

Digital Transformation in Retailing: An Empirical Analysis of Its Impact on Consumer Buying Behaviour

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Abstract

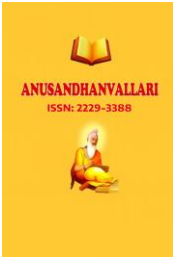
The rapid advancement of digital technologies has significantly reshaped the retail landscape and transformed the way consumers engage in purchasing activities. With the widespread adoption of smartphones, internet accessibility, and digital payment systems, consumers are increasingly relying on digital platforms for information search, product evaluation, and final purchase decisions. This study aims to examine the impact of digital transformation on consumer buying behaviour, with a particular focus on the roles of convenience and personalization. The research is based on primary data collected from 120 respondents through a structured questionnaire. Statistical techniques, including correlation and regression analysis, have been employed to test the proposed hypotheses. The findings reveal that digitalisation has a strong and statistically significant positive influence on consumer buying behaviour. Furthermore, personalization is found to play a crucial role in enhancing purchase intention by offering tailored experiences that align with individual preferences. Despite these advantages, concerns related to data privacy and trust continue to affect consumer engagement with digital platforms. The study highlights the importance of integrating digital technologies with customer-centric strategies to improve overall shopping experiences. The findings provide valuable insights for retailers and policymakers aiming to adapt to the evolving digital retail environment.

Keywords: Digital Transformation, Consumer Buying Behaviour, Retailing, Personalization, E-commerce, Omnichannel Retailing, Purchase Intention

Introduction

The retail sector has undergone a remarkable transformation in recent years, largely driven by the rapid advancement of digital technologies. The widespread adoption of smartphones, improved internet connectivity, and the growing use of digital payment systems have significantly altered the way consumers interact with markets. Traditional shopping practices, which were once limited to physical store visits, have now evolved into a more dynamic and digitally influenced process. In today's environment, consumers are no longer passive participants in the marketplace. They actively engage in searching for product information, comparing alternatives, and evaluating reviews before making purchase decisions (Dickson, 2000). This shift reflects a move toward more informed and rational decision-making, supported by the availability of real-time information on digital platforms. As a result, retailers are increasingly required to adopt customer-centric strategies that focus on enhancing overall shopping experiences rather than merely offering products.

Digital transformation has introduced several innovations that have reshaped the retail landscape. E-commerce platforms, mobile applications, and integrated digital payment systems have made the purchasing process more convenient, flexible, and efficient. Additionally, the emergence of omnichannel retailing has blurred the boundaries



between online and offline channels, allowing consumers to switch seamlessly between different modes of shopping (Brynjolfsson et al., 2013). This integration has not only improved accessibility but also strengthened customer engagement and satisfaction. In the Indian context, the pace of digital adoption has been particularly significant. Affordable internet services, increased smartphone penetration, and government initiatives promoting digital payments have contributed to the growth of digital retailing. Consumers from both urban and semi-urban areas are increasingly relying on online platforms for their purchasing needs. However, despite these developments, challenges such as data privacy concerns, lack of trust, and technological barriers continue to influence consumer behaviour. Given these changing dynamics, it becomes essential to understand how digital transformation affects consumer buying behaviour in a comprehensive manner. This study aims to examine the role of digitalisation and personalization in shaping purchase decisions, thereby providing valuable insights into the evolving retail environment.

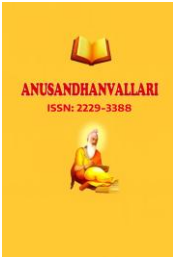
Literature Review and Research Gap

Turley and Milliman (2000) brought the fact that there are several digital factors that contribute to a customer's purchasing decision. Environmental cues have a significant impact on a consumer's approach- avoidance behaviour, affecting their emotions and cognitive processes. While this is not a new phenomenon in the retail industry, the emergence of various digital communication networks has made it crucial for retailers to leverage these networks a stimuli for customers. By utilizing various digital modes of shopping networks, retailers can attract larger stimuli for customers. By utilizing various digital modes of shopping networks, retailers can attract a larger customer base. Marketers must stay up-to-date with the latest digital technologies to capture the attention of customers.

Dholakia and Uusitalo (2002) explained that the more experience we gain from in home computer shopping, the stress level associated with computer shopping decreases. There's a similar relationship of store shopping like computer shopping. Store shopping has a significant relationship with age, household income and family composition but not with age. With store shopping men feels more stress than women.

