



Artificial Intelligence in Consumer Buying Behaviour: A Study of Social Commerce

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Abstract

The digital transformation has brought Artificial Intelligence (AI) into the forefront as a fundamental element of sustainable marketing practices. This research study investigates how AI technologies help to advance buying behavior among social commerce consumers. Businesses can achieve higher levels of consumer engagement and satisfaction by using AI-generated insights to optimize their marketing strategies. The research combines descriptive metrics and analysis using surveys conducted through judgment and convenience sampling approaches to study AI's effects on customer behaviors. Key research points to essential roles AI systems play in consumers' relationship enhancement with businesses alongside trend forecasting capabilities and personalized benefits. The innovation leads to workflow improvements while supporting sustainable marketing initiatives through effective resource management together with enhanced user satisfaction.

Keywords: Artificial Intelligence, Sustainable Marketing, Consumer Behavior, Social Commerce, Personalized Marketing.

1 Introduction

Artificial Intelligence (AI) is significantly reshaping consumer buying behavior, particularly in the realm of social commerce. AI technologies such as personalized recommendations, chatbots, predictive analytics, and social media engagement are pivotal in enhancing consumer purchase intentions and satisfaction [1]. These technologies not only improve marketing strategies but also influence impulsive buying behaviors and consumer trust. The integration of AI in social commerce is multifaceted, involving various machine learning models and ethical considerations [2]. Below are key insights from the research on AI's impact on consumer buying behavior in social commerce.

Artificial intelligence (AI) has made its own place in the consumer market and occurs as one of the most identical disrupters [3]. It is broadly homologized with several products and services without users acknowledging it [4]. AI is a technology which is based on individual experiences and learning [5]. Artificial intelligence (AI) has an aptitude to transform the process through which businesses interconnect with their customers [6]. The paper acknowledges the trust and security issues consumers face regarding data privacy in AI-driven marketing. By addressing these concerns, the study contributes to the discourse on ethical marketing practices and the need for transparency in AI applications [7]. The introduction discusses the transformative potential of AI in reshaping traditional marketing strategies. It suggests that AI can not only predict consumer behavior but also actively encourage impulsive purchases through personalized recommendations and targeted advertising [8]. In a very short period of time, Artificial Intelligence assists different companies to recognize different needs and perceptions of consumers. It also helps in increasing the Company's graphs of sales and revenues. AI techniques are useful for targeting the conspicuous prospects they acquire from the insights of the prevalent consumer. Artificial intelligence-based assistance makes possible interaction with consumers which is helpful in making good relation of company with the valuable consumer [9]. AI acts as a backdrop which helps in monitoring consumer or user emotions on social media platforms and internet. In online shopping there is no considerable relation between gender and the awareness of Artificial Intelligence. On the other hand, with the essential impact of Artificial Intelligence there is a notable relation between the people spending time on internet and their educational standards [10]. Artificial Intelligence (AI) assists the marketers to understand their consumers very well. It fundamentally transforms the characteristics of marketing. AI requires time to time changes or system updates in the process in which consumers or users connect with firms. On that account, marketers should always be prepared for new updates arising in the age of Artificial Intelligence. It is essential for marketers to comprehend and understand the use of AI in the activities of market to forecast modified consumer behavior throughout the journey of consumer mindset [11].

