




Unraveling the Dynamics of Consumer Buying Behavior and the Role of Artificial Intelligence

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ABSTRACT

Consumer buying behavior involves the process of selecting, purchasing, and utilizing goods and services based on individual needs and desires. This behavior is influenced by various factors and can manifest in diverse ways. Despite the extensive research conducted in this field, there remains a gap in the literature concerning a comprehensive survey that covers a broad spectrum of studies and categorizes them into distinct domains. Addressing this gap, our study endeavors to provide a comprehensive overview by surveying and categorizing studies on impulse buying, panic buying, and hoarding. Additionally, we explore the impact of artificial intelligence (AI), customer satisfaction and loyalty, as well as green purchase behavior. Through this endeavor, we aim to offer valuable insights into the multifaceted nature of consumer behavior, thereby contributing to a deeper understanding of the subject and informing future research and practical applications in the field of marketing and consumer studies.

Keywords: Artificial intelligence, Consumer buying behavior, Impulse buying, Panic buying, Hoarding, Customer satisfaction, Green purchase.

1. Introduction

Consumer buying behavior refers to the analysis of how individuals decide to purchase products that meet their needs and desires (Toha & Supriyanto, 2023). This field examines the motivations and factors influencing consumer choices and usage patterns. Today, consumers are increasingly mindful of sustainability, making purchasing decisions with consideration for environmental impact, societal benefit, and economic advancement (Zaman & Kusi-Sarpong, 2024). For marketers, gaining insights into consumer buying behavior is crucial as it enables them to understand customer expectations and tailor their strategies accordingly (Biswas & Patrab, 2023).

Various studies have been conducted to examine consumer buying behavior from multiple perspectives.

Abdelsalam et al. (Abdelsalam et al., 2020) conducted a comprehensive review of studies on online impulse buying behavior within the realm of social commerce. They examined various factors that influence impulse buying behavior and analyzed the common research methods used in these studies. Additionally, they proposed a causal-chain framework to better understand the dynamics of online impulse buying. Jazemi et al. (Jazemi et al., 2024) provides insights into panic buying during pandemics, including factors influencing it, stockpiling behaviors, and potential intervention strategies.

Sima et al. (Sima et al., 2020) presented a comprehensive review of existing research on how the Industry 4.0 Revolution affects human capital development and consumer behavior. Mariani et al. (Mariani et al., 2022) contributed a holistic examination of the corpus of

literature concerning artificial intelligence (AI) across marketing, consumer research, and psychology domains, providing an integrated viewpoint on this subject. Vlačić et al. (Vlačić et al., 2021) presented a comprehensive survey of the evolution of marketing and AI research, delineating key areas for further investigation. These encompass AI adoption, data security, ethical considerations, institutional backing, and the ramifications for the job market and marketers' skill sets.

Despite numerous studies on consumer buying behavior, there remains a lack of comprehensive surveys that provide insights across various domains and cover a wide range of areas. To address this gap, our study reviews key aspects of consumer buying behavior research by examining many studies and presenting detailed examples with diverse objectives. Our main contributions include:

- Classification of different aspects of consumer buying behavior into closely related and similar concepts, the role of AI, customer satisfaction and loyalty, and green purchase behavior.

- Examination and clarification of similar and commonly interchanged concepts in the consumer buying behavior domain, such as impulse buying, panic buying, and hoarding, along with a review of studies on each concept.
- Coverage of a broad range of studies with different objectives, ensuring a comprehensive review of various influencing factors.
- Focus on the most recent studies, from 2020 to 2024, to provide up-to-date insights.

2. Closely related and similar concepts

In consumer buying behavior, there are several analogous concepts such as impulse buying, panic buying, and hoarding, as depicted in Figure 1. Each of these concepts delineates a distinct behavior and actions exhibited by customers, which will be explored further in the subsequent sections.

Figure 1

Related concept in consumer buying behavior



2.1. Impulse buying

According to Stern (Stern, 1962), impulse buying is characterized as a compelling, unplanned, and hedonically complex behavior exhibited by consumers during the purchasing process. Many shoppers make purchases that are unplanned and spontaneous, driven by strong desires and feelings of pleasure and excitement (Abdelsalam et al., 2020).

Zhang et al. (Zhang et al., 2022) investigated how hunger marketing in live commerce influences consumers' impulse buying behavior. Grounded in the Stimulus-

Organism-Response (SOR) theory, they analyzed external stimulus variables like anchor characteristics and online comments. Results showed hunger marketing's significant impact on impulse buying, mediated by perceived trust and value.

Ming et al. (Ming et al., 2021) explored how social presence impacts impulse buying behavior in live streaming commerce, employing the SOR framework. They surveyed 405 Chinese consumers engaged in live streaming shopping, finding that dimensions of social presence significantly influenced trust and flow state, ultimately leading to impulsive buying.

Singh et al. (Singh et al., 2023) investigated the impact of social media on impulse buying behavior, particularly focusing on Saudi Arabian consumers' engagement with social networking sites (SNS) in the context of online shopping. Through a quantitative study involving 342 active social media users in Saudi Arabia, the researchers employed Partial Least Squares Structural Equation Modeling (PLS-SEM) to analyze the data. Their findings revealed that Social Media Advertising (SMA) significantly influences Impulse Buying Intention, whereas Social Media Community (SMC) did not show a significant effect on Impulse Buying Intention.

