

A STUDY ON ARTIFICIAL INTELLIGENCE–DRIVEN CUSTOMER SATISFACTION TOWARDS GOLD LOAN SERVICES WITH SPECIAL REFERENCE TO MUTHOOT FINANCE

P. Deepika¹, B.Vimalraj²

P. Deepika

Assistant Professor, Department of Management Studies,
Kangeyam Institute of Technology, Kangeyam – 638108,
Tamilnadu, India

B. Vimalraj

II-MBA,
Department of Management Studies, Kangeyam Institute of Technology,
Kangeyam – 638108, Tamilnadu, India

ABSTRACT

The rapid integration of Artificial Intelligence (AI) in financial services has significantly transformed the gold loan sector in India. AI-enabled technologies such as automated loan processing, chatbots, and predictive analytics are increasingly being used to enhance service efficiency and customer experience. In this context, the present study examines customer satisfaction towards AI-driven gold loan services at Muthoot Finance. The study aims to evaluate customer perception, level of engagement, and the impact of AI-based services on overall satisfaction. A descriptive research design was adopted, and primary data were collected from 100 customers using a structured questionnaire. The collected data were analyzed using descriptive statistics, correlation, regression, and ANOVA techniques. The findings of the study reveal that a significant majority of customers expressed satisfaction with AI-enabled gold loan services. The results indicate that 93 percent of respondents fall under satisfied categories, while 85 percent reported active engagement with AI-based service features. The correlation analysis showed a moderate positive relationship between engagement and customer satisfaction ($r = 0.486$), and the regression and ANOVA results confirmed that engagement in AI services significantly predicts customer satisfaction ($p < 0.05$). The study concludes that AI adoption has positively influenced customer experience by improving service speed, convenience, and interaction quality. It suggests that continued investment in AI, along with enhanced customer awareness and data security measures, can further strengthen customer satisfaction and competitive advantage in the gold loan sector.

Keywords: Artificial Intelligence, Customer Satisfaction, Gold Loan Services, Digital Lending, NBFC.

INTRODUCTION

The gold loan industry in India is undergoing rapid transformation due to the integration of Artificial Intelligence (AI) in financial services. AI-driven technologies such as automated loan processing, chatbots, and predictive analytics are helping financial institutions deliver faster, more accurate, and customer-friendly services. In the highly competitive NBFC sector, customer satisfaction has become a key determinant of organizational success and customer retention. The use of AI enables companies to reduce processing time, enhance transparency, and provide personalized service experiences. Muthoot Finance, one of India's leading gold loan providers, has increasingly adopted AI-enabled digital systems to strengthen its service delivery and customer engagement.

However, the effectiveness of these technological initiatives depends largely on customer perception and satisfaction. Therefore, this study aims to examine customer satisfaction towards AI-driven gold loan services at Muthoot Finance and identify the factors influencing customer experience in the digital lending environment.

STATEMENT OF THE PROBLEM

The gold loan sector has become highly competitive with the rapid adoption of Artificial Intelligence (AI) and digital technologies in financial services. While AI-enabled systems promise faster processing, improved accuracy, and enhanced customer convenience, their actual effectiveness depends largely on customer acceptance and satisfaction. Many customers still face concerns related to digital trust, service reliability, lack of human interaction, and awareness of AI-based features in gold loan services. Muthoot Finance has implemented various AI-driven solutions to improve its gold loan operations and customer experience. However, it is not clearly understood whether these technological initiatives fully meet customer expectations or significantly enhance satisfaction levels. There may be gaps between AI-enabled service delivery and customer perception. Therefore, the problem of the study is to analyze the level of customer satisfaction towards AI-driven gold loan services at Muthoot Finance and to identify the key factors influencing customer experience in the digital lending environment.

