1093/jcr/ucx105>
- Holmlund, M., Vaerenbergh, Y. V., Ciuchita, R., Ravald, A., Sarantopoulos, P., Ordenes, F. V., & Zaki, M. (2020). Customer Experience Management in the Age of Big Data analytics: a Strategic Framework. *Journal of Business Research*, 116(1), 356–365. *Sciencedirect*. <https://doi.org/10.1016/j.jbusres.2020.01.022>
- Hoyer, W. D., Kroschke, M., Schmitt, B., Kraume, K., & Shankar, V. (2020). Transforming the Customer Experience Through New Technologies. *Journal of Interactive Marketing*, 51(1), 57–71.
- Hoyer, W. D., Kroschke, M., Schmitt, B., Kraume, K., & Shankar, V. (2020). Transforming the Customer Experience Through New Technologies. *Journal of Interactive Marketing*, 51(1), 57–71.
- Hu, B. (2024). Digital Transformation of Retail Financial Services Marketing in the Information Era: Opportunities, Risks and Future. *Highlights in Business, Economics and Management*, 24, 2587–2594. <https://doi.org/10.54097/ajza0373>
- Jami Pour, M., Hosseinzadeh, M., & Mansouri, N. S. (2021). Challenges of customer experience management in social commerce: an application of social network analysis. *Internet Research*, ahead-of-print(ahead-of-print). <https://doi.org/10.1108/intr-01-2021-0076>
- Jang, H., & Han, S. H. (2022). User experience framework for understanding user experience in blockchain services. *International Journal of Human-Computer Studies*, 158, 102733. <https://doi.org/10.1016/j.ijhcs.2021.102733>

- Jocevski, M. (2020). Blurring the Lines between Physical and Digital Spaces: Business Model Innovation in Retailing. *California Management Review*, 63(1), 99–117. <https://doi.org/10.1177/0008125620953639>
- Kamal, S. A., Shafiq, M., & Kakria, P. (2020). Investigating acceptance of telemedicine services through an extended technology acceptance model (TAM). *Technology in Society*, 60(1), 101212. <https://doi.org/10.1016/j.techsoc.2019.101212>
- Kasemsarn, K., Harrison, D., & Nickpour, F. (2023). Applying Inclusive Design and Digital Storytelling to Facilitate Cultural Tourism: A Review and Initial Framework. *Heritage*, 6(2), 1411–1428. <https://doi.org/10.3390/heritage6020077>
- Kaushal, V., & Yadav, R. (2022). Learning successful implementation of Chatbots in businesses from B2B customer experience perspective. *Concurrency and Computation: Practice and Experience*. <https://doi.org/10.1002/cpe.7450>
- Kraus, S., Durst, S., Ferreira, J. J., Veiga, P., Kailer, N., & Weinmann, A. (2022). Digital transformation in business and management research: An overview of the current status quo. *International Journal of Information Management*, 63(4), 102466. Sciencedirect.
- Kraus, S., Jones, P., Kailer, N., Weinmann, A., Banegas, N. C., & Tierno, N. R. (2021). Digital Transformation: an Overview of the Current State of the Art of Research. *SAGE Open*, 11(3), 215824402110475. Sagepub. <https://journals.sagepub.com/doi/10.1177/21582440211047576>
- Kushwaha, A. K., Kumar, P., & Kar, A. K. (2021). What impacts customer experience for B2B enterprises on using AI-enabled chatbots? Insights from Big data analytics. *Industrial Marketing Management*, 98(1), 207–221. <https://doi.org/10.1016/j.indmarman.2021.08.011>

- Lambillotte, L., Magrofuoco, N., Poncin, I., & Vanderdonckt, J. (2022). Enhancing playful customer experience with personalization. *Journal of Retailing and Consumer Services*, 68, 103017. <https://doi.org/10.1016/j.jretconser.2022.103017>
- Lee, S. M., & Lee, D. (2020). "Untact": a new customer service strategy in the digital age. *Service Business*, 14(1), 1–22.
- Lee, W.-J. (2020). Use of Immersive Virtual Technology in Consumer Retailing and Its Effects to Consumer. *Journal of Distribution Science*, 18(2), 5–15. <https://doi.org/10.15722/jds.18.2.202002.5>
- Li, F. (2020). The Digital Transformation of Business Models in the Creative industries: a Holistic Framework and Emerging Trends. *Technovation*, 92-93(2), 102012. <https://doi.org/10.1016/j.technovation.2017.12.004>
- Lu, M., Cui, T., Huang, Z., Zhao, H., Li, T., Wang, K., Lu, Huang, & Zhao, L. (2021). A Systematic Review of Questionnaire-Based Quantitative Research on MOOCs A Systematic Review of Questionnaire-Based Quantitative Research on MOOCs. *International Review of Research in Open and Distributed Learning*, 22. <https://files.eric.ed.gov/fulltext/EJ1298019.pdf>
- Mari, A., Mandelli, A., & Algesheimer, R. (2024). Empathic voice assistants: Enhancing consumer responses in voice commerce. *Journal of Business Research*, 175, 114566. <https://doi.org/10.1016/j.jbusres.2024.114566>
- Martasari, G. W. (2023). Impact of Industrial Technology 4.0 In Improving Service Quality and Customer Experience on E-Commerce Platforms: Literature Review. *International Journal of Social Service and Research*, 3(6), 1427–1435. <https://doi.org/10.46799/ijssr.v3i6.407>
- Martin, K. D., & Palmatier, R. W. (2020). Data Privacy in Retail: Navigating Tensions and Directing Future Research. *Journal of Retailing*, 96(4). <https://doi.org/10.1016/j.jretai.2020.10.002>

