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A Study on Awareness of AI-Fintech Innovation by Brokers Which leads to Financial Literacy with Respect to Surat Region

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Abstract: The rapid advancement of Artificial Intelligence (AI) in financial technology (FinTech) has significantly transformed brokerage services. This study examines the awareness of AI-FinTech innovations among brokers in Surat region and evaluates how such awareness contributes to financial literacy. A descriptive research design was adopted, involving structured questionnaires distributed to 100 brokers. The findings indicate that awareness of AI-driven tools positively influences adoption behaviour, which in turn enhances financial knowledge, decision-making capability, and service efficiency. The study also identifies technological readiness, digital literacy, and cybersecurity awareness as key factors influencing adoption.

Index Terms **– Artificial Intelligence, FinTech, Financial Literacy, Brokers, Digital Adoption, Surat Region.**

INTRODUCTION

Artificial Intelligence has become a transformative force in the financial services sector. AI-enabled FinTech platforms provide algorithmic trading, robo-advisory services, automated risk assessment, and predictive analytics. Brokers play a critical role in adopting these technologies to enhance service quality and client education. In emerging financial hubs like Surat, the integration of AI tools has the potential to improve both operational efficiency and financial literacy among stakeholders.

NEED OF THE STUDY.

The increasing use of AI in FinTech has transformed brokerage services, but its adoption among brokers is still not uniform, especially in regions like Surat. Many brokers face challenges related to awareness, technical knowledge, and trust in AI-based tools. Therefore, this study is needed to analyze the level of awareness and adoption of AI–FinTech among brokers and to understand its role in improving financial literacy. It also helps identify key factors influencing adoption, providing useful insights for better implementation and training.

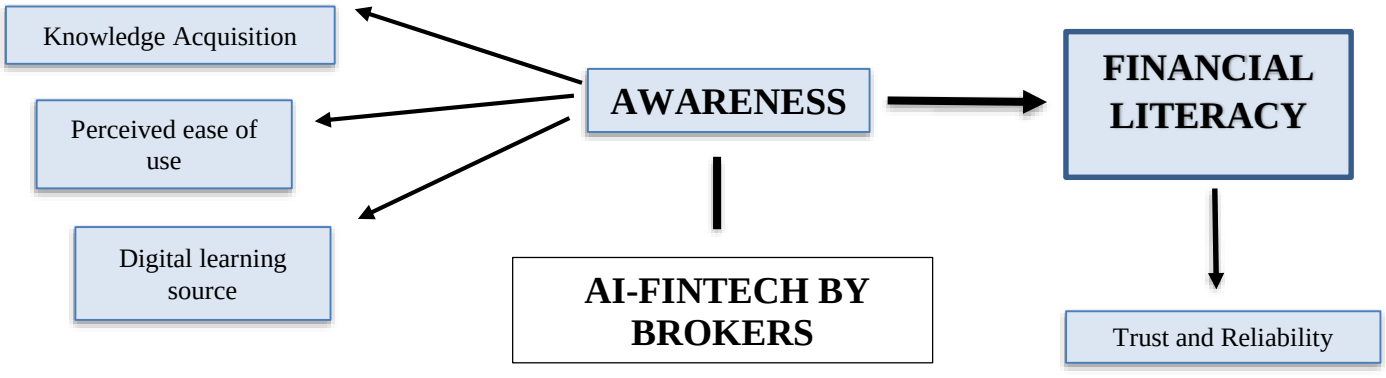
3.1Population and Sample

The population of the study consists of all brokers operating in the Surat region who are involved in financial trading and related activities. The sample size for the study is 100 brokers, selected from this population using a convenient sampling method to collect primary data through structured questionnaires.

3.2 Data and Sources of Data

he study is based on both primary and secondary data. Primary data were collected from 100 brokers in the Surat region through structured questionnaires to understand their awareness and adoption of AI–FinTech tools. Secondary data were obtained from research papers, journals, articles, and relevant online sources to support the study and provide theoretical background.

3.3 Theoretical framework



3.4 Statistical tools

This section elaborates the proper statistical/econometric/financial models which are being used to forward the study from data towards inferences. The detail of methodology is given as follows.

1. **Descriptive Statistics:**

Descriptive statistics were used to summarize and present the demographic profile of respondents, such as age, gender, education qualification, years of experience, and type of brokerage. Frequency and percentage analysis helped in understanding the composition and characteristics of the sample respondents.

