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Article

Impact of Artificial Intelligence on Customer Commitment and Satisfaction in Green Product Service Delivery

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Abstract: The present study examines the impact of Artificial Intelligence on customer commitment and satisfaction in green product service delivery. Artificial Intelligence has become an important tool for improving customer service through chatbots, automated support, recommendation systems, personalized communication, and data-based decision-making. In the context of green products, AI helps customers receive quick information about product features, environmental benefits, quality, price, availability, and after-sales support. The study focuses on understanding how the usage of AI influences customer commitment and satisfaction with service delivery among customers of green products. The study is based on primary data collected from 140 respondents. Frequency analysis, correlation analysis, and mediation analysis using PROCESS Model 4 were applied to analyze the data. The findings show that usage of AI has a positive and significant relationship with customer commitment, though the relationship is weak. The results also indicate a moderate positive and significant relationship between usage of AI and satisfaction of service delivery. However, the mediation analysis shows that customer commitment does not significantly mediate the relationship between satisfaction of service delivery and usage of AI. Therefore, the study concludes that AI directly contributes to improving service delivery satisfaction among customers of green products, while its influence on customer commitment is positive but limited.

Keywords: Artificial Intelligence, Customer Commitment, Service Delivery Satisfaction, Green Products.

1. Introduction

Artificial Intelligence has become an important technological tool in modern service delivery because it helps organizations understand customers, personalize services, automate communication, and improve decision-making. In today's competitive market, customers expect quick responses, accurate information, customized product suggestions, and convenient service experiences. AI-based tools such as chatbots, recommendation systems, predictive analytics, virtual assistants, and automated customer relationship management systems help companies provide faster and more effective services. In the context of green products, AI can support customers by giving information about eco-friendly features, product benefits, environmental impact, pricing, availability, and after-sales support. Therefore, the use of AI in service delivery is becoming significant for organizations that want to improve customer experience and strengthen their market position.

Green products are products designed to reduce environmental harm and promote sustainable consumption. These products may include organic goods, energy-saving appliances, eco-friendly packaging, recycled products, natural personal care products, electric vehicles, and other sustainable alternatives. However, customers often need clear information before purchasing green products because they may have doubts about price, quality, authenticity, environmental claims, and usefulness. Artificial Intelligence can help reduce such doubts by providing personalized information, transparent product details, comparison support, customer reviews, and need-based recommendations.

When customers receive reliable and timely service through AI-enabled platforms, their satisfaction towards green products and related services may increase.

Customer satisfaction is one of the key outcomes of effective service delivery. It reflects the extent to which customer expectations are fulfilled through product quality, service convenience, responsiveness, reliability, and overall experience. In green product service delivery, satisfaction depends not only on the product but also on how well the company communicates environmental value, handles queries, delivers services, and supports customers after purchase. AI can improve satisfaction by reducing waiting time, offering 24/7 service, solving complaints quickly, and suggesting suitable green products according to customer preferences. As a result, AI-driven service delivery may create a positive impression in the minds of customers and encourage them to continue using green products.

Customer commitment refers to the customer's willingness to maintain a long-term relationship with a brand or organization. When customers are satisfied with AI-supported service delivery, they may develop trust, loyalty, emotional attachment, and repeated purchase intention. In the case of green products, commitment is also influenced by environmental concern, green trust, perceived value, and the belief that the product contributes to sustainability. Therefore, the present study on the impact of Artificial Intelligence on customer commitment and satisfaction in green product service delivery is highly relevant. It can help understand how AI-enabled services influence customer behaviour, improve satisfaction, build commitment, and support sustainable business practices in the green product market.

2. Review of Literature

1. **Ameen et al. (2021),** In the research titled "Customer experiences in the age of artificial intelligence" concluded that artificial intelligence has brought major changes in the way customers experience products and services. The study explains that AI helps companies understand customer needs through data analysis, customer profiling, service automation, and personalized communication. AI tools such as chatbots, virtual assistants, recommendation systems, and automated service platforms help customers receive quick responses and suitable solutions. This improves customer convenience and reduces dissatisfaction caused by delays or poor communication. The study also highlights that customer experience in the age of AI depends not only on technological efficiency but also on trust, ease of use, privacy, and emotional comfort. Therefore, the paper concludes that AI can improve customer satisfaction and engagement when it is used responsibly and when customers feel that the technology is useful, reliable, and supportive.