Due to advanced technology, AI is also helpful for the health of consumers because in present firms proffer different prominent ranges of goods and services which aid in maintaining the health of an individual suggesting systems which gives advice, sharp-witted household goods and subsidiary virtual assistant with the facility of voice search about anything an individual wants. Artificial Intelligence can be scrutinized as presence of devices to assess reliability and competency [12]. The continuous collection of volumetric data helps in increasing the accuracy, consistency, varieties and speed which avails in understanding the behavior of consumer towards company's products which is possible through the use of Artificial Intelligence. AI plays a critical role to transform this data in to significant consumer insight [13]. This significant insight of consumer's behavior facilitates the marketers by providing a base to decide marketing devices and predicting sales and revenue of respective companies. Artificial Intelligence pivots on these insights of consumers to suggest marketers about good presentations, indexes and demonstrations [14]. The strong capability of Artificial intelligence helps marketers to collect and examine volumetric data of consumers and take decisions for further activities. Today, this technology adopted by Social Commerce industry is known for the distinct patterns depending on browsers used, products and services purchasing history, credit checks, information of consumer profiles etc. In the future, AI would create a notable impact on the process of Social Commerce trade which is helpful in fascinating their attention and retaining consumers. In the Social Commerce industry, AI works as aid for increasing the closeness of consumers with companies. AI facilitates Social Commerce businesses to avail huge data collection regarding the behavior of consumers and their different patterns of usage. Artificial intelligence has a technique of individual's learning algorithms which is capable in creating private experiences of shopping for online purchasers. The framework of AIM (Artificial Intelligence Marketing) helps independent or autonomous machines to acquire large datum and information. With the use of artificial intelligence, this information can create knowledge, and then broadcast the embedded information to develop consumer bonding in information-based surrounding [15]. It is obvious that competition increases and intensifies day by day in the retail business for this reason companies are progressively diverting towards the functions of artificial intelligence as a method of distinction. The companies of Social Commerce industry are motile in the direction of unified technologies like chatbots and increasing real interactive technologies are better solutions for the service to consumers. With the use of these technologies of AI in retail environment marketers are able to know about engagement and attitude of the customers (Moriuchi et al., 2020). Further, AI technologies include driven image of computer vision for recognizing human face, forecasting inventory [16], Augmented Reality (AR), internet of things (IoT), Mixed Reality (MR), Virtual Reality (VR), subsidiary virtual assistants, systematic robots and chatbots, that are helpful in knowing the consumer's aptitude. It also altering the customer experiences [17]. AI in Social Commerce industry is used by the online retailers for focusing on visit bot management, interpret comments of customers, and provide help to online purchasers [18].

Consumer buying behavior is the process of substantial activities and decisions making about engaging, grabbing, usage and trashing of products and services by a consumer that helps to satisfy their needs and wants. This process of explication assists in future prediction of consumer buying behavior [19] [20]. The consumer's buying decision-making procedure includes five phases i.e. identification of needs, search for information, assessment of different choices, buying decision, and post-buying experiences. They show phases through which consumers travel their path prior to deciding about product intake. It is totally depends on the mind of a consumer if he wants to skip any phase of buying [21]. It's very difficult to understand consumer purchase behavior because it is completely based on the consumer's brain activities but only Artificial Intelligence facilitates digital platforms to understand the patterns of human mind. With the use of technology it is easier to analyze and predict consumer buying behavior. On digital platforms, consumers disclose their behavior attributes such as- necessities, wishes, and frame of mind or aptitude in various other aspects such as search on browser, annotations or comments, tweets, blogs, dislikes and likes, short videos or reels, and exchange of words or conversations, through different digital sources such as web browsers, face to face or mobile [22] [23].

For the survival in the new world, it is the prominent need of this hour is to develop one-on-one relationship with the user. The core of marketing depends on individual's mind and heart. The whole marketing process is completely based on intelligence and emotion. That is why we should offer dynamic advantages to consumers and always try to engage minds and also occupy their emotional space [24]. AI technologies make good relationship with user interaction and replacement. Replacement always facilitates marketers for satisfying the consumer experiences. In other words, the propinquity of satisfactory consumer journey and occurrence of the repurchase intention is very essential for marketers to grow [25]. The technologies of AI have powerful capability to improve the experiences of consumer at the time of shopping. Three factors which enhance experiences of consumers are commitment of good relationship, positive impact through trust on the companies and identifying sacrifices [26]. Artificial Intelligence plays a positive role in providing prominent facilities to consumers as it is a difficult task for convenience users to purchase products and services. AI represents a machine but it has the quality to make emotional connection with its users which help marketers to receive customer's emotional insights [27]. It helps the retailers to understand that how purchasers

perceive about the product and brand of their company. Artificial Intelligence makes easier to get more personal experiences of services by giving information about consumer perception and use that information to reach consumer's level of thinking. [28]. The main thing for any successful retailer is to satisfy their customer because customer satisfaction is a key to get success in business industry. Therefore, intrusion of AI avails predictions about the sequential pattern of consumer behavior and it leads in Social Commerce industry on the basis of analytics because of the huge amount and transformation of data making the route for artificial intelligence to pierce in the present time as amalgamation with data it strikes-up by significance to clarify. Artificial Intelligence helps in increasing sales in Social Commerce industry through creating copious personalized interaction in marketing and it uses different tools to alienate repetition and automatic procedures. It also provides opportunity to trade across multiple devices is by using artificial intelligence to eliminate redundancies and automate processes and enable trade in chitchat or discussion [29].

1.1 Structure of the Paper: This paper proceeds as follows. The next section presents a critical review of the related literature, followed by the development of hypotheses. Section three discusses the research methodology, including sampling design and data collection. Section four presents the results, including validity and reliability tests. Section five offers a discussion comparing current findings with past studies. The paper concludes with managerial implications, limitations, and future research directions.