Biyalogorsky and Naik (2003) formulated a dynamic model to see the impact of on-line activities on online purchase behaviour and online equity value. He concluded that customer makes his purchase decision by viewing various websites and web pages. Also firms which have high online equity value will have a stronger online customer base. Customer's on-line purchase behaviour is affected by his on-line behaviour. Many times Customer buys the product online after watching it on website. There is cannibalization of off line sales due to on- line purchase behaviour in the same period. More visits on a website leads to online equity. There are more chances to develop on-line equity with increased visits on websites. So firms which are highly engaged in online activities and thereby create its equity value, can attract more customers.

Brynjolfsson and Rahman (2009) examined that internet retailers face considerable competition from traditional retailers when selling popular products, but are unaffected with competition when selling niche products. Moreover, given that the Internet channel sells more niche products than the catalogue channel, the competition between the Internet channel and local stores is less severe than the competition between the catalogue channel and local stores. An increase in local stores considerably reduces the catalogue demand, while the impact of local stores on the Internet demand is lesser, a difference is due to that lower search costs on the Internet. Increase in the local stores does decrease the demand from the Internet. There is high consumer search cost in Brick and Mortar stores.



Information technology lowers consumer search cost with this consumer can discover niche products. Niche products in the Internet channel face little competition from local stores.

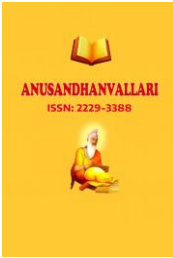
Pantano (2010) associated retail world with entertainment. If retailers add a fun element with all retail strategies then they can easily involve their customers with their products and stores. There's a revolution in the retail world which is now surrounded with various advanced technologies (such as Personal shopping assistant, Radio frequency identification, smart phones, smart mirror). These technologies help customers to find their product in the store helps in making price comparisons and provides a virtual environment. Customer feels fun in these kinds of advanced equipments in stores. With advanced systems customer feels entertainment, which helps in engaging customer in stores and leads to more sales.

Reinartz et al., (2011) brought that concept of various challenges that create a necessity for the retailers to live with innovations to survive in the industry. With globalization retailers face various consumer centric challenges, industry centric challenges and legal challenges in various markets like developed market, less developed market and developing markets. Every market requires a different environment climate so environmental condition is one of the challenges before retailers. Second is innovation change, as new technologies are emerging, so retailers have to adapt those new innovations according to the concerned market.

Brynojolfsson et al., (2013) analyzed that with this new emerging technology there is not any difference between Physical and online stores. With use of smart phone technologies it has become easy for physical stores to keep information of customers that leads to omnichannel environment. Online channels should not use pricing strategy directly for competing with offline stores rather it should use various other ways like best sorting and filtering option, collecting lots of fine data and using it in a proper manner. Even offline stores can make use of online demand information for the availability of various niche products which are not huge in demands. Technology has vaster the omnichannel retailing, there are various websites, apps and social media from where customers can shape their buying decisions, Omnichannel retailing with new technology has reduced the gap between suppliers and retailers. Now both of them can better work for customers as per customer's demands.

Cheah et al., 2020 used Stimulus–Organism–Response (S–O–R) and Psychological Reactance Theory (PRT) to elaborate how omnichannel retailing affects consumer behavior. Consumer perception of channel integration (CPCI), consumer empowerment (CE) and trust considerably influence on patronage intention in omnichannel retailing. Also when privacy concerns are low, the effects of CPCI and CE on trust are found to be stronger. Study revealed that there is a direct positive relationship between CPCI and CE, trust and patronage intention. It has also identified that consumer empowerment put a positive impact on trust and patronage intention, the results also state the significant relationship between trust and patronage intention. It has been identified that privacy concerns play a major role in customer buying. In omnichannel world customers have to give various personal information such as name, address and credit card details. If omnichannel retailers provide a full secure privacy then customer will be having a strong trust towards them.

Pauwels and Neslin (2015) tried to establish relationship between introduction of physical stores with many other variables. A Multivariate baseline analysis was done and it was found that by introducing physical stores there's more reduction in purchase frequency in the catalog channel than the Internet channel but increases total purchase frequency. There is no significant impact on order sizes with introduction of stores either from the Internet or catalog. Store introduction increases exchange and returns. The main beneficiary of store introduction is customer



retention. Store promotions directly affect customer purchasing from stores as well as from the catalog and the Internet. Internet holds shopping towards the goal, while the store and catalog hold experiential shopping.

