ISSN: 2437-0525 / EISSN: 2602-5078 **JBAES**: Vol (11), Issue (01), 2025, P : 323-336



Journal of Business Administration and Economic Studies

Web site: www.asjp.cerist.dz/en/PresentationRevue/313/

The Role of Artificial Intelligence in Analyzing Consumer Behavior

دور الذكاء الاصطناعي في تحليل سلوك المستهلك

[1*] **Yassine Salmi, email :** y.salmi@univ-djelfa.dz

[1] **أستاذ محاضر أ , Ziane Achour University of Djelfa, (Algeria)**

Received: 20/02/2025 **Accepted:** 15/05/2025 **Published:** 28/28/2025

Abstract

This study focuses on how artificial intelligence (AI) affects consumer behavior. AI is there to help companies analyze data to improve marketing efficiency and the desire for customer engagement. Machine learning, natural language processing (NLP), and computer vision have so far given companies an opportunity to track consumer trends. Chatbots and sentiment analysis tools help customers interact. These technologies assist companies in predicting customers' desires, targeting audiences, boosting sales, etc. It has been found that AI increases marketing efficiency, improves satisfaction and helps companies make better decisions.

Despite its benefits, AI raises ethical concerns. It has significant data privacy, algorithmic bias and transparency problems. Transparency can be improved by explainable AI. Establishing consumer trust and achieving long-term success in an ethical AI is very important. However, the ones who implement responsible AI strategies will achieve sustainable growth and retain customers.

Keywords

Artificial intelligence (AI) ; Consumer behavior; Customer engagement; Machine learning; Computer vision;

JEL Classification Codes : M12 ; D10

الملخص

تركز هذه الدراسة على كيفية تأثير الذكاء الاصطناعي على سلوك المستهلك. الذكاء الاصطناعي موجود لمساعدة الشركات على تحليل البيانات لتحسين كفاءة التسويق والرغبة في إشراك العملاء. حتى الآن أعطى التعلم الآلي ومعالجة اللغة الطبيعية والرؤية الحاسوبية للشركات فرصة لتتبع اتجاهات المستهلكين. تساعد أدوات تحليل المشاعر والدردشة الروبوتية العملاء على التفاعل. تساعد هذه التقنيات الشركات في التنبؤ برغبات العملاء واستهداف الجماهير وتعزيز المبيعات وما إلى ذلك. وقد وجد أن الذكاء الاصطناعي يزيد من كفاءة التسويق ويحسن الرضا ويساعد الشركات على اتخاذ قرارات أفضل.

على الرغم من فوائده، يثير الذكاء الاصطناعي مخاوف أخلاقية. لديه مشاكل كبيرة تتعلق بخصوصية البيانات والتحيز الخوارزمي والشفافية. يمكن تحسين الشفافية من خلال الذكاء الاصطناعي القابل للتفسير.إن إرساء ثقة المستهلك وتحقيق النجاح الطويل الأجل في الذكاء الاصطناعي الأخلاقي أمر مهم للغاية. ومع ذلك، فإن أولئك الذين ينفذون استراتيجيات الذكاء الاصطناعي المسؤولة سيحققون نموًا مستدامًا ويحتفظون بالعملاء.

الكلمات المفتاحية

الذكاء الاصطناعي؛ سلوك المستهلك؛ إشراك العملاء؛ التعلم الآلي ؛ الرؤية الحاسوبية.

تصنيف JEL: M12 ؛ D10

* corresponding author : full name, email : yassinoira@gmail.com

I. INTRODUCTION:

The use of Artificial Intelligence today has made it easier for people to understand consumer behavior better. Traditional methods like surveys and focus groups do not provide timely, comprehensive information utilities. Today, AI technologies such as Machine learning and Natural language processing (NLP) allow companies to predict trends, personalize their marketing efforts, and improve customer experience. Amazon and Netflix utilize recommendation systems and chatbots to lead companies in engagement and sales. Nevertheless, this is coupled with the ethical and regulatory challenges of the rise of AI. All that data, the questions about the algorithm's fairness, and the claims about artificial intelligence will ensure your concern continues to grow. All these regulatory frameworks, like the General Data Protection Regulation (GDPR) and the California Consumer Privacy Act (CCPA), demand more transparent and ethical data practices to enter and stay in the market.

Consumer buying behavior studies consumers' actions while buying or refusing a service or a good that will satisfy their wants. It studies consumption behavior and what contributes to a customer buying a product. Marketers should know the consumer's purchase behavior to know what to expect from them. To understand what time (or time about other times) prompts a consumer to decide whether a product is valuable. Since a product was introduced to the market, it was necessary to know the type of products buyers wanted. Through this, marketers can understand what consumers love and hate so that they can develop a marketing strategy. Consumer buying behavior is influenced by several factors, such as what a customer is buying, why it was bought, when it was being bought, and how often it is being bought.