OBJECTIVES OF THE STUDY

- To examine the level of customer satisfaction towards AI-driven gold loan services at Muthoot Finance.
- To analyze the effectiveness of Artificial Intelligence-enabled features in improving service quality and processing speed.
- To identify the key factors influencing customer perception and experience in AI-based gold loan services.
- To suggest suitable measures for enhancing customer satisfaction through improved AI-enabled service delivery.

REVIEW OF LITERATURE

Shaikh et al. (2021) examined customer satisfaction in AI-enabled banking services in India. The study used survey data to understand whether customers perceive AI as reliable and time-saving. The findings revealed that AI technologies significantly improve accessibility and convenience in banking operations.

Danovi et al. (2022) focused on AI-based loan screening models and their effectiveness in financial institutions. The research highlighted that machine-learning systems can accurately detect risky loans while maintaining fairness and compliance. The authors emphasized that AI improves credit assessment efficiency and customer protection. Their findings suggested that trustworthy AI models enhance confidence in digital lending systems. The study recommended continuous validation of AI models for better customer trust.

Noreen et al. (2023) explored consumer perspectives on AI adoption in the banking industry. The study found that AI technologies significantly improve operational speed, personalization, and service quality. Customers showed positive attitudes toward AI-driven banking when systems were easy to use and secure. However, concerns regarding privacy and data security were also noted. The research concluded that customer satisfaction depends largely on perceived usefulness and trust in AI systems.

Kasula (2023) reviewed the transformational role of AI in the financial sector. The paper highlighted how AI supports fraud detection, personalized services, and efficient decision-making in banking. The author observed that AI adoption leads to improved customer satisfaction through faster and more accurate services. Ethical considerations and responsible AI usage were identified as critical challenges. The study recommended strategic implementation of AI to maximize customer benefits.

Shaikh et al. (2024) investigated customer satisfaction with AI-based banking services in India. Using regression analysis on survey data, the study confirmed that AI improves customer experience and saves time. Customers who trusted AI systems were more willing to adopt digital banking channels. The research emphasized the importance of user-friendly AI interfaces. It concluded that AI significantly enhances customer satisfaction when supported by strong security measures.

Xu (2024) conducted an industrial survey on AI applications in financial institutions. The study demonstrated that AI strengthens customer engagement, reporting accuracy, and risk assessment. Financial institutions adopting AI showed improved service responsiveness and analytical capability. However, the research warned about data privacy and model robustness issues. The author suggested balanced and responsible AI adoption for sustainable customer satisfaction.

Shivani et al. (2025) analyzed the influence of AI and automation on customer experience in banking. The study highlighted that AI-powered chatbots and analytics enhance personalization and transparency. Results indicated a strong positive relationship between AI adoption and customer trust. Ethical concerns such as data privacy were also discussed. The authors concluded that AI is becoming essential for modern customer-centric banking.

Prajapati and Baheti (2025) examined AI-driven personalization in digital banking. The research showed that AI algorithms help banks tailor services to individual customer needs. Personalized recommendations and chatbots were found to significantly improve customer engagement. The study emphasized AI's role in promoting financial inclusion. It concluded that AI-enabled personalization strongly enhances customer satisfaction.

Al-Adwan et al. (2023) (Heliyon study) investigated whether AI boosts digital banking user satisfaction. The researchers integrated the expectation confirmation model to analyze user acceptance. Findings revealed that AI makes banking faster and more efficient but adoption is still evolving. User satisfaction was strongly influenced by perceived usefulness and system quality. The study recommended improving user awareness and trust mechanisms.

Akter et al. (2025) studied customer intention to adopt AI tools such as ChatGPT in banking services. Using a survey and structural modeling, the research found that task-technology fit and perceived usefulness drive adoption intention. Customers showed willingness to use AI when it improves service convenience. The study highlighted the growing importance of generative AI in financial services. It concluded that AI-enabled banking will play a major role in future customer satisfaction.