2. **Huang et al. (2018),** In the research titled "Artificial intelligence in service" concluded that artificial intelligence has become a powerful force in transforming service delivery systems. The study explains that AI can perform different levels of service activities, including mechanical tasks, analytical tasks, intuitive tasks, and even some empathetic tasks. Mechanical AI helps in repetitive and routine services, analytical AI helps in data-based decisions, intuitive AI helps in predicting customer needs, and empathetic AI supports emotional interaction with customers. The authors suggest that AI improves service speed, accuracy, consistency, and personalization. However, the study also indicates that AI should be implemented strategically because not all service activities can be completely replaced by technology. Human interaction remains important in complex and emotional service situations. Thus, the study concludes that AI can improve service quality and customer satisfaction when it is properly balanced with human service support.

3. **Huang et al. (2021),** In the research titled "A strategic framework for artificial intelligence in marketing" concluded that artificial intelligence has a strategic role in modern marketing because it helps firms understand customers more deeply and serve them more effectively. The study explains that AI can support marketing activities such as market analysis, customer segmentation, product recommendation, pricing, promotion, and relationship management. AI allows organizations to collect and analyze large amounts of customer data and use this information to predict customer preferences and behaviour. This helps firms provide personalized services and develop stronger customer relationships. The study also emphasizes that AI is useful for improving customer engagement because customers receive more relevant information and better service experiences. Therefore, the paper concludes that AI should not be seen only as a technological tool but as a strategic marketing resource that can improve customer satisfaction, loyalty, and long-term business performance.

4. **Wirtz et al. (2018),** In the research titled "Brave new world: Service robots in the frontline" concluded that service robots and AI-based frontline technologies are increasingly changing the nature of customer service. The study explains that service robots can perform many frontline service activities such as greeting customers, answering questions, giving directions, processing orders, and providing basic support. These technologies can

improve service speed, reduce waiting time, and provide consistent service delivery. However, the study also highlights that customer acceptance of service robots depends on several factors such as trust, perceived usefulness, ease of interaction, and the comfort level of customers. Some customers may appreciate quick and technology-based service, while others may prefer human interaction, especially when the service requires empathy or problem-solving. Therefore, the study concludes that AI and service robots are useful in frontline service delivery, but they should be designed carefully to support customers and complement human employees rather than completely replacing the human element.

5. **Prentice et al. (2020),** In the research titled "The impact of artificial intelligence and employee service quality on customer satisfaction and loyalty" concluded that both artificial intelligence and employee service quality have an important influence on customer satisfaction and loyalty. The study explains that AI improves service delivery by increasing efficiency, convenience, accuracy, and responsiveness. For example, AI can answer customer questions quickly, provide personalized suggestions, and reduce service errors. At the same time, employee service quality remains important because human employees provide emotional support, empathy, understanding, and personal attention. The study shows that AI alone may not be enough to create strong customer loyalty if customers do not receive emotional value or trust in the service process. Therefore, the authors conclude that the best service outcomes are achieved when AI-based service systems and human service quality work together. This combination can improve customer satisfaction, encourage repeat usage, and strengthen long-term loyalty.
6. **Chen (2010),** In the research titled "The drivers of green brand equity: Green brand image, green satisfaction, and green trust" concluded that green brand image, green satisfaction, and green trust are important factors that contribute to green brand equity. The study explains that customers are more likely to support a green brand when they believe that the brand is environmentally responsible and provides genuine eco-friendly value. Green brand image creates a positive impression in the minds of customers, while green satisfaction reflects the customer's positive experience with the product or service. Green trust develops when customers believe that the company's environmental claims are honest and reliable. The study highlights that satisfaction and trust are very important in green products because customers often have doubts about whether products are truly eco-friendly. Therefore, the study concludes that companies should focus on building a strong green image, delivering satisfying green products, and maintaining transparency in environmental claims to increase customer trust and brand value.
7. **Chen & Chang (2013)**, In the research titled "Towards green trust: The influences of green perceived quality, green perceived risk, and green satisfaction" concluded that green perceived quality, green perceived risk, and green satisfaction strongly influence green trust. The study explains that customers develop trust in green products when they feel that the products are of good quality, useful, safe, and genuinely environmentally friendly. Green perceived quality increases customer confidence because customers believe that the product performs well while also supporting environmental protection. On the other hand, green perceived risk can reduce trust when customers feel uncertain about product performance, price, authenticity, or environmental claims. Green satisfaction plays an important role because satisfied customers are more likely to believe in the brand and continue using its products. Therefore, the study concludes that companies must reduce customer doubts, improve product quality, provide clear information, and deliver satisfying service experiences in order to build green trust and long-term customer commitment.