2.2. *Panic buying*

Panic buying refers to the sudden surge in purchasing goods or commodities beyond regular needs, often driven by fear, uncertainty, or external factors such as emergencies, crises, or perceived shortages (Holguín-Veras et al., 2023; Saleem & Saleem, 2022). This behavior typically results in increased demand for certain products, leading to supply shortages, price hikes, and disruption of the normal market equilibrium (Ovezmyradov, 2022; Rajkumar & Arafat, 2021).

de Brito Junior et al. (de Brito Junior et al., 2023) investigated the phenomenon of panic buying during the pandemic, focusing on retail sales data from 144 stores of two major retailers in São Paulo, Brazil. They analyzed the sudden surge in purchasing behavior, characterized by buying products in quantities significantly higher than regular needs, just before the implementation of government measures to curb the spread of the SARS-CoV-2 virus. The study revealed variations in sales levels across different product types and found that sales increased more significantly in areas with higher average per capita income.

Chen et al. (Chen et al., 2022) conducted research to understand panic buying behavior in the context of the pandemic, focusing on the sudden surge in purchasing goods beyond regular needs. Their objective was to identify the factors influencing individual buying behavior and construct a model for group panic buying. Using a quantitative approach, they examined both internal and external factors affecting individual buying behavior and developed an emergence model for group panic buying based on cluster dynamics. The study highlights the disruptive impact of large-scale panic buying during COVID-19 on the balance between supply and demand,

emphasizing the importance of analyzing and addressing group panic buying for maintaining social stability.

Islam et al. (Islam et al., 2021) focused on how Limited Quantity Scarcity (LQS) and Limited Time Scarcity (LTS) during the COVID-19 pandemic influenced consumers' emotional arousal and subsequent impulsive and obsessive buying behaviors. Conducted across multiple countries, their study found that both LQS and LTS significantly increased perceived arousal, leading to heightened impulsive and obsessive buying. Excessive social media use exacerbated this effect. The findings underscore the importance of understanding scarcity-related stimuli on consumer behavior, offering insights for managing panic buying during crises.

2.3. *Hoarding*

Hoarding refers to the excessive accumulation of possessions or goods beyond what is necessary or reasonable. It often involves the persistent difficulty in discarding or parting with items, regardless of their actual value or usefulness (Hulber, 2020). Hoarding behavior can lead to clutter and disorganization in living spaces, which may interfere with daily activities and cause distress or impairment in functioning (El-Sayed et al., 2024; Nutley et al., 2022).

Yoshino et al. (Yoshino et al., 2021) investigated the relationship between personality traits and hoarding behavior during the COVID-19 pandemic among Japanese adults in Tokyo. Through an online survey of 530 participants, they found that personality traits such as Extraversion, Neuroticism, Openness, and dispositional greed were positively associated with hoarding tendencies. Individuals with high levels of Agreeableness, Neuroticism, Openness, and dispositional greed were more inclined to hoard essential items. These associations remained significant even after controlling for perceived vulnerability to disease and demographic factors.

Zhang et al. (Zhang et al., 2021) analyzed hoarding behaviors during the COVID-19 pandemic by examining hoarding-related tweets on social media. Their study aimed to understand how these behaviors manifested during the crisis. They collected and analyzed data from over 42,000 Twitter users in the United States, revealing insights into gender distribution, geographic variations, and anxiety levels associated with hoarding-related tweets. The study also identified beer as having the highest anxiety score among hoarded items mentioned. This research provides

valuable insights into consumer behaviors during crises and demonstrates the usefulness of computational methods in analyzing real-time social media data.

Table 1 provides a comprehensive summary of studies focusing on three distinct behaviors: impulse buying, panic

buying, and hoarding. Each study explores different aspects of these behaviors, including their definitions, influencing factors, prevalence, and potential interventions.

Table 1

Summary of studies in related concepts

Ref.	Year	Data	Objective	Target country	Concept
(Singh et al., 2023)	2023	342 users	Social media	Saudi Arabia	Impulse buying
(de Brito Junior et al., 2023)	2023	144 stores	Consumer Income and Product Type	Brazil	Panic buying
(Zhang et al., 2022)	2022	533 online consumers	Live commerce	China	Impulse buying
(Chen et al., 2022)	2022	12,610 Weibo comments	Group panic buying	China	Panic buying
(Ming et al., 2021)	2021	405 consumers	Live streaming platforms	China	Impulse buying
(Islam et al., 2021)	2021	China: 151, U.S: 335, India: 334, Pakistan: 261 questionnaires	Effect emotional arousal	China, U.S., India, Pakistan	Panic buying
(Yoshino et al., 2021)	2021	530 adults	Link between personality and hoarding	Japan	Hoarding
(Zhang et al., 2021)	2021	42,000 unique Tweets	Social media	U.S	Hoarding

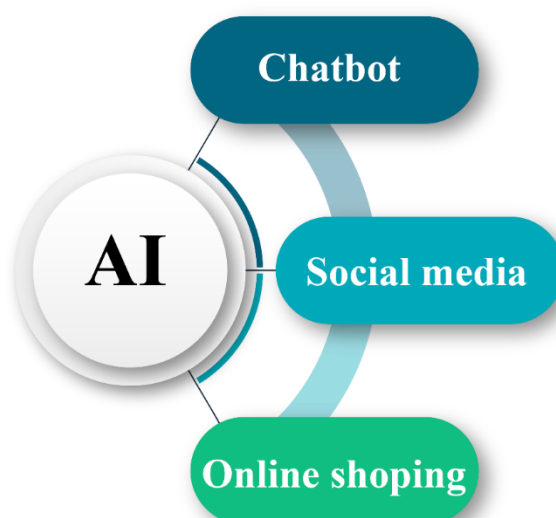
3. The role of artificial intelligence

In recent years, the landscape of customer buying behavior has been significantly influenced by the integration of AI technologies. AI has revolutionized how businesses interact with consumers, offering personalized recommendations, tailored advertisements, and streamlined

customer service experiences (Ameen et al., 2021; Campbell et al., 2020). Figure 2 offers a structure for analyzing how AI impacts various aspects of commerce, focusing on three specific perspectives: chatbots, social media, and online shopping.