- Martin, K. D., Kim, J. J., Palmatier, R. W., Steinhoff, L., Stewart, D. W., Walker, B. A., Wang, Y., & Weaven, S. K. (2020). Data Privacy in Retail. *Journal of Retailing*, 96(4). <https://doi.org/10.1016/j.jretai.2020.08.003>
- Masoud, R., & Basahel, S. (2023). The Effects of Digital Transformation on Firm Performance: The Role of Customer Experience and IT Innovation. *Digital*, 3(2), 109–126. <https://doi.org/10.3390/digital3020008>
- Matarazzo, M., Penco, L., Profumo, G., & Quaglia, R. (2021). Digital transformation and customer value creation in Made in Italy SMEs: A dynamic capabilities perspective. *Journal of Business Research*, 123(123), 642–656. <https://doi.org/10.1016/j.jbusres.2020.10.033>
- Melović, B., Jocović, M., Dabić, M., Vulić, T. B., & Dudic, B. (2020). The impact of digital transformation and digital marketing on the brand promotion, positioning and electronic business in Montenegro. *Technology in Society*, 63(1), 101425. <https://doi.org/10.1016/j.techsoc.2020.101425>
- Micu, A., Capatina, A., Cristea, D. S., Munteanu, D., Micu, A.-E., & Sarpe, D. A. (2022). Assessing an on-site customer profiling and hyper-personalization system prototype based on a deep learning approach. *Technological Forecasting and Social Change*, 174, 121289. <https://doi.org/10.1016/j.techfore.2021.121289>
- Miller, J. (2024). Effect of Digital Transformation on Supply Chain Resilience in the United States. *Journal of Strategic Management*, 9(1), 40–50. <https://doi.org/10.47672/jsm.1870>
- Morakanyane, R., Grace, A., & O'Reilly, P. (2017). Conceptualizing Digital Transformation in Business Organizations: A Systematic Review of Literature. *BLED 2017 Proceedings*. <https://aisel.aisnet.org/bled2017/21/>

- Mostaghel, R., & Chirumalla, K. (2021). Role of customers in circular business models. *Journal of Business Research*, 127, 35–44. sciencedirect. <https://doi.org/10.1016/j.jbusres.2020.12.053>
- Mostaghel, R., Oghazi, P., Parida, V., & Sohrabpour, V. (2022). Digitalization driven retail business model innovation: Evaluation of past and avenues for future research trends. *Journal of Business Research*, 146, 134–145. sciencedirect. <https://doi.org/10.1016/j.jbusres.2022.03.072>
- Moussaddak, Y. (2024). The Impact of AI on Personalization and Customer Experience in Marketing. [Www.theseus.fi. https://www.theseus.fi/handle/10024/818468](https://www.theseus.fi/handle/10024/818468)
- Mugge, P., Abbu, H., Michaelis, T. L., Kwiatkowski, A., & Gudergan, G. (2020). Patterns of Digitization. *Research-Technology Management*, 63(2), 27–35. <https://doi.org/10.1080/08956308.2020.1707003>
- Mweshi, G. K., & Sakyi, K. (2020). Application of sampling methods for the research design. *Archives of Business Research*, 8(11), 180–193. <https://doi.org/10.14738/abr.811.9042>
- Nadal, C., Sas, C., & Doherty, G. (2020). Technology Acceptance in Mobile Health: Scoping Review of Definitions, Models, and Measurement. *Journal of Medical Internet Research*, 22(7), e17256. <https://doi.org/10.2196/17256>
- Nadkarni, S., & Prügl, R. (2020). Digital transformation: a review, synthesis and opportunities for future research. *Management Review Quarterly*, 71(1), 233–341. Springer. <https://link.springer.com/article/10.1007/s11301-020-00185-7>
- Nassaji, H. (2015). Qualitative and descriptive research: Data type versus data analysis. *Language Teaching Research*, 19(2), 129–132. ResearchGate. <https://doi.org/10.1177/1362168815572747>
- Nishant, R., Kennedy, M., & Corbett, J. (2020). Artificial intelligence for sustainability: Challenges, opportunities, and a research agenda. *International*