Research Gap

The existing literature shows that artificial intelligence has been widely studied in relation to service delivery, customer experience, personalization, satisfaction, and loyalty, while green marketing studies have separately focused on green trust, green satisfaction, green perceived value, green brand image, and green loyalty. However, limited studies have directly examined how artificial intelligence influences customer commitment and satisfaction specifically in the context of green product service delivery. Most earlier studies discuss AI in general service or marketing sectors, and green product studies mainly focus on environmental concern, green trust, and purchase intention, without giving much attention to AI-enabled service support. Therefore, there is a research gap in understanding how AI tools such as chatbots, recommendation systems, automated customer support, and personalized digital communication affect customer satisfaction and long-term commitment toward green products. This study attempts to fill this gap by connecting artificial intelligence, service delivery, customer satisfaction, and customer commitment within the green product market.

Research Methodology

The present study is descriptive and analytical in nature, as it examines the impact of Artificial Intelligence on customer commitment and satisfaction of service delivery among customers of green products. Primary data was collected through a structured questionnaire from respondents, while secondary data was collected from research papers, journals, books, websites, and other published sources related to artificial intelligence, customer satisfaction, customer commitment, green products, and service delivery. The sampling area includes customers who are aware of or use green products, and the sample size of the study is 140 respondents. The population of the study consists of customers of green product businesses, and the sample unit is an individual customer/respondent. The area of the study is focused on customers of green products and their perceptions regarding AI-enabled service delivery.

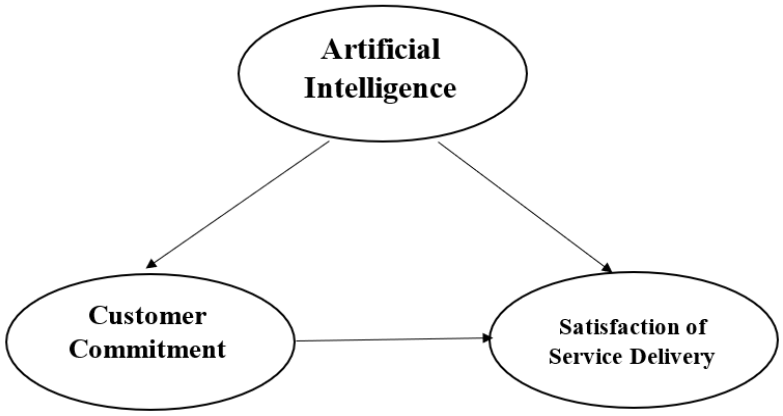
Objective of the Study:

1. To examine the relationship between the usage of Artificial Intelligence and customer engagement among customers of green product.
2. To analyze the relationship between the usage of Artificial Intelligence and service delivery satisfaction among customers of green product.
3. To evaluate the mediating role of customer engagement in the relationship between usage of Artificial Intelligence and service delivery satisfaction among customers of green product.