This paper will address the question of how AI affects consumer behavior the positive aspects and ethical challenges. This study consists of theoretical frameworks, technological applications, and real-world examples that help one to understand how marketing and AI complement one another. Additionally, it emphasizes the need for ethical AI implementation in business for sustainable operation. The paper is structured by first providing a brief literature review and 3 key consumer behavior theories. It then presents cases where AI can be practically applied. The study concludes by discussing the ethical concerns and making recommendations for businesses and researchers.

II. Literature Review

1. The Theory of Planned Behavior (TPB)

The Theory of Planned Behavior (TPB) was developed by Ajzen and became one of the primary research models that consumer behavior specialists use for their studies. Bosnjak, et al (2020) the theory of planned behavior states that human conduct is derived from three main components: feelings, social expectations, and behavioral assessment. Ajzen, (2020) describes further by stating that "TPB is the intention to perform the behavior in question: the stronger the urge the likely the behavior to follow." The tool shortens the analysis time for the model through the evaluation of digital footprints consisting of social media data search patterns and web-based review content. According to Ahmed et al. (2022), News-language processing-based Artificial Intelligence tools that analyze brand-related customer sentiments enable more accurate future purchasing prediction reports.

2. Maslow's Hierarchy of Needs

The consumer motivational framework of Maslow's Hierarchy of Needs features five categories: logical, safety, love and belonging, esteem, and self-actualization. The needs of consumers match the capabilities of AI-powered marketing, which uses personal preferences to personalize advertisement delivery, as documented by Biswas and Patra (2023). Personalization engines utilizing AI technologies use previous purchases and browsing activities to suggest products that fit clients' current requirements. The real-time capabilities of AI-based virtual assistants serve customers by delivering tailored shopping experiences that resolve individual concerns.

3. Engel-Kollat-Blackwell (EKB) Model

This theory elaborates on how AI facilitates each stage of the consumer journey according to the Engel, Kollat, and Blackwell (EKB) Model of consumer decision-making. The basis of this model is as follows: problem recognition, information search, evaluation of alternatives, making a purchase decision, and evaluation post-purchase. According to Bhardwaj et al., (2024), by using AI analytics, businesses can influence each stage by recommending the personalization of product recommendations, converting real-time pricing, or chatting with customer support. According to the study done by McLean, Osei-Frimpong, and Barhorst, (2021). Using AI chatbots helps consumers decide, cutting the cognitive burden and increasing customer satisfaction. Artificial intelligence strengthens main consumer behavior theories while generating specific marketing strategy recommendations for businesses. Companies can enhance their consumer engagement through predictive analytics, which helps them better understand how customers think and act.

4. AI Applications in Consumer Behavior

According to Jain (2020), he explained that AI helps marketers process a massive chunk of data, conduct personalized sales, and finally meet the client's expectations. Recalling the implementation of intelligent technologies for digital marketing, Davenport (2020) deduced that businesses are being persuaded to achieve better customer experience through the use of Artificial Intelligence and Big Data. Studies done by Khatri (2021) noted the use of AI in creating successful marketing strategies. Furthermore, he described that businesses that utilize a brilliant marketing plan using new technology that is compatible with the businesses' advertising campaigns, which are aimed at the application of current trends and consumers' behavior changes, as well as data analytics to verify the customers' decisions and needs. As mentioned by Reis et al. (2020), AI is such a profound influence. Retailers, according to him, are still rolling out consumer-facing Artificial Intelligence (AI) digital humans into their frontline retail environment as they seek more creative and innovative ways to leverage their physical retail properties

5. AI Technologies in Consumer Behavior

Businesses use multiple AI technologies to conduct consumer behavior analysis, thus obtaining advanced predictive tools to understand purchasing trends. The analytics using machine learning (ML) techniques examine past consumer databases to detect behavioral patterns that produce accurate predictions about future purchasing choices (Tarun Kaniganti, 2020). Kaniganti further notes that "Machine learning is the culmination of converting primary data to meaningful insights, especially in predictive maintenance, customer behavior analysis, and abnormality detection." Using ML algorithms enables businesses to examine extensive amounts of structured and unstructured data through which they find patterns beyond human detection. Predictive analytics technology, which belongs to Machine Learning, supports businesses in estimating market requirements effectively, aging their stock better, and improving target market promotion initiatives.

According to Kang et al., (2020). the AI technology Natural Language Processing (NLP) helps systems analyze information from customer review content, social media content, and automated chat communications. The study done by Ahmed et al., (2022), suggests that through NLP-driven sentiment analysis, businesses can measure public brand perception, thus optimizing their marketing approach. Their AI technology chatbots serve customers better by delivering individualized responses and swiftly handling their queries.