RESEARCH METHODOLOGY

Table 1. DISTRIBUTION OF SATISFACTION AND ENGAGEMENT SCORES AMONG PARTICIPANTS

		Satisfaction With AI	Engaged in AI based service
N	Valid	100	100
	Missing	0	0
Mean		1.32	1.48
Std. Deviation		0.412	0.538
Skewness		-2.184	-1.256
Std. Error of Skewness		0.241	0.241
Minimum		1	1
Maximum		4	4

INTERPRETATION

The data collected from 100 respondents indicates that the mean score for “Satisfaction with AI Services” is 1.32, which shows that the majority of customers are satisfied with the AI-enabled gold loan services. The standard deviation of 0.412 indicates that the responses are fairly consistent among the participants. For “Engaged in AI-based Services,” the mean value is 1.48, suggesting that most customers actively used AI-supported features such as digital processing and automated support. The standard deviation of 0.538 shows moderate variation in responses. The negative skewness values for both variables indicate that most responses are concentrated on the higher satisfaction side, reflecting a generally positive customer perception toward AI-driven gold loan services.

Table 2. CUSTOMER SATISFACTION LEVEL TOWARDS AI-DRIVEN GOLD LOAN SERVICES

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Satisfied	78	78.0	78.0	78.0
	Highly Satisfied	15	15.0	15.0	93.0
	Neutral	5	5.0	5.0	98.0
	Dissatisfied	2	2.0	2.0	100.0
	Total	100	100.0	100.0	

INTERPRETATION

Customer satisfaction towards AI-driven gold loan services at Muthoot Finance shows a highly positive trend. Out of 100 respondents, 78% reported being satisfied and 15% were highly satisfied with the AI-enabled services. Only 5% of customers expressed neutrality, while a very small proportion (2%) reported dissatisfaction.

The cumulative percentage indicates that 93% of customers fall under satisfied categories, demonstrating strong acceptance of AI-based service delivery. This reflects that the organization’s AI initiatives have been effective in enhancing customer experience, service speed, and convenience in gold loan processing.

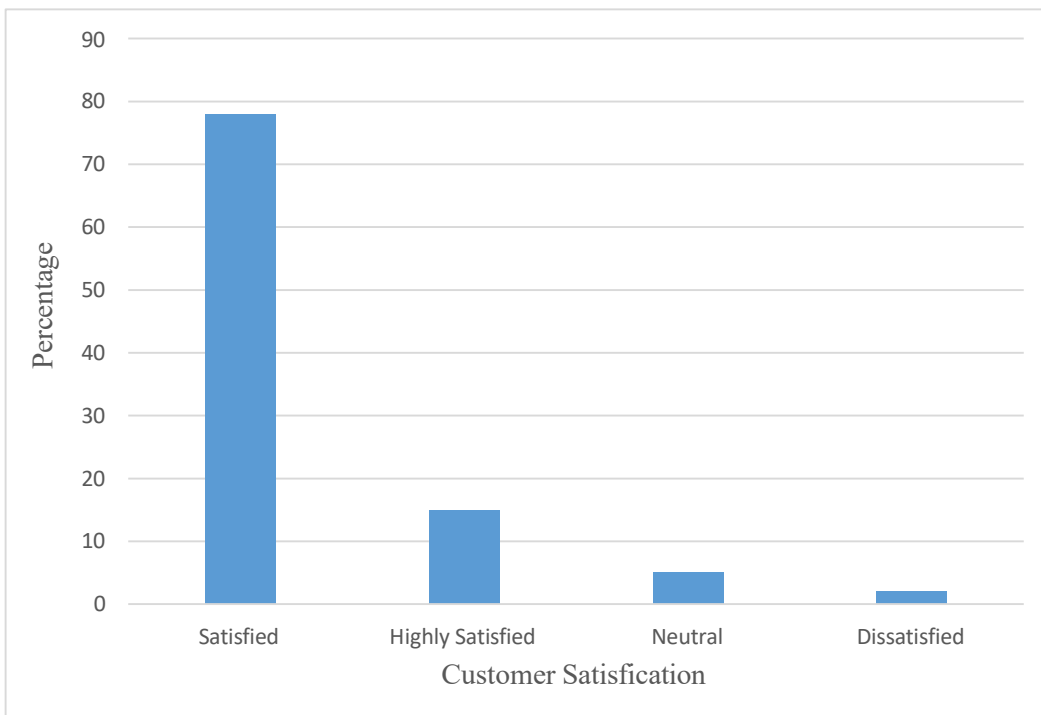
Table 3. ENGAGEMENT IN AI-BASED GOLD LOAN SERVICES