Figure 2

Different aspect affected by AI



Beyari and Garamoun study (Beyari & Garamoun, 2022) aimed to understand how specific AI tools, including machine learning, purchase duration, social product recommendation, and social media dependency, impact end-user purchasing decisions. Combining the Unified Theory of Acceptance and Use of Technology (UTAUT) and the Theory of Reasoned Action, they conducted an online survey with 148 customers in Saudi Arabia and analyzed the data using Structural Equation Modeling (SEM). The key findings revealed that machine learning, purchase duration, and product recommendation were associated with the consideration set, and customer consideration sets significantly influenced end-user purchase decisions in the online context.

Olan et al. (Olan et al., 2021) investigated how AI technologies influence consumer attitudes and behaviors, with a specific focus on knowledge sharing. Through data collected from 291 participants and utilizing the fsQCA technique, they developed a meta-framework incorporating AI, consumer behavior, and knowledge sharing concepts. Their findings suggest that AI enhances consumer attitudes and behaviors by facilitating knowledge acquisition, particularly through online communities. Moreover, engagement in knowledge sharing activities fosters consumer curiosity and involvement.

Xiong's study (Xiong, 2022) investigated how AI and the digital economy influence consumer behavior in online shopping. It highlighted the significant growth of e-commerce and its impact on business models and international competitiveness. The research found that online shopping is popular across all age groups, especially among young consumers who shop frequently.

Ameen et al. (Ameen et al., 2021) focused on how AI integration in shopping enhances AI-enabled customer experiences. Using a theoretical model based on trust-commitment theory and the service quality model, the study examined the roles of trust, perceived sacrifice, and relationship commitment. An online survey of 434 customers who used AI-enabled services from beauty brands was analyzed with PLS-SEM. The findings highlighted that trust and perceived sacrifice significantly mediate the effects of perceived convenience, personalization, and AI-enabled service quality on customer experiences. Additionally, relationship

commitment directly influences these AI-enabled experiences.

Jiang et al. (Jiang et al., 2022) examined the impact of chatbot communication on customer experiences, using social exchange theory and resource exchange theory as theoretical foundations. They investigated how responsiveness and a conversational tone in chatbot interactions influence customer satisfaction and social media engagement. The study surveyed 965 U.S. customers and utilized SEM to validate the measurement model and test the proposed mediation model. Key findings revealed that responsiveness and conversational tone significantly enhance customer satisfaction with chatbot services, which in turn boosts social media engagement. This engagement positively affects purchase intention and price premium.

Jan et al. (Jan et al., 2023) investigated the factors influencing customers' usage and resistance to AI-based conversational agents for shopping, focusing on both text-based and voice-based chatbots. Utilizing the extended behavioral reasoning theory (BRT), which includes factors like technology readiness, trust, perceived usefulness, and ease of use, the study aimed to understand customer behavior toward these AI tools. The researchers conducted two empirical studies in South Korea, with 232 participants for text-based chatbots and 234 for voice-based chatbots. The findings supported the hypotheses, showing that customer motivation, attitudes, and behavioral intentions are crucial for the adoption of AI conversational agents.

Yeo et al. (Yeo et al., 2022) examined how AI-powered digital technologies affect Instagram users' decisions to purchase fashion apparel, using the Engel-Kollat-Blackwell (EKB) theory as a framework. This theory considers factors such as perceived electronic word of mouth (eWOM), emotional value, quality, risk, and price. The study collected data from Instagram users and analyzed it using SEM and semi-structured in-depth interviews. Key findings revealed that perceived emotional value significantly and positively influences purchase decisions, while perceived quality also plays a crucial role in user satisfaction. The Importance-Performance Matrix Analysis (IPMA) highlighted perceived emotional value as the most critical factor, despite perceived quality having the highest performance.

Table 2 provides an overview of these studies, highlighting their key features.

Table 2

The studies with focus on AI

Ref.	Year	Data	Objective	Target country/ Data source
(Jan et al., 2023)	2023	232 participants for text-based and 234 for voice-based chatbots	Factors influencing customers' usage of chatbots for shopping	South Korea
(Beyari & Garamoun, 2022)	2022	148 customers	Purchasing intentions	Saudi Arabia
(Xiong, 2022)	2022	100 netizens	Online shopping	China
(Jiang et al., 2022)	2022	965 customers	Impact of chatbot communication	U.S
(Yeo et al., 2022)	2022	202 Instagram users	Instagram users' decisions to purchase fashion apparel	Malaysia
(Olan et al., 2021)	2021	291 participants	Knowledge sharing by consumer	Across the globe
(Ameen et al., 2021)	2021	434 customers	Customer experiences	Customers of a beauty European brand

4. Customer satisfaction and loyalty

Customer buying behavior encompasses the decision-making processes and actions of consumers when they purchase goods or services (Alhalalmeh et al., 2022). Understanding these behaviors is critical for businesses aiming to meet consumer needs and enhance satisfaction (Woo et al., 2021). Customer satisfaction, which reflects the degree to which a product or service meets or exceeds expectations, is closely linked to brand loyalty. Satisfied customers are more likely to return, make repeat purchases, and recommend the brand to others (Lysenko-Ryba & Zimon, 2021; Uzir et al., 2021).