- Journal of Information Management, 53(53), 102104.
<https://doi.org/10.1016/j.ijinfomgt.2020.102104>
- Nöjd, S., Trischler, J. W., Otterbring, T., Andersson, P. K., & Wästlund, E. (2020). Bridging the valuescape with digital technology: A mixed methods study on customers' value creation process in the physical retail space. *Journal of Retailing and Consumer Services*, 56, 102161.
<https://doi.org/10.1016/j.jretconser.2020.102161>
- Orús, C., Ibáñez-Sánchez, S., & Flavián, C. (2021). Enhancing the customer experience with virtual and augmented reality: The impact of content and device type. *International Journal of Hospitality Management*, 98, 103019.
<https://doi.org/10.1016/j.ijhm.2021.103019>
- Pace, D. (2021). PROBABILITY AND NON-PROBABILITY SAMPLING -AN ENTRY POINT FOR UNDERGRADUATE RESEARCHERS. *International Journal of Quantitative and Qualitative Research Methods*, 9(2), 2021–2056.
<https://www.eajournals.org/wp-content/uploads/Probability-and-Non-Probability-Sampling-an-entry-point-for-undergraduate-researchers.pdf>
- Pangarkar, A., Arora, V., & Shukla, Y. (2022). Exploring phygital omnichannel luxury retailing for immersive customer experience: The role of rapport and social engagement. *Journal of Retailing and Consumer Services*, 68, 103001.
<https://doi.org/10.1016/j.jretconser.2022.103001>
- Pappas, A., Fumagalli, E., Rouziou, M., & Bolander, W. (2023). More than Machines: The Role of the Future Retail Salesperson in Enhancing the Customer Experience. *Journal of Retailing*, 99(4).
<https://doi.org/10.1016/j.jretai.2023.10.004>
- Parise, S., Guinan, P. J., & Kafka, R. (2016). Solving the crisis of immediacy: How digital technology can transform the customer experience. *Business Horizons*, 59(4), 411–420.

- Pecorari, P. M., & Lima, C. R. C. (2021). Correlation of customer experience with the acceptance of product-service systems and circular economy. *Journal of Cleaner Production*, 281, 125275. <https://doi.org/10.1016/j.jclepro.2020.125275>
- Pedro Cuesta Valiño, Gutiérrez-Rodríguez, P., García-Henche, B., & Estela Núñez Barriopedro. (2023). The impact of corporate social responsibility on consumer brand engagement and purchase intention at fashion retailers. *Psychology & Marketing*. <https://doi.org/10.1002/mar.21940>
- Pfeifer, P., Hilken, T., Heller, J., Alimamy, S., & Di Palma, R. (2023). More than meets the eye: In-store retail experiences with augmented reality smart glasses. *Computers in Human Behavior*, 107816. <https://doi.org/10.1016/j.chb.2023.107816>
- Quinones, M., Díaz-Martín, A. M., & Gómez-Suárez, M. (2023). Retail technologies that enhance the customer experience: a practitioner-centred approach. *Humanities and Social Sciences Communications*, 10(1), 1–8. <https://doi.org/10.1057/s41599-023-02023-z>
- Rafique, H., Shamim, A., & Anwar, F. (2020). Investigating acceptance of mobile library application with extended technology acceptance model (TAM). *Computers & Education*, 145(2), 103732. <https://doi.org/10.1016/j.compedu.2019.103732>
- Rahman, A., & Muktadir, Md. Golam. (2021). SPSS: An Imperative Quantitative Data Analysis Tool for Social Science Research. *International Journal of Research and Innovation in Social Science*, 05(10), 300–302. Researchgate. <https://doi.org/10.47772/ijriss.2021.51012>
- Rahman, Md. M., Tabash, M. I., Salamzadeh, A., Abduli, S., & Rahaman, Md. S. (2022). Sampling Techniques (Probability) for Quantitative Social Science

- Researchers: A Conceptual Guidelines with Examples. *SEEU Review*, 17(1), 42–51. <https://sciendo.com/article/10.2478/seeur-2022-0023>
- Rane, N. (2023, October 13). Enhancing Customer Loyalty through Artificial Intelligence (AI), Internet of Things (IoT), and Big Data Technologies: Improving Customer Satisfaction, Engagement, Relationship, and Experience. *Social Science Research Network*. <https://doi.org/10.2139/ssrn.4616051>
- Rather, R. A. (2019). Customer experience and engagement in tourism destinations: the experiential marketing perspective. *Journal of Travel & Tourism Marketing*, 37(1), 15–32.
- Reinartz, W., Wiegand, N., & Imschloss, M. (2019). The Impact of Digital Transformation on the Retailing Value Chain. *International Journal of Research in Marketing*, 36(3), 350–366. Science Direct. <https://doi.org/10.1016/j.ijresmar.2018.12.002>
- Reinartz, W., Wiegand, N., & Imschloss, M. (2019). The Impact of Digital Transformation on the Retailing Value Chain. *International Journal of Research in Marketing*, 36(3), 350–366. Science Direct. <https://www.sciencedirect.com/science/article/pii/S0167811618300739>
- Romano, B., Sands, S., & Pallant, J. I. (2020). Augmented reality and the customer journey: An exploratory study. *Australasian Marketing Journal (AMJ)*, 29(4). <https://doi.org/10.1016/j.ausmj.2020.06.010>
- Roy, S. K., Balaji, M. S., Sadeque, S., Nguyen, B., & Melewar, T. C. (2017). Constituents and consequences of smart customer experience in retailing. *Technological Forecasting and Social Change*, 124, 257–270. <https://doi.org/10.1016/j.techfore.2016.09.022>
- Saarikko, T., Westergren, U. H., & Blomquist, T. (2020). Digital transformation: Five Recommendations for the Digitally Conscious Firm. *Business Horizons*,