III. Analysis and Case Studies

AI Technologies in Consumer Behavior Analysis

Consumer behavior analysis through artificial intelligence primarily depends on computer vision technology, which identifies visual information discovered on social media platforms and e-commerce sites. Assessing customer advertising responses and feedback using AI-powered facial recognition technology enhances the optimization of business branding strategy (Guo et al., 2022).

AI-based facial recognition technology can tell whether customers are happy, not happy, or indifferent to advertisements that they see and facilitate businesses to get better pricing for their brands (Guo et al., 2022). Measures focused on in-store customer behavior are tracked by the retailers, also using computer vision for refining product placements or store layouts for maximum engagement (Wang et al., 2022). Big data analytics allows businesses to segment their customer base into categories based on their online behaviors, demographics, and purchasing history (Bhardwaj et al., 2024). Personalized marketing using AI guarantees that the marketing message reaches consumers of interest, bringing more engagement and conversion. Integrating these AI technologies into businesses creates room for developing more precise and efficient marketing strategies, enhancing consumer experience, and improving the firm's profitability.

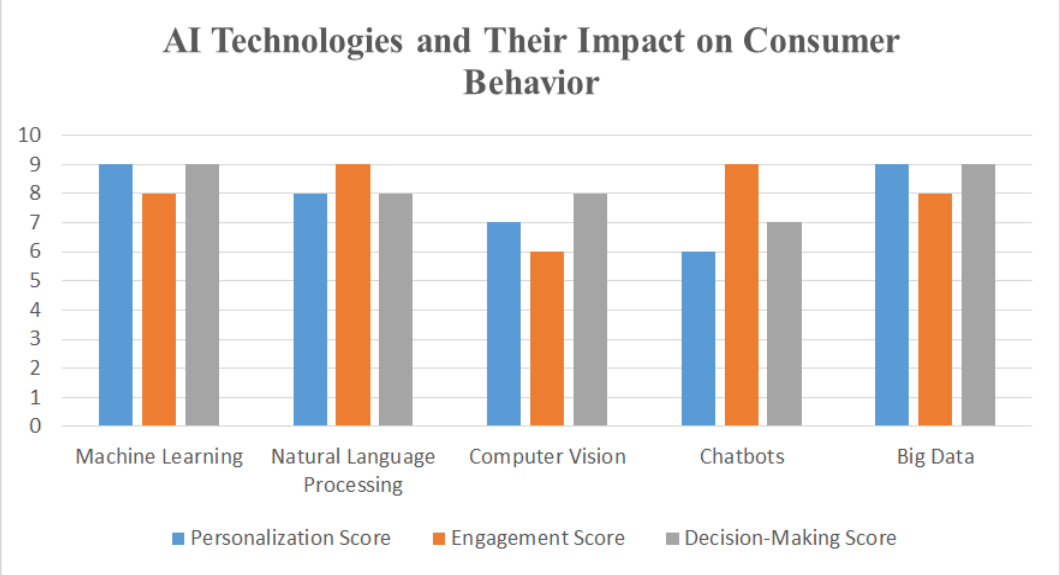


Figure 1.1 illustrates how digitalizing customer interactions highlights AI's impact on personalization, consumer engagement, and business decision-making.

Machine learning and big data score 9/10 in delivering personalization and excel in predictive analytics and targeted marketing for decision-making. Sentiment analysis and automated interaction give NLP and chatbots a 9/10 rating. However, their personalization rating drops to 6/10 due to standardized responses. Computer vision supports decision-making (8/10) by enabling visual product recommendations and security authentication. This knowledge helps businesses identify the most beneficial AI tools for enhancing consumer interactions and strategic decision-making.

IV. Case Studies of AI in Business

1. Case Studies & Real-World Applications.

There is widespread use of AI-based consumer behavior analysis in different industries. From the study done by Schönau, (2022), this is actualized by Amazon using its deep learning algorithms recommendation system that analyzes browsing history and past purchases to personalize product suggestions. However, this system has dramatically increased Amazon's sales and customer engagement.

The most distinctive uses of AI is Netflix's use of personalizing content recommendations about how people have viewed the past or what they most like. Netflix analyzes past interactions and tailors' suggestions to viewers to enhance viewer retention rates. According to (Gao et al., 2023), targeted marketing that uses AI is applied in Google and Facebook Ads whereby advertisements are optimized using user search history through analysis of it and of patterns of engagement. AI-driven advertising ensures that businesses find their ideal customer base and customer return.

According to Reznikov (2024), Alibaba, one of the world's largest e-commerce platforms, is placing AI-driven analysis to segment its customers and personalize their shopping experience. Like Coca-Cola, the company uses AI-powered sentiment analysis to monitor consumers' conversations on social media and change its marketing methods according to real-time real-time feedback (Ali et al., 2021). AI-driven consumer behavior analysis is shown in these case studies to help in business strategy, improving customer experience, and increasing profitability.