Hypothesis of the Study:

- **Null Hypothesis H01:** There is no relationship between the usage of Artificial Intelligence and customer commitment among customers of green product.
- **Alternate Hypothesis H11**: There is a relationship between the usage of Artificial Intelligence and customer commitment among customers of green product.
- **Null Hypothesis H02:** There is no relationship between the usage of Artificial Intelligence and service delivery satisfaction among customers of green product.
- **Alternate Hypothesis H12:** There is a relationship between the usage of Artificial Intelligence and service delivery satisfaction among customers of green product.

Conceptual Framework



The conceptual framework shows that Artificial Intelligence plays an important role in influencing both customer commitment and satisfaction of service delivery. Artificial intelligence tools such as chatbots, automated support, recommendation systems, personalized communication, and data-based service solutions help organizations provide faster, more accurate, and more convenient services to customers. When customers receive better service through AI-enabled platforms, their level of satisfaction with service delivery increases. At the s*ame time, AI also helps build customer commitment by improving trust, engagement, repeated interaction, and long-term relationship with the brand. The model also indicates that customer commitment influences satisfaction of service delivery, meaning that committed customers are more likely to feel satisfied because they have a stronger relationship and

positive attitude towards the organization. Therefore, the framework suggests that artificial intelligence directly improves customer commitment and service satisfaction, while customer commitment further contributes to better satisfaction in service delivery.

Data Analysis

This chapter presents the data analysis and interpretation for the study on Impact of Artificial Intelligence on Customer Commitment and Satisfaction in Green Product Service Delivery. The collected responses have been analyzed to understand the demographic profile of respondents and to examine the relationship between Usage of AI, Customer Commitment, and Satisfaction of Service Delivery. Frequency and percentage analysis are used to describe age, gender, and occupation, while correlation analysis is used to study the association between the main variables. Further, mediation analysis through PROCESS Model 4 is applied to examine whether Customer Commitment mediates the relationship between Satisfaction of Service Delivery and Usage of AI. Overall, this analysis helps to test the study objectives and draw meaningful conclusions from the collected data.

Demographic Factor

Age of Respondents

Age				
	Frequency	Percent	Valid Percent	Cumulative Percent
Under 18	3	2.1	2.1	2.1
18–25	119	85.0	85.0	87.1
26 - 35	7	5.0	5.0	92.1
36–45	11	7.9	7.9	100.0
Total	141	100.0	100.0	

The age-wise distribution shows that the majority of respondents belong to the 18–25 years age group, with 119 respondents (85.0%), indicating that the study mainly represents young customers. A smaller proportion of respondents belongs to the 36–45 years age group, with 11 respondents (7.9%), followed by 26–35 years, with 7 respondents (5.0%), and Under 18, with 3 respondents (2.1%). This shows that the responses are largely influenced by young adults, especially respondents in the 18–25 age group.

Gender of Respondents

Gender				
	Frequency	Percent	Valid Percent	Cumulative Percent
Male	34	24.3	24.3	24.3
Female	106	75.7	75.7	100.0
Total	141	100.0	100.0	

The gender distribution indicates that the sample is dominated by female respondents, with 106 females (75.7%), while 34 respondents (24.3%) are male. This shows that female respondents form the major part of the study sample. Therefore, the findings may reflect a stronger representation of female customers' views regarding usage of Artificial Intelligence, customer commitment, and satisfaction of service delivery in green product businesses.

Occupation of Respondents

Occupation				
	Frequency	Percent	Valid Percent	Cumulative Percent
Student	119	85.0	85.0	85.0
Employed	20	14.3	14.3	99.3
Freelancer / Self-employed	1	.7	.7	100.0
Total	141	100.0	100.0	

The occupation-wise distribution shows that most respondents are students, accounting for 119 respondents (85.0%) of the total sample. This is followed by 20 employed respondents (14.3%), while only 1 respondent (0.7%) belongs to the freelancer or self-employed category. This indicates that the study sample is mainly student-oriented, and the findings are likely to reflect the perceptions and experiences of young student customers toward AI usage and green product service delivery.

Objective and Hypothesis

Objective 1 To examine the relationship between the usage of Artificial Intelligence and customer commitment among customers of green product.

Null Hypothesis H01: There is no relationship between the usage of Artificial Intelligence and customer commitment among customers of green product.