- 63(6), 825–839. Sciencedirect.
<https://www.sciencedirect.com/science/article/pii/S0007681320300975>
- Sagnier, C., Loup-Escande, E., Lourdeaux, D., Thouvenin, I., & Valléry, G. (2020). User Acceptance of Virtual Reality: An Extended Technology Acceptance Model. *International Journal of Human–Computer Interaction*, 36(11), 1–15.
<https://doi.org/10.1080/10447318.2019.1708612>
- Shankar, V., Douglass, T., Hennessey, J., Kalyanam, K., Setia, P., Golmohammadi, A., Tirunillai, S., Bull, J. S., & Waddoups, R. (2020). How Technology Is Changing Retail. *Journal of Retailing*, 97(1), 13–27.
- Shehadeh, M., Atta, A., Barrak, T., Lutfi, A., & Alrawad, M. (2024). Digital transformation: An empirical analysis of operational efficiency, customer experience, and competitive advantage in Jordanian Islamic banks. *Uncertain Supply Chain Management*, 12(2), 695–708.
<http://growingscience.com/beta/uscm/6720-digital-transformation-an-empirical-analysis-of-operational-efficiency-customer-experience-and-competitive-advantage-in-jordanian-islamic-banks.html>
- Shin, D.-H. (2017). Conceptualizing and measuring quality of experience of the internet of things: Exploring how quality is perceived by users. *Information & Management*, 54(8), 998–1011. <https://doi.org/10.1016/j.im.2017.02.006>
- Soma Amol Dhaigude, & Mohan, B. C. (2023). Customer experience in social commerce: A systematic literature review and research agenda. *International Journal of Consumer Studies*. <https://doi.org/10.1111/ijcs.12954>
- Stahl, B. C. (2021). Artificial Intelligence for a Better Future : An Ecosystem Perspective on the Ethics of AI and Emerging Digital Technologies. In library.oapen.org. Springer Nature.
<https://library.oapen.org/handle/20.500.12657/48228>

- Sugiharto, B. H. (2024). The Role of E-commerce for MSMEs as a Digital Marketing Strategy in Facing Industrial Revolution 4.0. *Management Studies and Business Journal (PRODUCTIVITY)*, 1(1), 99–107. <https://doi.org/10.62207/80ndq458>
- Taherdoost, H. (2022). Designing a Questionnaire for a Research Paper: A Comprehensive Guide to Design and Develop an Effective Questionnaire. *Asian Journal of Managerial Science*, 11(1), 8–16. <https://doi.org/10.51983/ajms-2022.11.1.3087>
- Taneja, S., Shukla, R. P., & Singh, A. (2024). Embracing Digital Transformation: A Paradigm Shift in Business Operations and Strategies. *Www.igi-Global.com; IGI Global*. <https://www.igi-global.com/chapter/embracing-digital-transformation/341244>
- Tekic, Z., & Koroteev, D. (2019). From disruptively digital to proudly analog: A holistic typology of digital transformation strategies. *Business Horizons*, 62(6). <https://doi.org/10.1016/j.bushor.2019.07.002>
- Terenggana, C. A. (2024). The Influence of Artificial Intelligence on Customer Experience (Study of Maxim Users in Surabaya, East Java). *Economics Studies and Banking Journal (DEMAND)*, 1(1), 37–45. <https://doi.org/10.62207/jhctec97>
- Towers, N., Wang, S., Cheah, J.-H., Lim, W. M., Kumar, S., & Lim, X. J. (2024). Evolution and trends in retailing: Insights from International Journal of Retail & Distribution Management. *International Journal of Retail and Distribution Management*. <https://doi.org/10.1108/IJRDM-10-2022-0377>
- Treiblmaier, H., & Önder, I. (2018). The Impact of Blockchain on the Tourism Industry: A Theory-Based Research Framework. *Business Transformation through Blockchain*, 3–21. https://doi.org/10.1007/978-3-319-99058-3_1