Moon et al. (Moon et al., 2021) explored the impact of online shopping behavior and customer satisfaction in the e-commerce sector. They utilized a machine learning approach to analyze data from 40,000 online shopping transactions, aiming to understand the factors influencing customer satisfaction. Key factors identified included product quality, price comparison, clear return policies, and timely delivery. The study employed various classification algorithms such as Naïve Bayes, Apriori, Decision Tree, and Random Forest, with Apriori achieving the highest accuracy at 88%.

Miao et al. (Miao et al., 2022) investigated the factors influencing consumers' repurchase intentions in the context of Business-to-Consumer (B2C) e-commerce, considering the significant growth of online shopping. The study focused on three main factors: e-customer satisfaction, e-trust, and perceived value. Data were collected from e-customers and analyzed using SEM. The key findings revealed that high e-customer satisfaction positively influences repurchase intentions, indicating that satisfied customers are more likely to return. E-trust in the e-

commerce platform also significantly impacts repurchase intentions, as trust fosters customer loyalty. Additionally, perceived value, or the value consumers believe they receive from their purchases, strongly correlates with repurchase intentions.

Khatoun et al. (Khatoun et al., 2020) explored how E-banking service quality dimensions influence customer purchasing intentions, with customer satisfaction acting as a mediator. Using data from bank employees and customers in Qatar, the study examined the impact of reliability, efficiency, responsiveness, communication, security, and privacy on purchasing intentions. The results showed that all these service quality dimensions positively affect purchasing intentions, and customer satisfaction partially mediates this relationship.

Tzeng et al. (Tzeng et al., 2021) examined how retail service features impact consumer satisfaction during China's Singles' Day (SD), the world's largest online shopping event. Noting rising consumer dissatisfaction, the study aimed to identify factors influencing satisfaction. Through a two-phase survey involving 594 participants from top online product categories, the researchers assessed both positive and negative influences. They found that high information quality, superior product quality, and perceived savings enhance customer satisfaction, while issues with product returns decrease satisfaction. However, good after-sale service can mitigate the dissatisfaction caused by returns.

Camilleri et al. (Camilleri & Filieri, 2023) investigated the impact of online consumer reviews on customer satisfaction and loyalty, focusing on factors that influence revisit intentions. The study aimed to understand how the credibility, content quality, and usefulness of online reviews affect customer satisfaction and loyalty. Using data

from 512 participants and a partial least squares approach to analyze causal effects, the researchers found that information usefulness is a strong predictor of customer satisfaction. They also discovered that information quality significantly influences satisfaction when mediated by information usefulness.

Zaato et al. (Zaato et al., 2023) focused on the relationship between antecedent factors and brand loyalty within the context of the Shopee application, a popular online shopping platform in Malaysia. The study aimed to understand how customer happiness and brand loyalty impact long-term performance. Data were gathered from

298 university students who use Shopee, and the analysis was conducted using PLS-SEM. The researchers examined several antecedent factors influencing brand loyalty, including delivery accuracy, delivery pricing, information quality, and ease of payment.

Table 3 summarizes the key findings from various studies on customer buying behavior, satisfaction, and loyalty. These studies, spanning different sectors of e-commerce and banking, reveal a multitude of factors that influence customer satisfaction and their likelihood to revisit.

Table 3

The studies that examined customer satisfaction and loyalty

Ref.	Year	Data	Objective	Target country/ Data source
(Camilleri & Filieri, 2023)	2023	512 participants	Revisit intentions	Social media
(Zaato et al., 2023)	2023	298 participants	Customer satisfaction in the antecedent factors of brand loyalty	Kelantan university students, Malaysia
(Miao et al., 2022)	2022	415 questionnaires	Consumers' repurchase intentions in B2C	Students of leading business universities of Karachi
(Moon et al., 2021)	2021	40,000 shopping transactions	Factors influencing customer satisfaction	Online shopping websites
(Tzeng et al., 2021)	2021	594 participants	Online shopping festival	China
(Khatoun et al., 2020)	2020	235 questionnaires	E-banking service quality	Different banks of Qatar

5. Green purchase behavior

Green purchase behavior (GPB) involves choosing products that are environmentally sustainable, focusing on reducing the negative effects of consumer activities on the environment (Qureshi et al., 2023). Yuen et al. (Yuen et al., 2023) found that people who engage with online environmental platforms tend to adopt more sustainable practices, such as recycling and opting for reusable products.

Rana et al. (Rana et al., 2024) investigated the influence of online environmental platforms (OEPS) on GPB, focusing on how these platforms affect consumers' environmental attitudes, price sensitivity, and impulsive buying tendencies. They highlighted challenges in Pakistan, such as limited awareness, availability of eco-friendly products, and greenwashing. Using data from 301 customers aged 30-50, the study found that OEPS significantly enhance ecological shopping behaviors and attitudes but that price sensitivity can impede green purchasing. The impact of OEPS is mediated by consumers' environmental attitudes and impulsiveness. The findings

suggest that marketers can boost green purchase behaviors and increase sales by effectively utilizing OEPS.

Palmieri et al. (Palmieri et al., 2024) investigated factors affecting consumer behavior in Italy, focusing on green and digital influences. They conducted an online survey with 650 respondents and used SEM to analyze the data. The study found that social attitudes and green values significantly impact eco-friendly consumption, while digital channel preferences enhance both green and overall buying behaviors. Green advertisements had a minimal effect. These insights suggest that marketers should consider these factors for effective targeting and promotion of sustainable products.