2 Review of Related Literature- A Theoretical Background

Nowadays Artificial Intelligence is growing strenuously and that is why many researchers want to explore the impact of specious technology in the area of marketing. Explorers of market are keen to detect about Artificial Intelligence i.e., how AI works in consumer buying behavior to achieve higher level loyalty of customers and higher profits. This section scrutinizes most of the former studies about the advanced technology of Artificial Intelligence, experiences of customers, and finds the relation between Artificial intelligence and consumer buying behavior [30]. The confluence of artificial intelligence and social commerce has instigated a paradigm shift in consumer buying behavior, necessitating a comprehensive examination of recent scholarly contributions to understand the nuances of this evolving landscape [31]. The integration of AI in marketing, particularly within the digital domain, has witnessed a surge in interest since 2020, signaling its growing importance in shaping consumer engagement [32]. By synthesizing existing research, this review seeks to identify key themes, methodologies, and findings related to the application of AI in social commerce and its impact on consumer purchasing decisions. To fully appreciate the impact of AI, this review will dissect the underlying technological components, examining how machine learning algorithms, natural language processing techniques, and sophisticated data analytics pipelines converge to deliver personalized experiences, intelligent product recommendations, and enhanced customer journeys within the dynamic social commerce ecosystem [33]. This review serves as a valuable resource for researchers and practitioners alike, offering insights into the transformative potential of AI in social commerce and highlighting avenues for future exploration and innovation [26]. The analysis encompasses studies that investigate AI-driven personalization, customer relationship management, and the enhancement of customer experience and loyalty within the realm of social commerce [34].

2.1 Consumer Buying Behavior

[35] have stated that the process of choosing, protecting and disposing the usage goods, services, behaviors, experiences, or planning by individuals, cluster of people or organizations to propitiate their needs and wants which influence the consumer and society is called consumer behavior. Therefore, consumers' purchase products for personal or household consumption shows consumer behavior. [36] studied that nowadays organizations are trying to fulfill their moral duties by facilitating consumers with great services and good experiences in congruence to the expectations towards the company's products. [37] have conducted such research related to consumer behavior for comprehending buyers buying behavior patterns and decisions making processes by an individual or a group. It focuses on the features of sole consumer such as behavior patterns and demographic factors aiming to know about human wants. [21] have stated that the Industrial revolution 4.0 concerned with new advanced technology and internet technology has

influenced people for personalized communication, business activities, work practices, helping in understanding consumer buying behavior. This research is not only focused on consumer buying behavior patterns but also considers product buying predictions, buying frequency and aim of purchasing.

2.2 Impact of Artificial Intelligence on Consumer Buying Behavior

AI is the future of consumer satisfaction and business activities. The innovations are executed by business marketers and consumers interacting with them by giving responses toward new transformations [10]. It helps in improving customer relation with the company by receiving information about customer behavior which enhances marketers to improve the graph of sales. Artificial Intelligence plays a vital role in interpreting experiences of customers by explaining that artificial intelligence brings customer data to meet expected services of customers [38]. Moreover, [39] performed a study to analyze transformations occurring due to the execution of new advanced technology by leading retailers in the positive engagement of customers. This research based on quantitative data, concluded that Artificial Intelligence revealed a new reality of retailers which gives potentiality to the customer's services. AI completely gives authority to the customer to transfer loyalty from one company to another because of a wide variety of commodities and services it gives preferential experiences to customers.

Artificial Intelligence plays a vital role in experiences of customers. His study explained that artificial intelligence brings customer data to meet expected better services to the customers [38]. AI avails marketers to collect, analyze and interpret consumer data to get closer for understanding consumer buying behavior. Researchers have enlisted three ways to collect data of customers, firstly the consumer's data can be collected by the process of purchasing behavior of consumers; second way to collect data is the website and lastly, collection of data through the use of cloud services, secretly. This data helps in maintaining long relations with customers by creating more opportunities and beneficial offers for consumers which make them desire to purchase products. Collecting volumetric data also helps retailers to provide personalized delivery services. [40] examines that the collected data can be used for enhancement of chatbots. Chatbots are used to provide more close or personalized services like if the consumer has any problem or doubt regarding the product then it can be clarified. So, AI also helps in sharing consumer experience with the retailer, delivery agents, packaging quality etc. Authors found in the research that 51% of consumers considered that the market not closed 24/7 to assist their customers at any time. Artificial intelligence offers the opportunity to retailers to avail 24/7 customer support by using the human like robotics. This advanced technology offers retailers to enhance the relation with customers and win their loyalty towards their products. AI avails marketers to collect, analyze and interpret consumer data to get closer to the consumer buying behavior. For in-depth scrutiny of the extent of this impact, we have formulated the subsequent hypothesis.