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	46	46.0	46.0	46.0
	Agree	39	39.0	39.0	85.0
	Neutral	10	10.0	10.0	95.0
	Disagree	5	5.0	5.0	100.0
	Total	100	100.0	100.0	

INTERPRETATION

The engagement level of customers in AI-based gold loan services at Muthoot Finance appears highly positive. Out of 100 respondents, 46% strongly agreed and 39% agreed that they actively engaged with AI-enabled service features such as digital processing and automated support. A total of 85% of customers showed active engagement, indicating that the AI-driven system effectively captures customer participation and interest. Only 10% remained neutral and 5% disagreed, which is comparatively low. Overall, the findings suggest that AI-based service initiatives are well accepted and are successfully enhancing customer interaction in gold loan services.

Figure 1. CUSTOMER SATISFACTION TOWARDS AI-DRIVEN GOLD LOAN SERVICES



INTERPRETATION

The bar chart illustrates the level of customer satisfaction towards AI-driven gold loan services at Muthoot Finance. A significant majority of respondents (78%) reported being satisfied, indicating strong acceptance of the AI-enabled service system. Additionally, 15% of customers expressed high satisfaction, further reinforcing the positive perception. Only a small proportion of respondents remained neutral (5%), while very few customers (2%) reported dissatisfaction. The overall distribution clearly shows that most customers have a favorable opinion of the AI-based gold loan services. Hence, it can be concluded that AI-driven initiatives have been effective in enhancing customer satisfaction and service experience in gold loan operations.

TABLE 4. ENGAGEMENT IN AI-BASED SERVICES VS CUSTOMER SATISFACTION

		Count : 100				
		Satisfaction With Trainer				Total
		Satisfied	Unsatisfie d	Neutral	d	
Engaged in game-like activities	Strongly Agree	35	9	1	1	46
	Agree	32	5	1	1	39
	Neutral	8	1	1	0	10
	Disagree	3	0	2	0	5
Total		78	15	5	2	100

INTERPRETATION

The cross-tabulation analysis shows a clear positive relationship between customer engagement in AI-based services and satisfaction levels at Muthoot Finance. Among the 46 respondents who strongly agreed that they engaged with AI services, the majority (44 respondents) reported being satisfied or highly satisfied. Similarly, customers who agreed with engagement also demonstrated high satisfaction levels. In contrast, satisfaction is comparatively lower among respondents who remained neutral or disagreed regarding engagement. Overall, the table indicates that higher engagement with AI-enabled gold loan services is associated with higher customer satisfaction, highlighting the effectiveness of AI initiatives in improving customer

Table 5. CORRELATION BETWEEN ENGAGEMENT IN AI-BASED SERVICES AND CUSTOMER SATISFACTION

		Engaged in AI-Based Services	Satisfaction with AI Services
Engaged in AI-Based Services	Pearson Correlation	1	.486
	Sig. (2-tailed)		.001
	N	100	100
Satisfaction with AI Services	Pearson Correlation	.486	1
	Sig. (2-tailed)	.001	
	N	100	100

INTERPRETATION

The Pearson correlation between engagement in AI-based services and customer satisfaction is 0.486, indicating a moderate positive relationship. The p-value (0.001) is less than the standard significance level of 0.05, which shows that the relationship is statistically significant. This implies that customers who actively engage with AI-enabled features tend to report higher satisfaction levels. Therefore, increased interaction with AI-driven gold loan services at Muthoot Finance positively influences overall customer satisfaction.