2. Application of AI in Ad Optimization

In the reviewed studies, the advent of AI advertising is written about through a segment related to the ad optimization part of AI advertising, consisting mainly of technologies such as Machine Learning and Reinforcement Learning. The time spent optimizing advertising campaigns involves Machine Learning algorithms. Therefore, they can predict user performance in an ad and pick the best ad that matches the target audience's characteristics and interests (Choi & Lim, 2020). In other words, the Machine Learning algorithm runs existing customer databases. It effectively explores the famous conundrum of advertising magnate John Wanamaker "I know

half the money I spend on advertising is wasted, but I don't know which half" (Wen et al., 2022). How do you know if you are reaching the customer? As externally sourced data about consumers' activities or interest's increases, advertisers can make more reliable user profiles to reference. Advertisers can use machine learning algorithms to make their advertising content design, deployment, and targeting more efficient and, therefore, be very competitive in the industry. The advertisers then leverage the technology, and they further optimize their advertising campaigns by analyzing a broad range of consumer behavior and preference data, thus improving advertising effectiveness.

3. The Future of AI in Consumer Behavior

The advancement of consumer behavior analysis through AI will occur because of developments in affective computing, edge AI, and voice commerce technology. Affective computing refers to emotion AI through which businesses can process the natural emotions of customers during real-time operations (Pei et al., 2024). The assessment of facial expressions combined with tone of voice and biometric data allows AI to deliver profound customer engagement and predict how shoppers respond before purchasing (Guo et al., 2022). Through this technological advance, brands can use it to connect emotionally with their customers, which leads to improved personalization methods.

Edge AI represents a vital trend that enables AI to process information directly through consumer devices instead of cloud services. Using edge AI will enhance data privacy and protection, thus resolving consumer privacy and unethical data monitoring concerns (Sorbán, 2021). No matter when they perform operations, the business will use device-based AI models to provide prompt data discoveries with tailored experiences that protect user confidentiality. AI-driven marketing will become more influential because of this trend, establishing improved consumer trust.

The future of human behavior through voice commerce will transform since sophisticated AI-powered virtual assistants such as Alexa, Siri, and Google Assistant will gain better capabilities. The technological advancement of Voice AI enables customers to execute orders, get recommendations, and examine products through natural spoken dialogues (McLean, Osei-Frimpong, and Barhorst, 2021). The association of voice and conversational AI within e-commerce systems will create superior client comfort, leading to higher sale rates and enhanced brand trust.

More progress in AI technology requires businesses to build future AI-driven marketing strategies based on consumer interests with complete transparency and ethical standards. Businesses focusing on fairness and using accountable AI systems for proper innovation will reach maximum AI opportunities while maintaining consumer faith and trust.

Additionally, AI has significantly changed consumer behavior analysis to give companies predictive insights to help them develop personalized marketing strategies and better decisions. AI's ability to use Machine Learning made life a lot easier for businesses; from NLP-driven sentiment analysis to predictive analytics created with the help of cloud machine learning, AI

analyzes a wide variety of data most efficiently (Hameed and Garcia-Zapirain, 2020). Numerous companies in different industries, like Amazon, Netflix, Google, and Coca-Cola, have leveraged AI-driven insights to maximize customer engagement and improve profitability. AI-driven recommendation systems, chatbots, and big data analytics have changed marketing strategies, enabling businesses to segment content and advertisements according to individual consumer preferences.

V. Ethical Considerations and Challenges

1. Challenge

AI has significantly impacted how behavior analysis has changed for the consumer but presents a few challenges and ethical search points in their implementation. Data privacy security is very high the most pressing issues. Gathering large amounts of personal consumer data is part of AI, which concerns how businesses save, process, and secure this data (Asian Development Bank, 2023). The General Data Protection Regulation (GDPR) and the California Consumer Privacy Act (CCPA) are rules and regulations that monitor how often companies collect and use data to prevent consumer privacy from being violated. Nevertheless, compliance remains difficult for companies operating in multiple jurisdictions.

Algorithmic bias is another problematic issue as the training data used to train the AI models tends to mirror society's biases, leading to them solidifying these biases. This mass data analysis with AI-driven marketing algorithms can also intentionally or unintentionally discriminate against or favor certain consumer groups, which becomes an ethical concern and a risk to the business's reputation (Sharma & Lal, 2024). Specifically, financial services AI models, including biased AI models in financial services, are found to discriminate based on demographics within credit scoring and loan approvals (Reznikov, 2024). However, when it comes to cautioning AI companies about their model against built-up bias, the issue is that their AI models must be trained on diverse, representative datasets.