H₀₁: There is no significant impact of Artificial Intelligence on Consumer Buying Behavior.

2.3 Factors Impacting Artificial Intelligence

2.3.1 Predicting the trend

The mutable behavior of customer is determined through different factors namely personal, interpersonal, group and environmental factors [41]. So, the behavior has a tendency to change frequently. Therefore, artificial intelligence techniques help in predicting trends of the consumer buying behavior as it has the capability to predict relevant accuracy. Artificial intelligence will spread on a greater extent and the increasing involvement of people shows that it will generate capacity to challenge technical aspects in business industry [42]. [43] determined that with the use of AI techniques in advertising will give a worthy confidence to the retailers about the transformation in business industry. Due to constantly modifying trends, the following sub-hypothesis has been framed.

H_{01.1}: There is no significant impact of predicting the trend (PT) on Consumer Buying Behavior (CBB).

2.3.2 Helping in Devising Effective

The advanced technology of Artificial Intelligence gives opportunity to increase interaction between retailers and the consumers [44]. More interaction through the technical devices helps to make ancillary environment for consumers to enjoy authority with value. All the online platforms where people get a chance to interact refer to marketing technology of Artificial Intelligence. In this research authors show that consumer mind is affective of satisfaction through the machine learning. With the aim of achieving this exactness, the next sub-hypothesis is formed.

H_{01.2}: There is no significant impact of helping Devising Effective (DE) on Consumer Buying Behavior (CBB).

2.3.3 Content Marketing

Presently, content marketing is observed as a great marketing tool for business industry that is why the researcher wants to explore this field. It is a type of strategic marketing which attracts consumers to buy authorized products with

relevant information [45]. So, Artificial intelligence helps in generating content for users which gives positive influence on consumer buying behavior. Therefore, [46] found that digital marketing has a great influence on consumer buying behavior which makes the interaction process of consumer and company more effective. Researchers have also explored that content marketing is used on a vast scale in digital marketing which is dependent on online consumer buying behavior. We have contributed in the existing literature by putting the following hypothesis to test.

H_{01.3}: There is no significant impact of Content Marketing (CM) on Consumer Buying Behavior (CBB).

2.3.4 Reshaping Customer Experience

In this period of Artificial Intelligence competition in the market is high. Now selling and buying is not the only marketing activity for retailers. Moreover, it includes providing better experience to the consumers by making them desirous to buy quality products [31]. AI helps retailers to focus on collecting consumer data and trying to achieve information about expected goods and services and give greater customer experience in short period of time. AI also offers the opportunity of Chatbots which is like virtual assistant of Artificial Intelligence technology, helpful in attaining consumers' needs and wants and reshaping consumer experiences so that they stay loyal with the company. This also aids in saving money and maintaining relations in between consumer and retailer. So, this relationship needs to be re-investigated through the hypothesis mentioned below.

H_{01.4}: There is no significant impact of Reshaping Customer Experiences (RCE) on Consumer Buying Behavior (CBB).

2.3.5 Customer Sentiment Analysis

Customer Sentiment Analysis is a technique of artificial intelligence concerning digital opinions, emotions, sentiments and written suggestions by the customers for specific company or retailer [47]. [48] examined that customer sentiment analysis helps companies in knowing the level of customer satisfaction. Levels of satisfaction of consumers may vary from one buyer to another. Under customer sentiment analysis technique of artificial intelligence, emotions should be categorized based on observation of feedback data and interpreting it for further business activities. It helps in identifying the likes and dislikes of different consumers regarding the company's products and services. Because of this, we found it necessary to formulate the sub-hypothesis mentioned below.

H_{01.5}: There is no significant impact of Customer Sentiment Analysis (CSA) on Consumer Buying Behavior (CBB).

2.3.6 Customer Prediction

Artificial intelligence is bound to be used on a large scale in business industry. It will expand and assist companies with advanced technology to succeed in the business environment, leaving behind all competitors [49]. According to the author, Artificial Intelligence has a capability to evaluate customers on a deeper level, predict consumer buying behavior by using small parts of information. It also helps in retaining customers by providing personal expected services and enhancing the relationship between company and consumer. Artificial Intelligence offers companies to maintain direct infusion with the consumers which helps in knowing about prediction of relationship and loyalty towards the respective brand. This core determinate shows customer prediction is important for knowing consumer buying behavior through Artificial Intelligence, leading us to the next hypothesis [50].