Kamalanon et al. (Kamalanon et al., 2022) developed an expanded Theory of Planned Behavior (TPB) model to delve into the complexities of consumers' decisions to purchase green products. By incorporating environmental concerns, consumer innovativeness, and company image perceptions into the traditional TPB framework, the study sought to elucidate the motivations behind green purchasing. Their research, based on data collected from 974 respondents via online questionnaires distributed through Amazon MTurk, utilized SEM with Smart PLS for

analysis. They found that green purchase intention significantly influenced actual green purchasing behavior, particularly in developing countries. Key antecedents of purchase intention included attitudes toward green products and perceived consumer effectiveness, while subjective norms had no direct impact. Interestingly, the company's perceived green image played a crucial mediating role, linking various factors to purchase intention.

Witek and Kuźniar (Witek & Kuźniar, 2020) conducted a comprehensive study investigating how sociodemographic factors influence consumers' green purchasing behavior. Their research examined variables such as gender, age, education level, personal financial situation, and family size. Key findings highlighted that female consumers generally held more positive attitudes towards green products compared to males. Additionally, younger consumers tended to exhibit more skepticism towards green purchases. Higher education correlated with prioritizing personal needs over environmental concerns, while individuals with better financial situations showed a stronger inclination towards buying green products.

Naz et al. (Naz et al., 2020) conducted a study focusing on assessing the green buying behavior among university students in Hungary, recognizing the importance of understanding the purchasing behavior of young and educated consumers. Data was collected from 1185 university students, and analysis was performed using multiple regression and exploratory factor analysis (EFA). The key factors influencing GPB were identified as Willingness to Pay (WTP) and Green Purchase Intention (GPI), with Environmental Knowledge (EK) also playing a significant and positive role. Interestingly, demographic variables such as age, gender, and qualification did not show significant influence on GPB. The findings suggest that young students, regardless of demographic differences, possess sufficient environmental knowledge and are highly willing to pay for environmentally friendly products.

Wang et al. (Wang et al., 2022) conducted a study to explore how positive emotions influence consumers' green purchase behavior. Their research introduced four distinct positive emotional appeals - Cherishing, Yearning, Proud, and Admiring - and examined their impact on consumers' perceptions and actions related to environmentally friendly products. The findings revealed that all four emotional appeals positively influenced consumers' perceived green value, perceived green responsibility, and actual green purchasing decisions. Moreover, perceived green value and perceived green responsibility were identified as key

mediators in the relationship between positive emotional appeals and green purchase behavior. Additionally, the study highlighted the moderating role of the middle doctrine in shaping consumers' perceptions of green value.

Ogiemwonyi et al. (Ogiemwonyi et al., 2023) investigated the determinants of consumers' GPB and the mediating role of environmental attitude. They collected data from 375 consumers through a survey and analyzed it using SEM. The study found that subjective norms, awareness of consequences, and environmental attitude directly influenced GPB, while environmental concern and responsibility indirectly affected GPB through environmental attitude. However, direct effects of environmental concern and responsibility were insignificant, and subjective norms did not significantly impact GPB through environmental attitude.

Kumar et al. (Kumar et al., 2023) explored consumer behavior towards environmentally friendly products, focusing on the impact of ethical obligation and green self-identity on purchase intentions. Through data collected from 386 consumers in northern India and analyzed via SEM, they found that attitudes towards green products, perceived behavioral control, green self-identity, and ethical obligation significantly influenced green purchase intentions. Notably, ethical obligation influenced intentions through attitudes, and green self-identity moderated the relationship between attitude and intentions. The study underscores the importance of considering these factors in designing sustainable marketing strategies.

Yang et al. (Yang et al., 2023) investigated the factors influencing conscious GPB during the COVID-19 pandemic. They developed a framework based on the SOR paradigm, considering the moderating effect of negative environmental affective reactions (NEAR) related to COVID-19. Through data collected from urban residents in China, they found that media and peer influences significantly activated altruistic and egoistic motivations for green purchasing. However, family influence was not significant. Altruistic and egoistic motivations mediated the relationships between GPB and media exposure and peer influence. Negative affective reactions negatively moderated the formation of conscious GPB, with peers exerting a stronger influence than media.

By conducting a comprehensive review of GPB studies, as outlined in Table 4, we encompass a diverse array of research conducted in various countries, employing primarily questionnaire-based data collection methods. These studies explore a multitude of factors influencing

GPB, ranging from the influence of online platforms and consumer decision-making processes to the impact of sociodemographic variables, positive emotions, ethical obligations, and even crises such as the COVID-19

pandemic. Through this extensive examination, we gain insights into the intricate dynamics shaping consumers' behaviors towards environmentally friendly purchases across different contexts and under various circumstances.

Table 4

Summary of Green purchase behavior studies

Ref.	Year	Data	Objective	Target country/ Data source
(Rana et al., 2024)	2024	301 customers	The influence of online environmental platforms on GPB	Pakistan
(Palmieri et al., 2024)	2024	650 respondents	Focusing on aspects related to green and digital behavior	Italy
(Ogiemwonyi et al., 2023)	2023	375 consumers	Consumers' GPB and the mediating role of environmental attitude	Malaysia
(Kumar et al., 2023)	2023	386 consumers	the impact of ethical obligation and green self-identity on purchase intentions	India
(Yang et al., 2023)	2023	559 valid responses out of 616 responses	Factors influencing conscious GPB during the COVID-19 pandemic	China
(Kamalanon et al., 2022)	2022	974 valid responses out of 1000 responses	Complexities of consumers' decisions to purchase green products	Amazon Mechanical Turk (MTurk)
(Wang et al., 2022)	2022	433 valid questionnaires	Relationship between positive emotions and green purchase behavior	Randomly distributed to the respondents through the Internet.
(Witek & Kuźniar, 2020)	2020	650 consumers	The effect of sociodemographic factors on consumers' green purchasing behavior	Poland
(Naz et al., 2020)	2020	1185 university students	Understanding the purchasing behavior of young and educated consumers	Hungary