2. Ethical Considerations

One of AI's most significant ethical concerns is the lack of transparency in decision-making. Many AI systems function as "black boxes," meaning their decision-making processes are not easily interpretable to humans (McLean, Osei-Frimpong, & Barhorst, 2021). This lack of explain ability makes it difficult for businesses to justify marketing decisions based on AI, leading to an environment of distrust between companies and consumers. To address this, businesses should develop Explainable AI (XAI) solutions that enhance transparency and accountability in AI-driven decision-making.

Using AI in consumer behavior analysis increases concerns about manipulating marketing strategies. This allows businesses to subconsciously use AI and consumer psychology to influence consumers' buying decisions, raising questions about whether their actions are taking away from consumer autonomy and perhaps free will (Bangsa and Schlegelmilch, 2020). For instance, keywords such as elixir or potion that designed the user experience make the app more engaging while dynamically adjusting prices according to the user behavior and demand using AI-driven dynamic pricing that sometimes exploits urgency and psychological triggers to drive more sales.

The other issue is the overdependence on AI in making decisions. AI is undoubtedly good, but human intuition and ethical judgment are still must-haves in marketing strategy (Guo et al., 2022). To uphold ethical marketing practices, businesses must achieve the equilibrium between human oversight and AI-driven automation. For this, businesses must adopt ethical AI principles such as data transparency and fairness, accountability, etc. Just as legal guidelines apply to IT rightly, so do governance policies about the responsible use of AI, and as such, organizations should also enforce solid governance policies in line with global data protection laws. In addition, businesses must make the consumer aware of how their data are collected and used for greater transparency and trust. On the one hand, there are no peers to these advantages in the consumer behavior analysis offered by AI. On the other hand, businesses must pay great attention to these ethical issues. Organizations can integrate responsible AI practices into using AI's capabilities while guaranteeing fairness, transparency, and consumer trust.

AI Benefits	**Ethical Challenges**
Enhanced personalization in marketing	Consumer privacy concerns and data security risks
Improved customer engagement through chatbots	Bias in AI decision-making leading to unfair targeting
Efficient customer segmentation and targeting	Lack of transparency in AI-driven recommendations
Real-time predictive analytics for businesses	Potential for manipulative marketing strategies
Automated sentiment analysis for brand perception	Over-reliance on AI reduces human oversight

3. Customer Loyalty and Retention.

Today, customer loyalty and retention have become significant factors of business survival, and AI is the core element in maintaining lasting relationships with customers. With the help of intelligent power, predictive analytics makes businesses foresee what a customer needs and offers them a solution before they find other ways to solve their problem (Tarun Kaniganti, 2020). Analyzing customer lifetime value (CLV) and more is one of AI's primary links to loyalty

programs: high-value customers are discovered, and marketing efforts are focused on them accordingly (Bhardwaj et al., 2024). Companies like Amazon and Starbucks have integrated an AI-based loyalty program where highly personalized incentives are provided at purchase or behavioral patterns (Ahmed et al., 2022). These ensure customers are given customized discounts, exclusive offers, and reward opportunities to boost engagement and retain them.

Additionally, AI-powered chatbots and virtual assistants make interactions between companies and customers more efficient (Adam, Wessel, and Benlian, 2021). It has been widely researched that consumers love instant responses and dislike being put on hold. AI chatbots allow companies to respond instantly without overloading their human representatives (McLean, Osei-Frimpong, and Barhorst, 2021). On top of personalization, AI provides hyper-personalization, which means the content and recommendations on brands are made at an individual level. Using AI, companies like Spotify and Netflix learn anything about customer preferences and create the most unique user experiences, ultimately leading to long-term loyalty.

AI can improve businesses' ability to hand over customer-centric experiences and increase brand trust and emotional customers. Businesses can use AI in loyalty programs, customer service, and hyper-personalization to strengthen customer relationships and achieve a higher retention rate and sustainable revenue growth. However, companies must also ensure that such personalization with AI does not diminish ethical behavior and respect user privacy, lest they risk data exploitation.