- Vaska, S., Massaro, M., Bagarotto, E. M., & Dal Mas, F. (2021). The Digital Transformation of Business Model Innovation: A Structured Literature Review. *Frontiers in Psychology*, 11. frontiersin. <https://www.frontiersin.org/articles/10.3389/fpsyg.2020.539363/full>
- Veldhoven, Z. V., & Vanthienen, J. (2021). Digital transformation as an interaction-driven perspective between business, society, and technology. *Electronic Markets*, 32(32). <https://doi.org/10.1007/s12525-021-00464-5>
- Verhoef, P. C., Broekhuizen, T., Bart, Y., Bhattacharya, A., Qi Dong, J., Fabian, N., & Haenlein, M. (2021). Digital transformation: a Multidisciplinary Reflection and Research Agenda. *Journal of Business Research*, 122(122), 889–901. Sciencedirect. <https://www.sciencedirect.com/science/article/pii/S0148296319305478>
- Verhoef, P. C., Broekhuizen, T., Bart, Y., Bhattacharya, A., Qi Dong, J., Fabian, N., & Haenlein, M. (2021). Digital transformation: a Multidisciplinary Reflection and Research Agenda. *Journal of Business Research*, 122(122), 889–901. Sciencedirect. <https://doi.org/10.1016/j.jbusres.2019.09.022>
- Vikström, M., Tuunanen, T., & Hönigsberg, S. (2024). Recombining Operant Resources : Integrating Service Design and Service Engineering to Improve Service Innovation. *Proceedings of the Annual Hawaii International Conference on System Sciences*. <https://jyx.jyu.fi/handle/123456789/93149>
- von Briel, F. (2018). The future of omnichannel retail: A four-stage Delphi study. *Technological Forecasting and Social Change*, 132, 217–229. <https://doi.org/10.1016/j.techfore.2018.02.004>
- Wang, P., Li, K., Du, Q., & Wang, J. (2024). Customer experience in AI-enabled products: Scale development and validation. *Journal of Retailing and Consumer Services*, 76, 103578. <https://doi.org/10.1016/j.jretconser.2023.103578>

- Wang, Z., Li, M., Lu, J., & Cheng, X. (2022). Business Innovation based on artificial intelligence and Blockchain technology. *Information Processing & Management*, 59(1), 102759. <https://doi.org/10.1016/j.ipm.2021.102759>
- Whittlestone, J., Nyrop, R., Alexandrova, A., Dihal, K., & Cave, S. (2019). Ethical and societal implications of algorithms, data, and artificial intelligence: a roadmap for research B. <https://www.nuffieldfoundation.org/wp-content/uploads/2019/02/Ethical-and-Societal-Implications-of-Data-and-AI-report-Nuffield-Foundat.pdf>
- Witkowski, K. (2017). Internet of Things, Big Data, Industry 4.0 – Innovative Solutions in Logistics and Supply Chains Management. *Procedia Engineering*, 182, 763–769. <https://doi.org/10.1016/j.proeng.2017.03.197>
- Xiong, X. (2022). Critical Review of Quantitative and Qualitative Research. <https://www.atlantis-press.com/article/125975791.pdf>
- Yang, H., Song, H., Xia, L., & Yang, A. (2024). Understanding the consequences of robotic interaction quality and outcome quality: A three-phased affordance theory-based approach. *Journal of Hospitality Marketing & Management*, 1–21. <https://doi.org/10.1080/19368623.2024.2308531>
- Yigitcanlar, T., & Cugurullo, F. (2020). The Sustainability of Artificial Intelligence: An Urbanistic Viewpoint from the Lens of Smart and Sustainable Cities. *Sustainability*, 12(20), 8548. <https://doi.org/10.3390/su12208548>
- Yockey, R. D. (2016). *SPSS Demystified: A Simple Guide and Reference*. In Google Books. Routledge. <https://books.google.com/books?hl=en&lr=&id=4wk3DAAQBAJ&oi=fnd&pg=PP1&dq=quantitative+data+analysis+with+spss&ots=Jg247ifqIJ&sig=vzadk5K0Xx5NoANCbE4wieJpBjk>
- Zhao, X., Chen, Q., Zhang, H., Chen, P., & Chen, S. (2024). A study on the influencing factors of corporate digital transformation: empirical evidence

from Chinese listed companies. *Scientific Reports*, 14(1), 6243.
<https://doi.org/10.1038/s41598-024-56729-4>

Zierau, N., Hildebrand, C., Bergner, A., Busquet, F., Schmitt, A., & Marco Leimeister, J. (2022). Voice bots on the frontline: Voice-based interfaces enhance flow-like consumer experiences & boost service outcomes. *Journal of the Academy of Marketing Science*, 51, 823–842.
<https://doi.org/10.1007/s11747-022-00868-5>

APPENDIX – I

QUESTIONNAIRE

Topic: The Impact of Digital Transformation on Customer Experience in the Retail Industry in the Kingdom of Saudi Arabia

الموضوع: تأثير التحول الرقمي على تجربة العملاء في قطاع التجزئة في المملكة العربية السعودية

(Questionnaire)

Consent Statement

Dear Respondents, I would like to thank you for your cooperation and for allocating some of your precious time to fill out this questionnaire that was prepared for the purpose of research. I would highly appreciate it if you could take part in this survey. This questionnaire is short as it will take approximately only five minutes. We will not ask for your personal information, and your answers will be treated with complete confidentiality and will be entirely anonymous. The reliability of the research depends largely on the information provided by you as a participant. Thank you for giving the time to complete this questionnaire.