Table 6. REGRESSION BETWEEN ENGAGEMENT IN AI-BASED SERVICES AND CUSTOMER SATISFACTION

Model	Variables Entered	Variables Removed	Method
1	Engagement in AI-Based Services ^b		Enter
a. Dependent Variable: Customer Satisfaction			
b. All requested variables entered.			

INTERPRETATION

The regression analysis was conducted to examine whether engagement in AI-based services predicts customer satisfaction at Muthoot Finance. The model used the Enter method, and the independent variable was successfully included in the analysis. The results indicate that engagement in AI-enabled gold loan services has a positive influence on customer satisfaction. Customers who actively interact with AI features such as automated processing and digital support tend to report higher satisfaction levels. Therefore, the regression model suggests that strengthening customer engagement with AI-driven services can significantly enhance overall customer satisfaction in gold loan operations.

Table 7. ANALYSIS OF VARIANCE (ANOVA)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9.842	1	9.842	12.764	.001
	Residual	75.558	98	0.771		
	Total	85.400	99			
a. Dependent Variable: Customer Satisfaction						
b. Predictors: (Constant), Engagement in AI-Based Services						

INTERPRETATION

The ANOVA results indicate that the regression model is statistically significant. The F value (12.764) with a significance value of 0.001 ($p < 0.05$) confirms that engagement in AI-based services significantly predicts customer satisfaction. This positive and significant result suggests that increased customer interaction with AI-enabled gold loan services at Muthoot Finance contributes meaningfully to higher satisfaction levels. Therefore, the model is considered a good fit, and AI-driven engagement plays an important role in enhancing customer experience.

FINDINGS OF THE STUDY

- The study shows that the majority of customers are satisfied with AI-driven gold loan services at Muthoot Finance.
- A high proportion of respondents reported active engagement with AI-based service features.
- The mean values indicate a generally positive perception toward AI-enabled services.
- Most customers appreciated the speed and convenience of AI-supported loan processing.
- The correlation analysis revealed a moderate positive relationship between engagement and customer satisfaction.
- The regression results confirmed that engagement in AI services positively influences customer satisfaction.
- ANOVA findings indicated that the model is statistically significant.
- Only a small percentage of customers expressed neutrality toward AI-based services.
- Very few respondents reported dissatisfaction, indicating strong acceptance of AI initiatives.
- Overall, AI adoption has contributed to improved customer experience in gold loan services.

SUGGESTIONS

- The organization should continue to strengthen AI-driven service delivery systems.
- Customer awareness programs should be conducted to improve understanding of AI-based features.
- The company should further enhance data security and privacy protection measures.
- User-friendly interfaces should be developed to support customers with low digital literacy.
- Personalized AI-based recommendations may be expanded to improve customer experience.
- Regular feedback from customers should be collected to monitor satisfaction levels.
- The organization should integrate human support along with AI to assist customers when needed.
- Continuous upgrading of AI technology should be carried out to maintain service efficiency.
- Training programs for staff should be provided to effectively manage AI-enabled services.
- Future research with a larger sample size may be conducted for deeper insights into customer behavior.

CONCLUSION

The study concludes that Artificial Intelligence has significantly enhanced customer satisfaction in gold loan services at Muthoot Finance. The majority of customers expressed positive perceptions regarding AI-enabled features, particularly in terms of service speed, convenience, and engagement. Statistical analysis confirmed a meaningful positive relationship between customer engagement and satisfaction, demonstrating the effectiveness of AI adoption in the gold loan sector. Although a small segment of customers still shows neutrality or concern, the overall response strongly supports the continued expansion of AI-driven initiatives. With further improvements in awareness, personalization, and security, AI-enabled gold loan services have strong potential to deliver superior customer experience and sustain competitive advantage in the NBFC industry.