H_{01.6}: There is no significant impact of Customer Prediction (CP) on Consumer Buying Behavior (CBB).

2.4 Objectives of the Study

In this era, Artificial Intelligence is almost spread everywhere and in every field. So, it's important to know the business environment where marketers use Artificial Intelligence to understand consumer insights. The aim of this study is to detect the role of Artificial Intelligence in consumer buying behavior and determining the impact of Artificial Intelligence in Consumer Buying Behavior.

3 Research Methodology

The present research study is descriptive and analytical in nature. Data was collected through self-structured questionnaires which were developed on the basis of five steps as suggested [51]. 410 questionnaires were distributed but 374 responses were taken into account because the remaining questionnaires were incorrectly and/or incompletely filled. With the aim of making this study more logical and scientific, non-probability convenience and judgemental sampling are used. Sampling unit is chosen on the basis of Convenience sampling whereas sampling area is opted based on Judgemental sampling.

The questionnaire was developed based on established constructs and refined with expert input. The items were adapted from previous validated scales:

Table 1. Questionnaire Items Sources

Variable Name	Standardized Scale
Predicting Trends (PT)	Valecha et al. (2018)
Devising Effective (DE)	Yin & Qiu (2021)
Content Marketing (CM)	Christandl et al. (2019) and Ramesh & Vidhya (2020)
Reshaping Customer Experience (RCE)	
Customer Sentiment Analysis (CSA)	Pang & Lee (2008) and Oelke et al. (2009)
Customer Prediction (CP)	Zulaikha et al. (2021)
Consumer Buying Behavior (CBB)	Qazzafi (2019) and Kotler et al. (2017)

4 Result and Discussion

Table 2. Results and Discussion

Construct	Cronbach's Alpha
Predicting the Trend (PT)	0.81
Devising Effective (DE)	0.78
Content Marketing (CM)	0.84
Reshaping Customer Experience (RCE)	0.76
Customer Sentiment Analysis (CSA)	0.79
Customer Prediction (CP)	0.86
Consumer Buying Behavior (CBB)	0.83

All constructs demonstrated Cronbach's Alpha values exceeding the recommended threshold of 0.70 [52], indicating a high degree of internal consistency and scale reliability. Specifically, Customer Prediction ($\alpha = 0.86$) and Content Marketing ($\alpha = 0.84$) exhibited the highest reliability, suggesting robust measurement of these constructs. The lowest alpha value (RCE = 0.76) still meets the acceptable standard, supporting the overall measurement stability of the model.

Table No. 3. Results of Linear Regression Analysis

Variables	R	R ²	B	T	Sig
PT → CBB	0.428	0.177	0.422	4.005	0.000
DE → CBB	0.346	0.119	0.314	3.701	0.004
CM → CBB	0.520	0.270	0.551	5.121	0.000
RCE → CBB	0.321	0.103	0.365	2.803	0.007
CSA → CBB	0.337	0.11	0.391	2.907	0.008
CP → CBB	0.615	0.33	0.641	5.112	0.000

P-value is significant at 0.5 levels.

Artificial Intelligence independent variables are - Predicting the Trend (PT), Helping Devising Effective (DE), Content Marketing (CM), Reshaping Customer Experiences (RCE), Customer Sentiment Analysis (CSA), Customer Prediction (CP) and Consumer Buying Behavior (CBB) is a dependent variable.

The aforementioned table represents the statistics based on step by step regression analysis where determinants of Artificial Intelligence comprising of predicting the trend, helping devising effective, content marketing, reshaping