6. Conclusion

Our study has provided a comprehensive exploration of consumer buying behavior, shedding light on its various dimensions and influences. Through an extensive review of existing literature, we have identified and categorized key factors shaping consumer behavior, including impulse buying, panic buying, and hoarding. Additionally, we have examined the role of AI, customer satisfaction and loyalty, and green purchase behavior in influencing consumer decisions. By synthesizing findings from diverse studies, this paper offers valuable insights into the complex interplay of factors that drive consumer behavior in today's dynamic marketplace. Moreover, our analysis highlights the need for further research and exploration in this field to better understand and anticipate evolving consumer preferences and trends. Ultimately, by gaining a deeper understanding of consumer buying behavior, businesses and marketers can develop more effective strategies to meet consumer needs and enhance overall satisfaction and loyalty.

Authors' Contributions

M. H. contributed to the conceptualization, literature review, and manuscript drafting. H. H. assisted in the design of the study, data analysis, and interpretation of the findings. S. S. H. helped with categorizing the studies, synthesizing the results, and writing the conclusion. All authors reviewed, revised, and approved the final manuscript.

Declaration

In order to correct and improve the academic writing of our paper, we have used the language model ChatGPT.

Transparency Statement

Data are available for research purposes upon reasonable request to the corresponding author.

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Declaration of Interest

The authors report no conflict of interest.

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Ethical Considerations

Not applicable.

References

- Abdelsalam, S., Salim, N., Alias, R. A., & Husain, O. (2020). Understanding online impulse buying behavior in social commerce: a systematic literature review. *IEEE Access*, 8, 89041-89058. <https://doi.org/10.1109/ACCESS.2020.2993671>
- Alhalalmeh, M., Alkhawaldah, R. A., Mohammad, A., Al-Quran, A., Hijjawi, G., & Al-Hawary, S. (2022). The effect of selected marketing activities and promotions on the consumers buying behavior. *Business: Theory and Practice*, 23(1), 79–87. <https://doi.org/10.3846/btp.2022.13929>
- Ameen, N., Tarhini, A., Reppel, A., & Anand, A. (2021). Customer experiences in the age of artificial intelligence. *Computers in Human Behavior*, 114, 106548. <https://doi.org/10.1016/j.chb.2020.106548>
- Beyari, H., & Garamoun, H. (2022). The effect of artificial intelligence on end-user online purchasing decisions: Toward an integrated conceptual framework. *Sustainability*, 14(15), 9637. <https://doi.org/10.3390/su14159637>
- Biswas, K., & Patrab, G. (2023). Role of Artificial Intelligence (AI) in Changing Consumer Buying Behaviour. *Int. J. Res. Publ. Rev.*, 4(02), 943-951. <https://doi.org/10.55248/gengpi.2023.4227>
- Camilleri, M. A., & Filieri, R. (2023). Customer satisfaction and loyalty with online consumer reviews: Factors affecting revisit intentions. *International Journal of Hospitality Management*, 114, 103575. <https://doi.org/10.1016/j.ijhm.2023.103575>
- Campbell, C., Sands, S., Ferraro, C., Tsao, H.-Y. J., & Mavrommatis, A. (2020). From data to action: How marketers can leverage AI. *Business Horizons*, 63(2), 227-243. <https://doi.org/10.1016/j.bushor.2019.12.002>
- Chen, T., Jin, Y., Yang, J., & Cong, G. (2022). Identifying emergence process of group panic buying behavior under the COVID-19 pandemic. *Journal of Retailing and Consumer Services*, 67, 102970. <https://doi.org/10.1016/j.jretconser.2022.102970>
- de Brito Junior, I., Yoshizaki, H. T. Y., Saraiva, F. A., Bruno, N. d. C., da Silva, R. F., Hino, C. M., Aguiar, L. L., & Ataide, I. M. F. d. (2023). Panic buying behavior analysis according to consumer income and product type during COVID-19. *Sustainability*, 15(2), 1228. <https://doi.org/10.3390/su15021228>