Alternate Hypothesis H11: There is a relationship between the usage of Artificial Intelligence and customer commitment among customers of green product.

To study the above Null hypothesis Correlation test is applied. The results are as follows.

Correlations			
		Usage of AI	Customer Commitment
Usage of AI	Pearson Correlation	1	.244**
	P-value		.004
	N	140	140
Customer Commitment	Pearson Correlation	.244**	1
	P-value	.004	
	N	140	140
**. Correlation is significant at the 0.01 level (2-tailed).			

Interpretation: Above results indicate that p-value is 0.004. It is less than standard value of 0.05. Therefore, the correlation test is rejected. Hence null hypothesis is rejected and alternate hypothesis is accepted.

Conclusion: There is a relationship between the usage of Artificial Intelligence and customer commitment among customers of green product.

Findings: The correlation results show that there is a positive and significant relationship between Usage of AI and Customer Commitment. The Pearson correlation value is r = 0.244, which indicates a weak positive correlation between the two variables. The p-value is 0.004, which is less than 0.01, showing that the relationship is statistically significant at the 1% level of significance. This means that as the usage of AI increases, customer commitment also tends to increase to some extent. However, since the correlation value is low, the strength of the relationship is weak. Therefore, it can be interpreted that AI usage has a positive but limited association with customer commitment among the respondents.

Objective 2 To analyze the relationship between the usage of Artificial Intelligence and service delivery satisfaction among customers of green product.

Null Hypothesis H02: There is no relationship between the usage of Artificial Intelligence and service delivery satisfaction among customers of green product.

Alternate Hypothesis H12: There is a relationship between the usage of Artificial Intelligence and service delivery satisfaction among customers of green product.

To study the above Null hypothesis Correlation test is applied. The results are as follows.

Correlations			
		Usage of AI	Satisfaction of Service Delivery
Usage of AI	Pearson Correlation	1	.606**
	P-value		.001
	N	140	140
Satisfaction of Service Delivery	Pearson Correlation	.606**	1
	P-value	.001	
	N	140	140
**. Correlation is significant at the 0.01 level (2-tailed).			

Interpretation: Above results indicate that p-value is 0.001. It is less than standard value of 0.05. Therefore, the correlation test is rejected. Hence null hypothesis is rejected and alternate hypothesis is accepted.

Conclusion: There is a relationship between the usage of Artificial Intelligence and service delivery satisfaction among customers of green product.

Findings: The correlation results show that there is a positive and statistically significant relationship between Usage of AI and Satisfaction of Service Delivery. The Pearson correlation value is r = 0.606, which indicates a moderate positive correlation between the two variables. The p-value is 0.000, which is less than 0.01, showing that the relationship is significant at the 1% level of significance. This means that as the usage of AI increases, satisfaction with service delivery also increases. Therefore, it can be interpreted that AI usage plays an important role in improving service delivery satisfaction among customers of green businesses.

Objective 3 To evaluate the mediating role of customer engagement in the relationship between usage of Artificial Intelligence and service delivery satisfaction among customers of green product.

Model Summary

Outcome Variable	R	R Square	MSE	F-value	df1	df2	p-value	Interpretation
Customer Commitment	0.0104	0.0001	274.1185	0.0149	1	139	0.903	Not Significant
Usage of AI	0.653	0.4264	190.2942	51.2993	2	138	0	Significant

Interpretation: The first model shows that Satisfaction of Service Delivery explains only 0.01% variation in Customer Commitment and the model is not significant. The second model shows that Satisfaction of Service Delivery and Customer Commitment together explain 42.64% variation in Usage of AI, and the model is statistically significant.

Indirect Effect Table

Mediator	Relationship	Indirect Effect	Boot SE	Boot LLCI	Boot ULCI	Result
Customer Commitment	Satisfaction of Service Delivery → Customer Commitment → Usage of AI	0.0021	0.0194	-0.0437	0.0352	Not Significant

Interpretation: The indirect effect through customer commitment is not significant because the bootstrap confidence interval includes zero. Therefore, customer commitment does not mediate the relationship between satisfaction of service delivery and usage of AI.