أسئلة تعريفية Demographic Questions

1. Gender الجنس

1. Male ذكر
2. Female أنثى

2. Age العمر

1. Under 18 Years أقل من 18 سنة
2. 18-34 Years 18-34 سنة
3. 35-54 Years 35-54 سنة
4. 55 or Above 55 فما فوق

3. Education Level المستوى التعليمي

1. High School or Below المدرسة الثانوية أو أقل
2. Bachelor's Degree درجة البكالوريوس
3. Master's Degree درجة الماجستير
4. Doctorate or Higher الدكتوراه أو أعلى

4. Monthly Income (in Saudi Riyal) الدخل الشهري (بالريال السعودي)

1. Below 5,000 SAR أقل من 5000 ريال سعودي
2. 5,000 - 10,000 SAR 10,000 - 25000 ريال سعودي
3. 10,001 - 15,000 SAR 15,000 - 10,001 ريال سعودي
4. 15,001 - 20,000 SAR 20,000 - 15,001 ريال سعودي
5. Above 20,000 SAR أعلى من 20,000 ريال سعودي

5. Frequency of Online Shopping تكرار التسوق عبر الإنترنت

1. Daily يوميًا
2. Weekly أسبوعيًا
3. Monthly شهريًا
4. Occasionally بين الحين والآخر
5. Never أبدًا

السهولة Convenience

1. Shopping online provides me with convenience in terms of saving time.

يوفر لي التسوق عبر الإنترنت راحة من حيث توفير الوقت

1. Strongly Disagree لا أوافق تمامًا
2. Disagree لا أوافق
3. Neutral محايد
4. Agree أوافق
5. Strongly Agree أوافق تمامًا

2. I find it easy to navigate through online retail websites or apps

أجد أنه من السهل التنقل في مواقع التجزئة عبر الإنترنت أو التطبيقات

1. Strongly Disagree لا أوافق تمامًا
2. Disagree لا أوافق
3. Neutral محايد
4. Agree أوافق
5. Strongly Agree أوافق تمامًا

3. The availability of multiple payment options makes my shopping experience convenient.

إن توفر خيارات الدفع المتعددة يجعل تجربة تسوقي مريحة

1. Strongly Disagree لا أوافق تمامًا
2. Disagree لا أوافق
3. Neutral محايد
4. Agree أوافق
5. Strongly Agree أوافق تمامًا

4. The option for home delivery enhances the convenience of online shopping for me.

يعزز خيار التوصيل إلى المنزل من سهولة التسوق عبر الإنترنت بالنسبة لي

1. Strongly Disagree لا أوافق تمامًا
2. Disagree لا أوافق
3. Neutral محايد
4. Agree أوافق
5. Strongly Agree أوافق تمامًا

5. Online shopping provides me with greater convenience compared to shopping in physical stores.

يوفر لي التسوق عبر الإنترنت راحة أكبر مقارنة بالتسوق في المتاجر الفعلية

1. Strongly Disagree لا أوافق تمامًا
2. Disagree لا أوافق
3. Neutral محايد
4. Agree أوافق
5. Strongly Agree أوافق تمامًا

Personalization التخصيص الشخصي

1. Online retailers offer personalized recommendations based on my past purchases.

تقدم المتاجر عبر الإنترنت توصيات مخصصة بناءً على مشترياتي السابقة

1. Strongly Disagree لا أوافق تمامًا
2. Disagree لا أوافق
3. Neutral محايد
4. Agree أوافق
5. Strongly Agree أوافق تمامًا

2. I feel that online retailers understand my preferences and needs.

أشعر أن المتاجر عبر الإنترنت يفهمون تفضيلاتي واحتياجاتي

1. Strongly Disagree لا أوافق تمامًا
2. Disagree لا أوافق
3. Neutral محايد
4. Agree أوافق
5. Strongly Agree أوافق تمامًا

3. Personalized promotions and discounts influence my purchase decisions.

تؤثر العروض والخصومات المخصصة على قراراتتي في الشراء

1. Strongly Disagree لا أوافق تمامًا
2. Disagree لا أوافق
3. Neutral محايد
4. Agree أوافق
5. Strongly Agree أوافق تمامًا

4. I appreciate it when online retailers address me by my name in communications.

أقدر عندما يتعامل المتاجر عبر الإنترنت معي باسمي في التواصل

1. Strongly Disagree لا أوافق تمامًا
2. Disagree لا أوافق
3. Neutral محايد
4. Agree أوافق
5. Strongly Agree أوافق تمامًا

5. The ability to customize products/services online adds value to my shopping experience.

القدرة على تخصيص المنتجات / الخدمات عبر الإنترنت تضيف قيمة لتجربتي التسوق

1. Strongly Disagree لا أوافق تمامًا
2. Disagree لا أوافق
3. Neutral محايد
4. Agree أوافق
5. Strongly Agree أوافق تمامًا