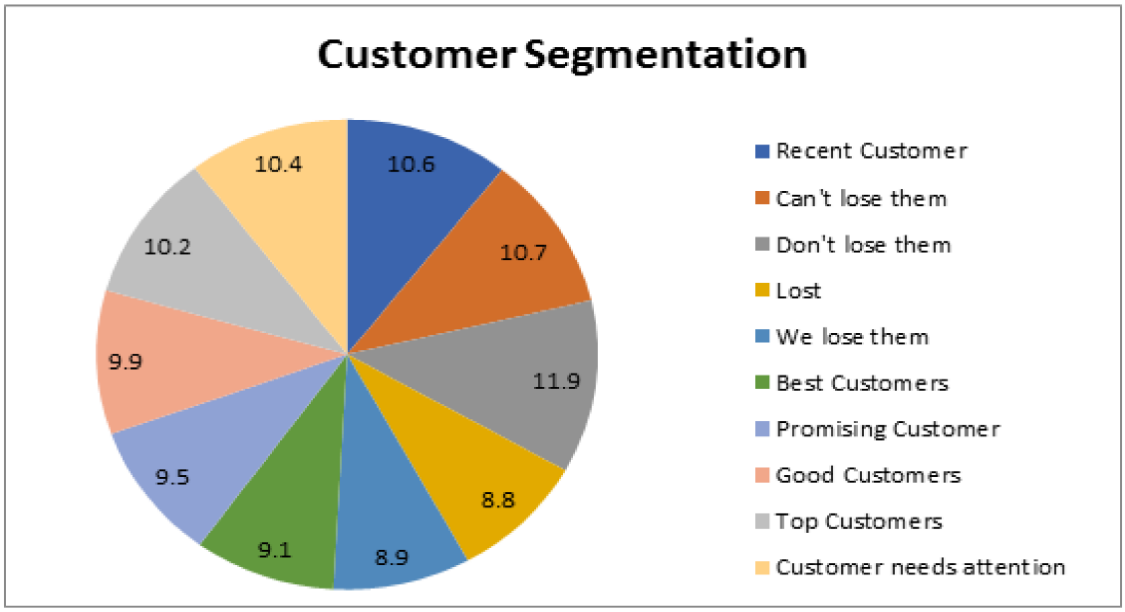


Image 1.1: Visual representation of customer segmentation utilizing RFM analysis. (Talaat et al. 2023)

The customer segments in terms of engagement and retention levels are shown in Image 1.1. The size represents a category such as Recent Customers, Best Customers; We Lose Them, Lost, do not Lose Them, which is what is Lost and what we do not lose (11.9 per cent), which says excellent retention. Smaller yet crucial groups like 'Best Customers' and 'Promising Customers highlight loyalty potential. The segment sizes vary, showing the need for businesses to improve engagement strategies, retain loyal customers, and re-engage the ones at risk of leaving. This segmentation enables organizations to narrow the focus of the organization for marketing and customer service efforts that will yield short and long-term customer loyalty and revenue growth.

VI. Conclusion

More progress in AI technology requires businesses to build future AI-driven marketing strategies based on consumer interests with complete transparency and ethical standards. Businesses focusing on fairness and using accountable AI systems for proper innovation will reach maximum AI opportunities while maintaining consumer faith and trust.

Additionally, AI has significantly changed consumer behavior analysis to give companies predictive insights to help them develop personalized marketing strategies and better decisions. AI's ability to use Machine Learning made life a lot easier for businesses; from NLP-driven sentiment analysis to predictive analytics created with the help of cloud machine learning, AI analyzes a wide variety of data most efficiently. Numerous companies in different industries, like Amazon, Netflix, Google, and Coca-Cola, have leveraged AI-driven insights to maximize customer engagement and improve profitability. AI-driven recommendation systems, chatbots, and big data analytics have changed marketing strategies, enabling businesses to segment content and advertisements according to individual consumer preferences.

AI in Consumer Behavior Analysis also has ethical and legal challenges. The issues, including data privacy, algorithmic bias, transparency, and manipulation of the consumers, must be considered for the implementation of responsible AI. GDPR and CCPA make strict data collection guidelines, but ethical AI must be applied by businesses to instill consumer trust. Companies should regard Explainable AI (XAI) solutions as a priority to address the issues posed by the opaque nature of AI decision-making.

AI will continue influencing consumer behavior analysis, providing businesses with more opportunities to improve customer engagement and advance innovation. However, organizations must find the right level to us e AI-provided insights without compromising ethical standards. The responsible implementation of AI in marketing will be essential for the success of marketing with AI in the future so that AI processes and strategies are beneficial for both businesses and customers. However, ethical AI development and compliance with regulatory frameworks ensure businesses can harness the full potential of AI while instilling faith and interest for a lengthy while in the continued patronage of customers.