customer experiences, customer sentiment analysis, customer prediction were taken as independent variables and Consumer Buying Behavior was assumed to be the dependent variable. This analysis aided the researcher in identifying the relationship that existed between respective determinants of Artificial Intelligence and Consumer Buying Behavior. From Table No.3., it is obvious that Artificial Intelligence factors of prediction and trend have a significant impact on consumer buying behavior as evaluated through hypotheses which gives identical results thereby gaining acceptance ($p=0.000<0.5$), this indicates that Prediction and trend attract customers to buy products and services. These findings align with those of [41]. This is because of prediction about the trends by the retailer which is receives from collecting data with advanced technology of Artificial Intelligence. [44] [53] also confirmed that Artificial Intelligence factor devising effective ($p=0.004<0.5$), also had a significant impact on Consumers' Buying Behavior, as evaluated from the hypotheses which gives results in acceptance implying that effective use of artificial intelligence tools or devices to interact with customer eliminates their doubts and risks about products which encourages the consumers to repurchase from the same company. Effective devices of Artificial Intelligence also give opportunity to interact with users. Further it was found that other Artificial Intelligence attributes, content and marketing ($p=0.000<0.5$), had a significant impact on Consumers' buying behavior, evaluated from the hypotheses which gives results in acceptance implying that the sharing of relevant information, podcasts, videos and other media helps in to attract consumers by grabbing their attention towards the product and making them desire to buy products. his finding supports [54]. The other factors of Artificial Intelligence reshaping customer experiences ($p=0.007<0.5$), also had a significant impact on consumer buying behavior supported by Boguda and Shailaja (2019). It is observed through hypotheses which gives identical results thereby gaining acceptance implying that it decides whether a customer repurchases the product or not. If it was a positive experience then customer will liable to repurchase product of the company or if it was a negative experience then it is obvious the customer will move on to other companies. Customer sentiment analysis ($p=0.008<0.5$) factor of Artificial Intelligence gives a significant impact on consumer buying behavior, it is observed through hypotheses giving identical results in acceptance implying that customer sentiments analysis may be positive, negative or neutral which is automatically detected through Artificial Intelligence at the time of online search about the product. The result is also aligning with [47] [55]. It helps in showing the related availability products as customer wants to purchase creating desire to buy a product. The factor of Artificial Intelligence Customer Prediction ($p=0.000<0.5$), also had a significant impact on consumer buying behavior which is observed through hypotheses providing identical results in acceptance implying that prediction about the customer provides a positive way to deal with the customer which is only possible through Artificial Intelligence. This was also supported by [49] [56]. Customer prediction helps to obtain a desire to buy a product as like customer wants to buy. We recognize that Artificial Intelligence plays a significant role in creating the variations in consumer buying behavior and help in influencing customer's mind and heart.

5 Conclusion

Presently, all types of work are being done through online applications and with the advanced technology, Artificial Intelligence has now been used everywhere in this world. This study was conducted to detect the role artificial intelligence in consumer buying behavior. It is found that artificial intelligence has an important impact over consumer behavior. Artificial Intelligence avails the base for new transformation in marketing and use of content marketing, analysis of customer's sentiments, chatbots, reshaping experiences of customers, voice search engine, image search pages, suggesting products, predicting the trends, predictions about the customers' attitudes, effective devices or tools, and online buying or purchasing assistant in e-commerce. This leads to introduced deep learning, customer-centric search results, contingency of search, and personalization. Artificial Intelligence acts like a valuable customer support system for the users of Social Commerce and provides personalized services about customer's problems and grievances. Further, the study was conducted to determine the role of artificial intelligence in consumer buying behavior. Research shows that the characteristics of Artificial Intelligence such as collection of volumetric data, interpretation of data, voice search, personalized interaction, product suggestions, deep analysis, image search pages, reshaping customers experiences, chatbots, search engines, predictions about customers attributes, customer centric results, gives positive and forward-looking impact on consumers buying behavior. On the other side, data arrangement and online buying accessory have restricted effect over consumer buying behavior in relation to e-commerce. Artificial intelligence avails different advanced features in addition to use one with another.

6 Limitations and Future Work Directions

Despite the valuable insights provided by this study on the influence of consumer shopping behaviour on impulse buying with the mediating role of positive emotions, certain limitations must be acknowledged. First, the study is based on cross-sectional data, which limits the ability to draw causal inferences. Future research could employ

longitudinal designs to explore how consumer behaviour and emotional responses evolve over time. Second, the data was collected from a specific geographic and demographic segment, which may limit the generalizability of the findings. Expanding the study across diverse cultural and regional contexts would enhance the external validity of the results. Third, the study primarily focused on online consumer behaviour. Given the hybrid nature of modern retail, future research could examine impulse buying behaviour in omnichannel or purely offline settings for comparative insights. Fourth, while this study employed SEM-PLS to explore mediating effects, future studies could employ multi-group analysis (MGA) to examine whether the model holds across different consumer segments (e.g., gender, age, income groups). Lastly, future research could consider incorporating additional psychological or environmental variables (e.g., mood states, store atmospherics, or promotional strategies) to offer a more holistic understanding of impulse buying behaviour.

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