Customer Service خدمة العملاء

1. I receive prompt assistance from customer service representatives when I encounter issues with online purchases.

أتلقي مساعدة سريعة من ممثلي خدمة العملاء عندما يحدث لدي مشكلات في عمليات الشراء عبر الإنترنت

1. Strongly Disagree لا أوافق تمامًا
2. Disagree لا أوافق
3. Neutral محايد
4. Agree أوافق
5. Strongly Agree أوافق تمامًا

2. Online retailers offer multiple channels (e.g., live chat, email, phone) for customer support.

يقدم متاجر التجزئة عبر الإنترنت عدة قنوات (مثل الدردشة المباشرة، البريد الإلكتروني، الهاتف) لدعم العملاء

1. Strongly Disagree لا أوافق تمامًا
2. Disagree لا أوافق
3. Neutral محايد
4. Agree أوافق
5. Strongly Agree أوافق تمامًا

3. I trust online retailers to handle my inquiries and complaints efficiently.

أثق في أن متاجر التجزئة عبر الإنترنت ستتعامل مع استفساراتي وشكاوي بكفاءة

1. Strongly Disagree لا أوافق تمامًا
2. Disagree لا أوافق
3. Neutral محايد
4. Agree أوافق
5. Strongly Agree أوافق تمامًا

4. The availability of online reviews and ratings helps me make informed purchase decisions.

تساعدني الآراء وتقييمات المنتجات عبر الإنترنت في اتخاذ قرارات شراء مستنيرة

1. Strongly Disagree لا أوافق تمامًا
2. Disagree لا أوافق
3. Neutral محايد
4. Agree أوافق
5. Strongly Agree أوافق تمامًا

5. I receive personalized assistance from online retailers when needed.

أتلقي مساعدة شخصية من متاجر التجزئة عبر الإنترنت عند الحاجة

1. Strongly Disagree لا أوافق تمامًا
2. Disagree لا أوافق
3. Neutral محايد
4. Agree أوافق
5. Strongly Agree أوافق تمامًا

الرضا العام Overall Satisfaction

1. My overall satisfaction with online shopping experiences in Saudi Arabia is high.

رضاي العام عن تجارب التسوق عبر الإنترنت في المملكة العربية السعودية عالٍ

1. Strongly Disagree لا أوافق تمامًا
2. Disagree لا أوافق
3. Neutral محايد
4. Agree أوافق
5. Strongly Agree أوافق تمامًا

2. I prefer shopping online over visiting physical stores for most of my purchases.

أفضل التسوق عبر الإنترنت على زيارة المتاجر الفعلية لمعظم مشترياتي

1. Strongly Disagree لا أوافق تمامًا
2. Disagree لا أوافق
3. Neutral محايد
4. Agree أوافق
5. Strongly Agree أوافق تمامًا

3. I feel that digital transformation initiatives have improved my overall shopping experience in Saudi Arabia.

أشعر أن مبادرات التحول الرقمي قد حسنت تجربة التسوق العامة لدي في المملكة العربية السعودية

1. Strongly Disagree لا أوافق تمامًا
2. Disagree لا أوافق
3. Neutral محايد
4. Agree أوافق
5. Strongly Agree أوافق تمامًا

4. I am likely to recommend online shopping platforms in Saudi Arabia to friends and family.

من المرجح أن أوصي بمنصات التسوق عبر الإنترنت في المملكة العربية السعودية للأصدقاء والعائلة

1. Strongly Disagree لا أوافق تمامًا
2. Disagree لا أوافق
3. Neutral محايد
4. Agree أوافق
5. Strongly Agree أوافق تمامًا

5. I believe that digital transformation is essential for the future success of the retail industry in Saudi Arabia.

أعتقد أن التحول الرقمي ضروري لنجاح صناعة التجزئة في المستقبل في المملكة العربية السعودية

1. Strongly Disagree لا أوافق تمامًا
2. Disagree لا أوافق
3. Neutral محايد
4. Agree أوافق
5. Strongly Agree أوافق تمامًا

Customer Experience تجربة العملاء

1. My overall experience with online retailers in Saudi Arabia is positive.

تجربتي العامة مع متاجر التجزئة عبر الإنترنت في المملكة العربية السعودية إيجابية

1. Strongly Disagree لا أوافق تمامًا
2. Disagree لا أوافق
3. Neutral محايد
4. Agree أوافق
5. Strongly Agree أوافق تمامًا

2. Online retailers in Saudi Arabia prioritize providing a seamless and enjoyable shopping experience.

تضع متاجر التجزئة عبر الإنترنت في المملكة العربية السعودية توفير تجربة تسوق سلسة وممتعة في المقام الأول