Direct Effect Table

Effect	Relationship	Effect / Coefficient	SE	t-value	p-value	LLCI	ULCI	Result
Direct Effect	Satisfaction of Service Delivery → Usage of AI	0.5064	0.0541	9.3566	0	0.3994	0.6134	Significant

Interpretation: The direct effect of satisfaction of service delivery on usage of AI is positive and significant, as the p-value is less than 0.05. This means that better satisfaction with service delivery significantly increases the usage of AI.

3. Conclusion

The overall findings of the study indicate that the usage of Artificial Intelligence has a positive and significant relationship with both customer commitment and satisfaction of service delivery among customers of green products. The first objective confirms that AI usage is significantly associated with customer commitment, although the relationship is weak, suggesting that AI contributes to customer commitment to some extent. The second objective shows a stronger and moderate positive relationship between AI usage and satisfaction of service delivery, indicating that AI-enabled services such as quick response, personalized support, automated communication, and better service convenience help improve customer satisfaction. However, the mediation analysis shows that customer commitment does not significantly mediate the relationship between satisfaction of service delivery and usage of AI, as the indirect effect is not significant and the bootstrap confidence interval includes zero. Therefore, it can be concluded that AI directly plays an important role in improving service delivery satisfaction, but customer commitment does not act as a significant mediating factor in this relationship among customers of green products.

References

1. Ameen, N., Tarhini, A., Reppel, A., & Anand, A. (2021). Customer experiences in the age of artificial intelligence. Computers in Human Behavior, 114, 106548.
2. Huang, M. H., & Rust, R. T. (2018). Artificial intelligence in service. Journal of Service Research, 21(2), 155–172.
3. Huang, M. H., & Rust, R. T. (2021). A strategic framework for artificial intelligence in marketing. Journal of the Academy of Marketing Science, 49, 30–50.
4. Wirtz, J., Patterson, P. G., Kunz, W. H., Gruber, T., Lu, V. N., Paluch, S., & Martins, A. (2018). Brave new world: Service robots in the frontline. Journal of Service Management, 29(5), 907–931.
5. Prentice, C., Dominique Lopes, S., & Wang, X. (2020). The impact of artificial intelligence and employee service quality on customer satisfaction and loyalty. Journal of Hospitality Marketing & Management, 29(7), 739–756.
6. Chen, Y. S. (2010). The drivers of green brand equity: Green brand image, green satisfaction, and green trust. Journal of Business Ethics, 93(2), 307–319.

7. Chen, Y. S., & Chang, C. H. (2013). Towards green trust: The influences of green perceived quality, green perceived risk, and green satisfaction. Management Decision, 51(1), 63–82.
8. Chen, Y. S. (2013). Towards green loyalty: Driving from green perceived value, green satisfaction, and green trust. Sustainable Development, 21(5), 294–308.
9. Oliver, R. L. (1980). A cognitive model of the antecedents and consequences of satisfaction decisions. Journal of Marketing Research, 17(4), 460–469.
10. Anderson, E. W., & Sullivan, M. W. (1993). The antecedents and consequences of customer satisfaction for firms. Marketing Science, 12(2), 125–143.
11. Morgan, R. M., & Hunt, S. D. (1994). The commitment-trust theory of relationship marketing. Journal of Marketing, 58(3), 20–38.
12. Peattie, K., & Crane, A. (2005). Green marketing: Legend, myth, farce or prophesy? Qualitative Market Research: An International Journal, 8(4), 357–370.
13. Chen, Y. S., & Chang, C. H. (2012). Enhance green purchase intentions: The roles of green perceived value, green perceived risk, and green trust. Management Decision, 50(3), 502–520.
14. Lin, J., Lobo, A., & Leckie, C. (2017). Green brand benefits and their influence on brand loyalty. Marketing Intelligence & Planning, 35(3), 425–440.
15. Polonsky, M. J. (1994). An introduction to green marketing. Electronic Green Journal, 1(2), 1–10.