VII. Reference list

1. Adam, M., Wessel, M. and Benlian, A. (2021). **AI-based Chatbots in Customer Service and Their Effects on User Compliance.** *Electronic Markets, [online] 31(2). doi:*
2. https://link.springer.com/article/10.1007/s12525-020-00414-7
3. Adrian, G., Dumitru, C.-D., Dzitac, S. and Simo, A. (2025). **Augmented Cyber-physical Model for Real-time Smart-grid Co-simulation**. *International Journal of Computers Communications & Control, [online] 20(1*). https://www.proquest.com/docview/3151818188/2426CBC4EEFF49FCPQ/4?sourcetype=Scholarly%20Journals
4. Ahmed, A.A.A., Agarwal, S., Kurniawan, Im.G.A., Anantadjaya, S.P.D. and Krishnan, C. (2022). **Business boosting through sentiment analysis using the Artificial Intelligence approach**. *International Journal of System Assurance Engineering and Management, 13(S1), pp.699–709. doi*: https://doi.org/10.1007/s13198-021-01594-x.
5. Alahi, M.E.E., Sukkuea, A., Tina, F.W., Nag, A., Kurdthongmee, W., Suwannarat, K. and Mukhopadhyay, S.C. (2023). **Integration of IoT-Enabled Technologies and Artificial Intelligence (AI) for Smart City Scenario: Recent Advancements and Future Trends**. *Sensors, [online] 23(11), p.5206. Available at*: https://www.mdpi.com/1424-8220/23/11/5206.
6. Ali, T.M., Nawaz, A. and Rehman, A.U. (2021). **An Integrated Framework for Sentiment Analysis of Giant Cold Drinks Companies**. [*online] IEEE Xplore. doi*: https://www.mdpi.com/1424-8220/23/11/5206
7. Asian Development Bank (2023). **Managing Digital Risks**. *Asian Development Bank*.
8. Bhardwaj, S., Sharma, N., Goel, M., None Vandana, Sharma, K. and Verma, V. (2024). **Enhancing Customer Targeting in E-Commerce and Digital Marketing through AI-Driven Personalization Strategies**. *CRC Press eBooks, pp.41–60. DOI*:10.1201/9781003450443-4
9. Biswas, K. and Patra b, Dr.G. (2023). **Role of Artificial Intelligence (AI) in Changing Consumer Buying Behaviour**. *International Journal of Research Publication and Reviews, 04(02), pp.943–951. DOI:*10.55248/gengpi.2023.4227
10. Bosnjak, M., Ajzen, I. and Schmidt, P. (2020). **The Theory of Planned Behavior: Selected Recent Advances and Applications.** *Europe's Journal of Psychology, 16(3), pp.352–356. doi:* 10.5964/ejop.v16i3.3107
11. Choi, J.-A. and Lim, K. (2020). **Identifying machine learning techniques for classification of target advertising**. *ICT Express, 6(3), pp.175–180*. https://doi.org/10.1016/j.icte.2020.04.012
12. Davenport, T. Guha, A. Grewal, D & Bressgott, T. (2019, October 10) https://link.springer.com/article/10.1007/s11747-019-00696-0#citeas
13. Gao, B., Wang, Y., Xie, H. and Hu, Y. (2023). **Artificial Intelligence in Advertising: Advancements, Challenges, and Ethical Considerations in Targeting, Personalization, Content Creation, and Ad Optimization**. *SAGE Open, 13(4).* https://doi.org/10.1177/21582440231210759
14. Guo, M.-H., Xu, T.-X., Liu, J.-J., Liu, Z.-N., Jiang, P.-T., Mu, T.-J., Zhang, S.-H., Martin, R.R., Cheng, M.-M. and Hu, S.-M. (2022). **Attention mechanisms in computer vision: A survey.** *Computational Visual Media*. https://link.springer.com/article/10.1007/s41095-022-0271-y