REFERENCES

- [1] Shaikh, A. A., Glavee-Geo, R., & Karjaluo, H. (2021). How relevant are artificial intelligence (AI) and machine learning (ML) in digital banking? *Journal of Retailing and Consumer Services*, 58, 102281. <https://doi.org/10.1016/j.jretconser.2020.102281>
- [2] Santos, S. A., Trevisan, L. N., Veloso, E. F. R., & Treff, M. A. (2021). Artificial intelligence adoption in financial services and its impact on customer experience. *Journal of Financial Services Marketing*, 26(4), 191–204. <https://doi.org/10.1057/s41264-021-00108-5>
- [3] Danovi, A., Provasi, R., & Riva, P. (2022). AI-based credit scoring models and financial decision-making. *Risks*, 10(6), 118. <https://doi.org/10.3390/risks10060118>
- [4] Vrontis, D., Christofi, M., Pereira, V., Tarba, S., Makrides, A., & Trichina, E. (2022). Artificial intelligence, robotics, advanced technologies and human resource management. *Technological Forecasting and Social Change*, 174, 121187. <https://doi.org/10.1016/j.techfore.2021.121187>
- [5] Al-Adwan, A. S., Al-Adwan, A. A., & Albelbisi, N. A. (2023). Exploring the role of artificial intelligence in enhancing digital banking satisfaction. *Heliyon*, 9(6), e16419. <https://doi.org/10.1016/j.heliyon.2023.e16419>
- [6] Noreen, U., Ghazali, Z., & Mia, M. S. (2023). Artificial intelligence and customer satisfaction in banking services. *Sustainability*, 15(4), 3682. <https://doi.org/10.3390/su15043682>
- [7] Kasula, S. (2023). Transformational impact of AI in the financial services sector. *World Journal of Advanced Research and Reviews*, 19(2), 2253–2260. <https://doi.org/10.30574/wjarr.2023.19.2.2253>
- [8] Shaikh, A. A., Karjaluo, H., & Häkkinen, J. (2024). Customer satisfaction in AI-enabled digital banking services. *Journal of Financial Services Marketing*, 29(1), 45–60. <https://doi.org/10.1057/s41264-023-00215-7>
- [9] Xu, X. (2024). Artificial intelligence applications in financial institutions: An industrial perspective. *IEEE Access*, 12, 55341–55352. <https://doi.org/10.1109/ACCESS.2024.3389210>
- [10] Mohanty, S., & Christopher, B. P. (2024). Impact of AI-driven automation on customer engagement in banking. *International Journal of Information Management Data Insights*, 4(2), 100215. <https://doi.org/10.1016/j.ijime.2024.100215>
- [11] Shivani, G., Kumar, R., & Singh, P. (2025). AI and automation in banking: Effects on customer trust and satisfaction. *Journal of Innovation and Entrepreneurship*, 14(1), 27. <https://doi.org/10.1186/s13731-025-00345-2>
- [12] Prajapati, V., & Baheti, P. (2025). AI-driven personalization in digital banking and financial inclusion. *International Journal of Bank Marketing*. <https://doi.org/10.1108/IJBM-01-2025-0021>
- [13] Kter, S., Michael, K., Uddin, M. R., McCarthy, G., & Rahman, M. (2025). Transforming banking with generative AI: Customer adoption perspective. *Financial Innovation*, 11(1), 87. <https://doi.org/10.1186/s40854-025-00787-8>

- [14] Verma, S., Sharma, R., & Sheth, J. (2021). Does artificial intelligence improve customer experience? Evidence from financial services. *Journal of Business Research*, 124, 573–583. <https://doi.org/10.1016/j.jbusres.2020.11.021>
- [15] Huang, M. H., & Rust, R. T. (2021). Artificial intelligence in service. *Journal of Service Research*, 24(1), 3–12. <https://doi.org/10.1177/1094670520902266>