David *et al.*, (2018) stated that the mobile shopping revolution influences the consumer buying behaviour. Author used observation method in supermarket and found that people are highly influenced with mobile apps and make their purchase decisions with help of various mobile apps. For success of retailers, three areas have been identified: customer analytics, employee empowerment and engagement, and Omni channel marketing. Retailers should focus on consumer decision process rather on the decision outcome. Four pillars of mobile shopping- Consumer-retailer interconnectedness, consumer empowerment, proximity- based consumer engagement and web based consumer engagement reshape the consumer buying decision- making. Mobile Technologies can be used to make an interconnection between consumer and retailer. Retailers can make an effective and timely communications with consumers and can increase sales performance. For providing seamless shopping experience to customers, it is required to have an interconnection with them by way of various online apps and websites.

Impact of Digitalisation on customers:

Virtual Experience

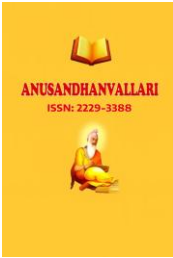
Some of the retail technologies, particularly the advanced technologies such as virtual and augmented reality, RFID, biometric technology, 3D scanning can improve customer's experience. These technologies may be helpful in sharing information with customers on their behaviour. These technologies may give benefit to retailing. These technologies give a virtual experience to the customers where they can feel the product and they get a real exposure. And shopping becomes very easy with use of several technologies (Pantano and Naccarato 2010).

Seamless Shopping Experience

With online mode retailers can make their customers feel more involved with buying process. For involving customers retailers can give them a virtual experience by introducing several technologies. Customers are enlightened to use these technologies and feel a seamless shopping experience (Premazzi *et al.* 2010)

Customer-retailer-supplier Interactions

Studied that advanced technologies are helpful in creating an interaction between retailers and suppliers. There's a great role of internet in this process. Internet based system helps in creating awareness amongst employees. Customers are able to generate information about various retailers and about their products through Internet. Internet has become a major medium for making a shopping decision by the customers. Customers can make use of Internet in solving their queries, in knowing about several comparisons (Renko and Ficko 2010). By exploiting virtual technologies, retailers can expand their business via online channel. Through online mode they can focus on sharing information with their customers, so thereby they can increase their customer base. (Premazzi *et al.* 2010). Rust and Huang (2014) presented that information technology is the key to reach to customers. Firms can develop its relations deeper with customer with a revolution in information technology. Important areas to service revolution are 1) best way to understand the big customer data 2) keeping personalized services than to standardized, so that to make customer feel special 3) proper application of IT in providing service quality and productivity 4) making good and



long relationship with customers via information technology and 5) the impact of strong customer relationship in expanding the service market. Handling and managing big customer data is a challenge for a firm, IT helps in managing it through data mining and various other machine languages. This IT helps in growth of service sector in every economy. Ryding (2010) presented that with introduction of technologies firms can increase the effectiveness of salespersons. These technologies help in creating a relationship between the sales force and clients and a better communication can be set between them. Technologies help in setting new communication channels for a better networking. It helps in attracting more customers and even attention can be grabbed from the existing customers.

Fun & Entertainment

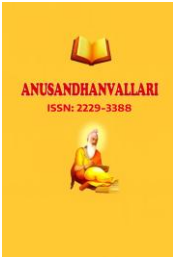
Digital signage provides information to customers and make them feel comfortable in stores. Customers feel entertainment and are attracted towards it. Product's information can be provided on digital platform in stores which can attract customers to add these in their shopping basket. (Dennis *et al.*, 2012). Roggeveen *et al.*, (2015) explained that customer is affected by different formats of presenting products adopted by various retailers on online platform. Some retailers' uses static format and some uses dynamic formats. Customer feels more involvement with dynamic format than still pictures. And he shows more interest and preference for the hedonic products. But for utilitarian product, whether dynamic or static format of presenting products doesn't influence customer choice. Dynamic formats help to customers in imagining the products, so it leads to experiential marketing. The dynamic way of presenting products also increases customer's willingness to pay.

Digital Signage

Retailers should display those moving images on screen which can easily attract to customers or work as a stimuli to drive a need. Digital signage can be used in providing various offers, product displays, and for various promotions (Dennis *et al.*, 2012). Roggeveen *et al.*, (2016) conducted three field experiments and concluded that digital displays have a major impact on sales in hypermarkets. It helps in increasing sales in hypermarkets whereas it has no impact on sales in super markets. And for in store retailers where customers have very less time for shopping, these digital displays lower store sales. For hypermarkets digital display is a better investment but for small stores it has no worth. Price promotional display content is more effective in creating interest among customers to spend more time and to make more purchase. (Roggeveen *et al.*, 2016). Customer is influenced by the in store screen display known as digital signage. Digital signage helps in providing a great experience to customers. Customers feel entertaining and involved in shopping. It evokes customer's feelings, sentiments, and happiness. Customer is inspired to make more purchase at these stores where digital ads are displayed which provides affective experience to them. Pleasing sensory images provides more affective experience than intellectual experience and utilitarian messages provide more intellectual experience than affective experience to customers (Dennis *et al.*, 2014)