15. Hameed, Z. and Garcia-Zapirain, B. (2020). **Sentiment Classification Using a Single-Layered BiLSTM Model**. *IEEE Access, 8, pp.73992–74001.* https://www.researchgate.net/publication/340728014_Sentiment_Classification_Using_a_Single-Layered_BiLSTM_Model/fulltext/5e9a5d994585150839e40dff/340728014_Sentiment_Classification_Using_a_Single-Layered_BiLSTM_Model.pdf
16. Holmstrom, J. (2021). **From AI to digital transformation: The AI readiness framework**. *Business Horizons, 65(3), pp.329–339.* https://doi.org/10.1016/j.bushor.2021.03.006
17. Jain, A. (2022, February 21) **How Artificial Intelligence is transforming the logistics industry?** https://www.cxooutlook.com/how-artificial-intelligence-is-transforming-the-logistics-industry
18. Kang, Y., Cai, Z., Tan, C.-W., Huang, Q. and Liu, H. (2020). **Natural language processing (NLP) in management research: A literature review**. *Journal of Management Analytics, 7(2),* pp.139–172. https://doi.org/10.1080/23270012.2020.1756939
19. Khatri, D. M. (2021). **How Digital Marketing along with Artificial Intelligence is Transforming Consumer Behaviour?** *International Journal for Research in Applied Science and Engineering Technology, 9(VII), 523–527.* https://doi.org/10.22214/ijraset.2021.36287
20. Li, H. (2024). **AI-Powered Negotiations: Opportunities, Challenges, and the Future of Business Strategy**. *Transactions on Economics Business and Management Research, 13, pp.148–154. DOI:*10.62051/dg1trh68
21. McLean, G., Osei-Frimpong, K. and Barhorst, J. (2021). **Alexa, do voice assistants influence consumer brand engagement? – Examining AI-powered voice assistants' role in influencing consumer brand engagement.** *Journal of Business Research, 124, pp.312–328.* https://doi.org/10.1016/j.jbusres.2020.11.045
22. Nair, P.N. and Trehan, D.G. (2024). **Examining The Use Of AI-powered Social Media Analytics For Target Customer Segmentation: A Systematic Review In the Retail Industry**. *Educational Administration: Theory and Practice, [online] 30(4), pp.1798–1805.* https://doi.org/10.53555/kuey.v30i4.1753
23. Pei, G., Li, H., Lu, Y., Wang, Y., Hua, S. and Li, T. (2024). **Affective Computing: Recent Advances, Challenges, and Future Trends**. *Intelligent Computing, 3. DOI:*10.34133/icomputing.0076.
24. Reznikov, R. (2024). **PRACTICAL RECOMMENDATION OF USING GENERATIVE AI IN BUSINESS**. *Social Science Research Network. DOI:* https://doi.org/10.2139/ssrn.4851637.
25. Schönau, A. (2022). **Agency in augmented reality: exploring the ethics of Facebook's AI-powered predictive recommendation system.** *AI and Ethics*. https://link.springer.com/article/10.1007/s43681-022-00158-4
26. Shah, J. (2025). **Implementing Knowledge Graphs and Ontologies For AI-Powered Recommendation System**. *African Journal of Biomedical Research, 3, pp.25–36. Doi:* https://doi.org/10.53555/ajbr.v28i2s.6687.
27. Sharma, G. and Lal, Prof. (Dr.) R. (2024). **Ethical Considerations in Using AI-Generated Images in Advertising: Balancing Innovation and Responsibility**. *SSRN Electronic Journal.* https://dx.doi.org/10.2139/ssrn.4998132
28. Sorbán, K. (2021). **Ethical and legal implications of using AI-powered recommendation systems in streaming services**. *Információs Társadalom, 21(2), p.63.* DOI:10.22503/inftars.XXI.2021.2.5

29. Tarun Kaniganti, S. (2020). **Architecting Real-Time Big Data Analytics: An AWS-Powered Framework Integrating AI and ML for Predictive Insights.** *International Journal of Science and Research (IJSR), 9(2), pp.1931–1940. DOI:*10.21275/SR24716230925
30. Thogersen, J. (2021). **Consumer behavior and climate change: consumers need considerable assistance**. *Current Opinion in Behavioral Sciences, [online] 42(1), pp.9–14.* https://doi.org/10.1016/j.cobeha.2021.02.008
31. Talaat, F.M., Abdussalam Aljadani, Bshair Alharthi, Farsi, M., Badawy, M. and Elhosseini, M.A. (2023). **A Mathematical Model for Customer Segmentation Leveraging Deep Learning, Explainable AI, and RFM Analysis in Targeted Marketing.** *Mathematics, 11(18), pp.3930–3930.* https://doi.org/10.3390/math11183930
32. Wang, Y., Song, W., Tao, W., Liotta, A., Yang, D., Li, X., Gao, S., Sun, Y., Ge, W., Zhang, W. and Zhang, W. (2022). **A systematic review on affective computing: emotion models, databases, and recent advances**. *Information Fusion, 83-84, pp.19–52.* https://doi.org/10.1016/j.inffus.2022.03.009
33. Wu, W.-T., Li, Y.-J., Feng, A.-Z., Li, L., Huang, T., Xu, A.-D. and Lyu, J. (2021). **Data mining in clinical big data: The frequently used databases, steps, and methodological models**. *Military Medical Research, [online] 8(1).* https://mmrjournal.biomedcentral.com/articles/10.1186/s40779-021-00338-z
34. Wen, L., Lin, W. and Guo, M. (2022). **Study on Optimization of Marketing Communication Strategies in the Era of Artificial Intelligence.** *Mobile Information Systems, 2022(2), pp.1–11.* https://doi.org/10.1155/2022/1604184.
35. Xia, T., Zhou, L., and Ahmad, K. (2025). **Machine learning-based anomaly detection and prediction in commercial aircraft using autonomous surveillance data.** *PLOS ONE, [online] 20(2), p.e0317914.* https://www.proquest.com/docview/3164251714/2426CBC4EEFF49FCPQ/1?sourcetype=Scholarly%20Journals
36. Zak, S. and Hasprova, M. (2020). **The Role of Influencers in the Consumer Decision-Making Process**. *SHS Web of Conferences, 74(03014), pp.1–7.* https://doi.org/10.1051/shsconf/20207403014