1. Strongly Disagree لا أوافق تمامًا
2. Disagree لا أوافق
3. Neutral محايد
4. Agree أوافق
5. Strongly Agree أوافق تمامًا

3. I feel valued as a customer when interacting with online retailers in Saudi Arabia.

أشعر أنني محظوظ كعميل عند التفاعل مع متاجر التجزئة عبر الإنترنت في المملكة العربية السعودية

1. Strongly Disagree لا أوافق تمامًا
2. Disagree لا أوافق
3. Neutral محايد
4. Agree أوافق
5. Strongly Agree أوافق تمامًا

4. Online retailers in Saudi Arabia effectively engage with me throughout the entire shopping journey (from browsing to post-purchase support).

تتفاعل متاجر التجزئة عبر الإنترنت في المملكة العربية السعودية بفعالية معي طوال رحلة التسوق بأكملها (من التصفح إلى دعم ما بعد الشراء)

1. Strongly Disagree لا أوافق تمامًا
2. Disagree لا أوافق
3. Neutral محايد
4. Agree أوافق
5. Strongly Agree أوافق تمامًا

5. The digital transformation initiatives implemented by online retailers in Saudi Arabia have significantly enhanced my overall customer experience.

المبادرات التحويل الرقمي التي تنفذها متاجر التجزئة عبر الإنترنت في المملكة العربية السعودية قد عززت بشكل كبير تجربتي العامة كعميل

1. Strongly Disagree لا أوافق تمامًا
2. Disagree لا أوافق
3. Neutral محايد
4. Agree أوافق
5. Strongly Agree أوافق تمامًا

Thanks, Note

The fact that you are reading this message indicates that you have completed our questionnaire and that we owe you a debt of thanks. We are very appreciative of the time you have taken to assist in our analysis and commit to utilizing the information gained to contemplate and implement valuable improvements. We will share these results with you through your State Survey Agency, whom we also thank for their generous participation. Once again, we are extremely grateful for your helpful contribution, your honest information, and your thoughtful suggestions.

الخلاصة

الهدف من هذا المشروع هو التحقيق في الأثر المتعدد الجوانب للتحويل الرقمي (مثل الراحة والتخصيص وخدمة العملاء والرضا العام) على تجربة العملاء في قطاع التجزئة في المملكة العربية السعودية. استخدمت هذه الدراسة نهجًا بحثيًا كميًا وتصميم بحث وصفي. شملت مجتمع الدراسة 200 فردًا في المملكة العربية السعودية الذين تفاعلوا مع منصات التجزئة الرقمية، بما في ذلك أولئك الذين يتعاملون مع مواقع التجارة الإلكترونية وتطبيقات التسوق عبر الهاتف المحمول والتقنيات الرقمية الأخرى المستخدمة من قبل شركات التجزئة. تم جمع بيانات الدراسة باستخدام استبيان منظم جيدًا تم إنشاؤه باستخدام منصة Google Forms وتوزيعه إلكترونيًا عبر منصات وسائل التواصل الاجتماعي المختلفة مع التركيز على الوصول إلى العملاء في المملكة العربية السعودية. تم إجراء تحليل البيانات لهذه الدراسة باستخدام SPSS و MS Excel ، وهو برنامج شامل مصمم للتحليل الإحصائي. توضح النتائج أن خدمة العملاء هي أقوى عامل تنبؤ بتجربة عملاء إيجابية، مما يؤكد على أهميتها الحاسمة. الارتباطات العالية بين التخصيص والرضا وبين خدمة العملاء والتجربة تؤكد على قيمة الخدمات المخصصة وجودة خدمة العملاء في البيئات الرقمية. يُنصح تجار التجزئة بأن يجعلوا هذه المجالات أولوية في جهود التحويل الرقمي لديهم لتحسين رضا العملاء بشكل كبير والحصول على ميزة تنافسية في السوق. تركز هذه الدراسة على قطاع التجزئة في المملكة العربية السعودية فقط، مما يحد من إمكانية تعميمها على قطاعات وأقاليم أخرى. يغطي التحويل الرقمي العديد من المتغيرات: الابتكار التكنولوجي وأمن البيانات ومبادرات القنوات المتعددة. يمكن للدراسات توسيع نطاق المتغيرات، بما في ذلك هذه المتغيرات وغيرها من المعايير ذات الصلة.

الكلمات المفتاحية:

التحول الرقمي، الراحة، التخصيص، خدمة العملاء، الرضا العام، تجربة العملاء، قطاع التجزئة، المملكة العربية السعودية.

موضوع مشروع البحث

تأثير التحول الرقمي على تجربة العملاء في صناعة التجزئة في المملكة العربية
السعودية

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السنة: 2024