Magic Mirror and Augmented Reality

Poncin and Mimoun (2014) studied on two major technologies: a magic mirror with augmented reality and an interactive games terminal. He studied that if these technologies are added to a store atmosphere then how it will impact on customer's buying behaviour. Data was collected through a questionnaire, where sample of 165 people



was used. Questionnaire comprised five point likert scale and many variables like shopping value, emotions, perceived store atmosphere, patronage intentions and satisfaction. It was found that there is a positive effect of these two technologies on store atmosphere, positive emotions and shopping value. Hence it was proved that similar to other atmospheric variables, technology is also an important factor for a retail store. These technologies enhanced customer's experience and thereby gave them satisfaction. Mixed reality apps will be the next thing in the new technology in retail sector. Customer can experience a physical world in a digital version through smart phones, smart glasses or headsets. Mixed reality will be consisting augmented reality apps like Pokemon Go and Harry Potter: Wizards Unite, as well as social media apps with real-time reality-overlay filters, like Snapchat. Augmented reality would be adopted by consumers and it will be benefitting the business (Stern 2019). Pantano and Viassone (2015) states that by integrating multiple channels at a single selling point of retailer, consumer can be stopped to switch to other competitive channel. Integrated channels leads to overall satisfaction of consumers. Store quality perception is made by both the services at store human as well as technical services. Consumer's interactions with both the services (human and technological services) jointly influence the overall service quality perception. It's better to spend on an integrated channel system at a single place rather to improve each and every single channel by the retailer. Integrated channel system brings more service quality for consumers. In the integrated channel retailer there should be surety that all customers should have a proper interaction with all the human and technological services. With that if customers have a good interaction with all integrated channel, may buy from online stores when the product is not available at the offline store. Integrated system increases the cost of the store as various investments have to be done in store such as: new technologies, 3d devices, new mobile apps, more stock etc.

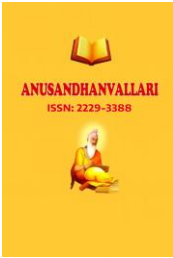
Customer analytics

There are various technological changes which are found in retail sector. The key technological advancements such as artificial Intelligence (AI), Frontline service robots, Blockchain ledger technology, social media, retail analytics all leads to retail revolution. Retailers can use customer's data to perceive their preferences and can prepare their retail strategies accordingly. With Artificial intelligence and retail analytics retailers can increase their supply chain efficiency and can make low inventory cost. With block chain ledger technology several data can be stored in thousands of computers and can be making publically available. With this retailers can make a close connection with their customers. So, all these technologies can help to retailers as well as customers in whole buying process and even after that (Grewal *et al.*, 2018).

Although these studies provide valuable insights, many of them focus on individual aspects of digitalisation. There is still a need to bring these elements together and understand their combined effect on consumer behaviour, particularly in the context of developing economies like India. This study addresses that gap.

Research Objectives

In light of the growing importance of digital technologies in retailing, the present study seeks to examine the changing nature of consumer buying behaviour in a digitally driven environment. The primary objective of this research is to analyze the impact of digital transformation on consumer purchase decisions. In particular, the study focuses on understanding how technological factors influence the way consumers search for information, evaluate alternatives, and make final purchase choices.



Another important objective of the study is to evaluate the role of personalization in shaping consumer preferences and purchase intention. With the increasing use of data analytics and artificial intelligence, retailers are now able to offer customized experiences, which may significantly influence consumer behaviour.

Furthermore, the study aims to provide empirical evidence on the relationship between digitalisation and consumer buying behaviour by applying statistical tools. By doing so, the research attempts to bridge the gap between theoretical insights and real-world consumer practices, particularly in the context of a developing economy.

Hypotheses Development

Based on the review of existing literature and the identified research gap, the study proposes the following hypotheses:

H1: Digital transformation has a significant positive impact on consumer buying behaviour.

This hypothesis is grounded in the argument that digital platforms enhance convenience, accessibility, and information availability, which in turn influence consumer decision-making processes.

H2: Personalization has a significant positive effect on consumer purchase intention.

This hypothesis is based on the premise that customized recommendations and tailored experiences increase consumer engagement and improve the likelihood of purchase.