- El-Sayed, M. M., Taha, S. M., Abd-Elhay, E. S., Sonbol, H. M., Amin, S. M., & Hawash, M. M. (2024). Cluttered spaces, strained bonds: Examining the correlation between hoarding symptoms and social functioning among long-term care facilities older adult residents. *Geriatric Nursing*, 57, 23-30. <https://doi.org/10.1016/j.gerinurse.2024.03.002>
- Holguín-Veras, J., Encarnación, T., Pérez-Guzmán, S., Cantillo, V., & Calderón, O. (2023). The role and potential of trusted change agents and freight demand management in mitigating “Panic Buying” shortages. *Transportation Research Interdisciplinary Perspectives*, 19, 100792. <https://doi.org/10.1016/j.trip.2023.100792>
- Hulber, C. (2020). Digital collection: What makes it different from digital hoarding. *The University of Birmingham, School of Computer Science. Published MSc Thesis*, 1-92.
- Islam, T., Pitafi, A. H., Arya, V., Wang, Y., Akhtar, N., Mubarik, S., & Xiaobei, L. (2021). Panic buying in the COVID-19 pandemic: A multi-country examination. *Journal of Retailing and Consumer Services*, 59, 102357. <https://doi.org/10.1016/j.jretconser.2020.102357>
- Jan, I. U., Ji, S., & Kim, C. (2023). What (de) motivates customers to use AI-powered conversational agents for shopping? The extended behavioral reasoning perspective. *Journal of Retailing and Consumer Services*, 75, 103440. <https://doi.org/10.1016/j.jretconser.2023.103440>
- Jazemi, R., Farahani, S., Otieno, W., & Jang, J. (2024). Review on Panic Buying Behavior during Pandemics: Influencing Factors, Stockpiling, and Intervention Strategies. *Behavioral Sciences*, 14(3), 222. <https://doi.org/10.3390/bs14030222>
- Jiang, H., Cheng, Y., Yang, J., & Gao, S. (2022). AI-powered chatbot communication with customers: Dialogic interactions, satisfaction, engagement, and customer behavior. *Computers in Human Behavior*, 134, 107329. <https://doi.org/10.1016/j.chb.2022.107329>
- Kamalanon, P., Chen, J.-S., & Le, T.-T.-Y. (2022). “Why do we buy green products?” An extended theory of the planned behavior model for green product purchase behavior. *Sustainability*, 14(2), 689. <https://doi.org/10.3390/su14020689>
- Khatoun, S., Zhengliang, X., & Hussain, H. (2020). The Mediating Effect of customer satisfaction on the relationship between Electronic banking service quality and customer Purchase intention: Evidence from the Qatar banking sector. *SAGE Open*, 10(2), 2158244020935887. <https://doi.org/10.1177/2158244020935887>
- Kumar, R., Kumar, K., Singh, R., Sá, J. C., Carvalho, S., & Santos, G. (2023). Modeling Environmentally Conscious Purchase Behavior: Examining the Role of Ethical Obligation and Green Self-Identity. *Sustainability*, 15(8), 6426. <https://doi.org/10.3390/su15086426>
- Lysenko-Ryba, K., & Zimon, D. (2021). Customer behavioral reactions to negative experiences during the product return. *Sustainability*, 13(2), 448. <https://doi.org/10.3390/su13020448>
- Mariani, M. M., Perez-Vega, R., & Wirtz, J. (2022). AI in marketing, consumer research and psychology: A systematic literature review and research agenda. *Psychology & Marketing*, 39(4), 755-776. <https://doi.org/10.1002/mar.21619>
- Miao, M., Jalees, T., Zaman, S. I., Khan, S., Hanif, N.-u.-A., & Javed, M. K. (2022). The influence of e-customer satisfaction, e-trust and perceived value on consumer's repurchase intention in B2C e-commerce segment. *Asia Pacific Journal of Marketing and Logistics*, 34(10), 2184-2206. <https://doi.org/10.1108/APJML-03-2021-0221>
- Ming, J., Jianqiu, Z., Bilal, M., Akram, U., & Fan, M. (2021). How social presence influences impulse buying behavior in live streaming commerce? The role of SOR theory. *International Journal of Web Information Systems*, 17(4), 300-320. <https://doi.org/10.1108/IJWIS-02-2021-0012>
- Moon, N. N., Talha, I. M., & Salehin, I. (2021). An advanced intelligence system in customer online shopping behavior

- and satisfaction analysis. *Current Research in Behavioral Sciences*, 2, 100051. <https://doi.org/10.1016/j.crbeha.2021.100051>
- Naz, F., Oláh, J., Vasile, D., & Magda, R. (2020). Green purchase behavior of university students in Hungary: An empirical study. *Sustainability*, 12(23), 10077. <https://doi.org/10.3390/su122310077>
- Nutley, S. K., Read, M., Martinez, S., Eichenbaum, J., Nosheny, R. L., Weiner, M., Mackin, R. S., & Mathews, C. A. (2022). Hoarding symptoms are associated with higher rates of disability than other medical and psychiatric disorders across multiple domains of functioning. *BMC Psychiatry*, 22(1), 647. <https://doi.org/10.1186/s12888-022-04287-2>
- Ogiemwonyi, O., Alam, M. N., Alshareef, R., Alsolamy, M., Azizan, N. A., & Mat, N. (2023). Environmental factors affecting green purchase behaviors of the consumers: Mediating role of environmental attitude. *Cleaner Environmental Systems*, 10, 100130. <https://doi.org/10.1016/j.cesys.2023.100130>
- Olan, F., Suklan, J., Arakpogun, E. O., & Robson, A. (2021). Advancing consumer behavior: The role of artificial intelligence technologies and knowledge sharing. *IEEE Transactions on Engineering Management*.
- Ovezmyradov, B. (2022). Product availability and stockpiling in times of pandemic: causes of supply chain disruptions and preventive measures in retailing. *Annals of Operations Research*, 1-33. <https://doi.org/10.1007/s10479-022-05091-7>
- Palmieri, N., Boccia, F., & Covino, D. (2024). Digital and Green Behaviour: An Exploratory Study on Italian Consumers. *Sustainability*, 16(8), 3459. <https://doi.org/10.3390/su16083459>
- Qureshi, M. A., Khaskheli, A., Qureshi, J. A., Raza, S. A., & Khan, K. A. (2023). Factors influencing green purchase behavior among millennials: the moderating role of religious values. *Journal of Islamic Marketing*, 14(6), 1417-1437. <https://doi.org/10.1108/JIMA-06-2020-0174>
- Rajkumar, R. P., & Arafat, S. Y. (2021). Model driven causal factors of panic buying and their implications for prevention: a systematic review. *Psychiatry International*, 2(3), 325-343. <https://doi.org/10.3390/psychiatryint2030025>
- Rana, S., Shafi, F., Rasheed, A., & Malik, M. I. (2024). Online environmental platforms service and green consumer behavior nexus: a multi-mediator study. *Future Business Journal*, 10(1), 3. <https://doi.org/10.1186/s43093-023-00283-4>
- Saleem, S., & Saleem, T. (2022). Disaster, e-commerce, and panic buying. In *Panic Buying and Environmental Disasters: Management and Mitigation Approaches* (pp. 249-265). Springer. https://doi.org/10.1007/978-3-031-10278-3_14
- Sima, V., Gheorghe, I. G., Subić, J., & Nancu, D. (2020). Influences of the industry 4.0 revolution on the human capital development and consumer behavior: A systematic review. *Sustainability*, 12(10), 4035. <https://doi.org/10.3390/su12104035>
- Singh, P., Sharma, B. K., Arora, L., & Bhatt, V. (2023). Measuring social media impact on Impulse Buying Behavior. *Cogent Business & Management*, 10(3), 2262371. <https://doi.org/10.1080/23311975.2023.2262371>
- Stern, H. (1962). The significance of impulse buying today. *Journal of Marketing*, 26(2), 59-62. <https://doi.org/10.1177/002224296202600212>
- Toha, M., & Supriyanto, S. (2023). Factors Influencing The Consumer Research Process: Market Target, Purchasing Behavior and Market Demand (Literature Review Of Consumer Behavior). *Danadyaksa: Post Modern Economy Journal*, 1(1), 1-17. <https://doi.org/10.69965/danadyaksa.v1i1.5>
- Tzeng, S.-Y., Ertz, M., Jo, M.-S., & Sarigöllü, E. (2021). Factors affecting customer satisfaction on online shopping holiday. *Marketing Intelligence & Planning*, 39(4), 516-532. <https://doi.org/10.1108/MIP-08-2020-0346>
- Uzir, M. U. H., Hamid, A. B. A., Jerin, I., Latiff, A. S. A., & Thurasamy, R. (2021). Customer satisfaction and brand loyalty to electronic home appliances in Bangladesh: The contingent role of brand trust. *SN Business & Economics*, 1(6), 86. <https://doi.org/10.1007/s43546-021-00088-z>
- Vlačić, B., Corbo, L., e Silva, S. C., & Dabić, M. (2021). The evolving role of artificial intelligence in marketing: A review and research agenda. *Journal of Business Research*, 128, 187-203. <https://doi.org/10.1016/j.jbusres.2021.01.055>
- Wang, J., Yang, X., He, Z., Wang, J., Bao, J., & Gao, J. (2022). The impact of positive emotional appeals on the green purchase behavior. *Frontiers in Psychology*, 13, 716027. <https://doi.org/10.3389/fpsyg.2022.716027>
- Witek, L., & Kuźniar, W. (2020). Green purchase behavior: The effectiveness of sociodemographic variables for explaining green purchases in emerging market. *Sustainability*, 13(1), 209. <https://doi.org/10.3390/su13010209>
- Woo, H., Kim, S. J., & Wang, H. (2021). Understanding the role of service innovation behavior on business customer performance and loyalty. *Industrial Marketing Management*, 93, 41-51. <https://doi.org/10.1016/j.indmarman.2020.12.011>
- Xiong, Y. (2022). The impact of artificial intelligence and digital economy consumer online shopping behavior on market changes. *Discrete Dynamics in Nature and Society*, 2022. <https://doi.org/10.1155/2022/9772416>
- Yang, X., Jiang, J., & Chen, S. C. (2023). Achieving sustainability: Determinants of conscious green purchasing behavior during the COVID-19 pandemic. *Business Strategy and the Environment*, 32(4), 2229-2244. <https://doi.org/10.1002/bse.3245>
- Yeo, S. F., Tan, C. L., Kumar, A., Tan, K. H., & Wong, J. K. (2022). Investigating the impact of AI-powered technologies on Instagrammers' purchase decisions in digitalization era—A study of the fashion and apparel industry. *Technological Forecasting and Social Change*, 177, 121551. <https://doi.org/10.1016/j.techfore.2022.121551>
- Yoshino, S., Shimotsukasa, T., Hashimoto, Y., & Oshio, A. (2021). The association between personality traits and hoarding behavior during the COVID-19 pandemic in Japan. *Personality and Individual Differences*, 179, 110927. <https://doi.org/10.1016/j.paid.2021.110927>
- Yuen, K. F., Ng, W. H., & Wang, X. (2023). Switching intention in the online crowdsourced delivery environment: The influence of a platform's technological characteristics and relational bonding strategies. *Technology in Society*, 72, 102167. <https://doi.org/10.1016/j.techsoc.2022.102167>
- Zaato, S. G., Zainol, N. R., Khan, S., Rehman, A. U., Faridi, M. R., & Khan, A. A. (2023). The mediating role of customer satisfaction between antecedent factors and brand loyalty for the shopee application. *Behavioral Sciences*, 13(7), 563. <https://doi.org/10.3390/bs13070563>
- Zaman, S. I., & Kusi-Sarpong, S. (2024). Identifying and exploring the relationship among the critical success factors of sustainability toward consumer behavior. *Journal of Modelling in Management*, 19(2), 492-522. <https://doi.org/10.1108/JM2-06-2022-0153>
- Zhang, X., Lyu, H., & Luo, J. (2021). Understanding the hoarding behaviors during the COVID-19 pandemic using large scale social media data. 2021 IEEE International Conference on Big Data (Big Data),

Zhang, Z., Zhang, N., & Wang, J. (2022). The Influencing Factors on Impulse Buying Behavior of Consumers Under the Mode of Hunger Marketing in Live Commerce. *Sustainability*, 14(4), 2122. <https://doi.org/10.3390/su14042122>