Research Methodology

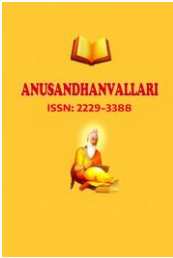
The present study adopts a descriptive and analytical research design to examine the relationship between digitalisation and consumer buying behaviour. The research is empirical in nature and is based on primary data collected from respondents who actively engage with digital shopping platforms.

Data Collection

Primary data was collected through a structured questionnaire designed to capture respondents' perceptions regarding digitalisation and personalization. The questionnaire included multiple statements measured on a five-point Likert scale, ranging from "strongly disagree" to "strongly agree." This scaling technique was used to quantify attitudes and behavioural tendencies in a systematic manner.

Sample Design

The study is based on a sample of 120 respondents, including students, working professionals, and individuals engaged in business activities. A convenience sampling method was employed to select respondents who have prior experience with online shopping platforms. This approach ensured that the participants were familiar with digital retail environments and could provide meaningful responses.



Variables of the Study

The study includes both independent and dependent variables. Digitalisation and personalization are treated as independent variables, while consumer buying behaviour and purchase intention are considered dependent variables. These variables are examined to understand their interrelationships and overall impact.

Analytical Tools

To analyze the data, statistical techniques such as correlation analysis and regression analysis were applied. Correlation analysis was used to measure the strength and direction of the relationship between variables, while regression analysis was employed to determine the extent to which independent variables influence the dependent variable. These tools provide a reliable basis for testing the proposed hypotheses.

Hypothesis Testing and Data Analysis

The analysis of the collected data provides important insights into the relationship between digitalisation, personalization, and consumer buying behaviour.

Testing of Hypothesis 1

The first hypothesis examines whether digital transformation has a significant impact on consumer buying behaviour. The correlation analysis indicates a coefficient value of **0.68**, which reflects a strong positive relationship between digitalisation and consumer buying behaviour. This suggests that as the level of digital engagement increases, consumers are more likely to participate in online purchasing activities.

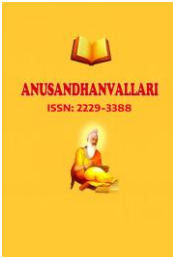
To further validate this relationship, regression analysis was conducted. The results show an R^2 value of **0.46**, indicating that approximately 46 percent of the variation in consumer buying behaviour can be explained by digitalisation. The p-value associated with this result is less than 0.05, which confirms that the relationship is statistically significant.

These findings clearly demonstrate that digital transformation plays a crucial role in influencing consumer behaviour. The availability of digital platforms, ease of access, and the ability to gather information quickly contribute to increased consumer participation in online shopping.

Therefore, Hypothesis 1 is accepted.

Testing of Hypothesis 2

The second hypothesis focuses on the impact of personalization on consumer purchase intention. The correlation coefficient between personalization and purchase intention is found to be **0.72**, indicating a very strong positive relationship. This suggests that consumers respond positively to personalized experiences and are more likely to make purchase decisions when recommendations align with their preferences.



The regression analysis further supports this finding, with an R^2 value of **0.52**, indicating that 52 percent of the variation in purchase intention is explained by personalization. The p-value is again less than 0.05, confirming the statistical significance of the results.

These results highlight the importance of personalization in modern retailing. Consumers tend to value customized experiences that reduce the effort involved in searching for products and increase the relevance of available options. As a result, personalization significantly enhances consumer engagement and purchase likelihood.

Therefore, Hypothesis 2 is accepted.

Interpretation

The results of the study indicate that both digitalisation and personalization have a strong and positive influence on consumer buying behaviour. While digitalisation improves convenience and accessibility, personalization enhances the quality of the shopping experience by making it more relevant and engaging.

The findings also suggest that technological advancements are not only changing how consumers shop but also influencing how they perceive value and satisfaction. Retailers who effectively leverage digital tools and personalized strategies are more likely to succeed in today's competitive environment.

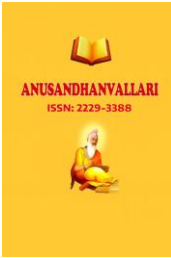
Conclusion

Digital transformation has fundamentally reshaped the retail sector and consumer buying behaviour. The study confirms that both digitalisation and personalization have a significant positive impact on purchase decisions.

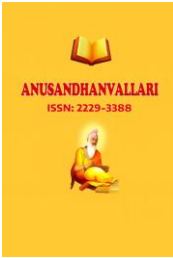
While digital platforms offer numerous advantages, addressing challenges related to trust and privacy is essential for long-term success. The future of retail lies in the effective integration of digital and traditional channels, enabling businesses to meet the evolving needs of consumers.

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