 Ideal-Measure:

- Percentages should total 100% and are most suitable for categorical data.

2. **Mean and Standard Deviation:**

The mean was used to determine the average response for statements related to AI–FinTech awareness, adoption, and financial literacy. Standard deviation measured the dispersion of responses around the mean, indicating consistency or variability in respondents' opinions.

 Ideal Measure:

- Mean value closer to 4 or 5 on a 5-point Likert scale indicates high agreement.
- Standard deviation ≤ 1.0 indicates consistency in responses.

3. **Reliability Test (Cronbach's Alpha):**

Cronbach's Alpha was applied to test the internal consistency of the questionnaire items measuring awareness, adoption, and financial literacy. It ensured that the items within each construct measured the same underlying concept.

 Ideal Measure:

- $\alpha \geq 0.70$ indicates acceptable reliability.
- Values above 0.80 indicate good reliability.

4. **Reliability Test (Cronbach's Alpha):**

The Kolmogorov–Smirnov and Shapiro–Wilk tests were conducted to examine whether the data followed a normal distribution. The results helped in deciding the appropriate statistical tests for further analysis.

 Ideal Measure:

- Sig. > 0.05 → Normally distributed data
- Sig. < 0.05 → Non-normal data

The data in this study was found to be non-normally distributed; therefore, non-parametric tests were applied where required.

5. **Factor Analysis:**

Exploratory Factor Analysis was used to identify the underlying factors influencing brokers' awareness and adoption of AI–FinTech innovations. The technique helped in reducing a large number of variables into a smaller set of meaningful factors such as knowledge acquisition, perceived ease of use, trust and reliability, and performance efficiency.

 Ideal Measures:

- Factor loading ≥ 0.50
- Communalities ≥ 0.50
- Total variance explained ≥ 50%

6. **KMO and Bartlett's Test:**

The Kaiser–Meyer–Olkin (KMO) measure tested the adequacy of the sample size, while Bartlett's Test of Sphericity examined whether the variables were sufficiently correlated for factor analysis.

 Ideal Measures:

- KMO ≥ 0.60 indicates adequate sample size
- Bartlett's Test Sig. < 0.05 confirms suitability for factor analysis.

7. **Chi-Square Test of Association:**

The Chi-square test was applied to examine the association between demographic variables and awareness or adoption of AI–FinTech tools. This test helped in identifying whether demographic characteristics influence awareness levels.

 Ideal Measure:

- Sig. < 0.05 indicates a significant association.

IV. RESULTS AND DISCUSSION

4.1 Results of Descriptive Statics of Study Variables

Table 1 Descriptive Statistics

Descriptive Statistics			
	Mean	Std. Deviation	Analysis N
1. I know how AI–Fintech tools function in trading activities.	2.92	1.303	102
2. I understand how AI tools help in analyzing market data.	3.13	1.114	102
3. I am aware of different AI–Fintech applications available to brokers.	3.25	1.087	102
4. I know how AI tools support client portfolio management.	3.21	1.229	102
5. I have sufficient knowledge to explain AI–Fintech tools to clients.	3.17	1.235	102
6. I learned about AI–Fintech tools through my organization.	3.03	1.301	102

7. Financial news and media increase my awareness of AI–Fintech.	3.35	1.317	102
8. Training programs or workshops informed me about AI–Fintech tools.	3.19	1.225	102
9. Online platforms and webinars are my main source of AI–Fintech knowledge.	3.26	1.281	102
10. Other brokers and peers help me understand AI–Fintech innovations.	3.09	1.178	102
11. AI–Fintech tools help improve my efficiency as a broker.	3.35	1.078	102
12. AI-based platforms support better investment decision-making.	3.45	1.131	102
13. AI tools reduce manual effort in trading and reporting.	3.56	1.191	102
14. AI–Fintech applications improve client service quality.	3.35	1.131	102
15. I am aware of data privacy risks involved in AI–Fintech usage.	3.38	1.099	102
16. I know that AI systems may sometimes give incorrect recommendations.	3.32	1.212	102
17. I am aware of cybersecurity risks related to AI-based platforms.	3.24	1.228	102
18. I understand the importance of risk management while using AI tools.	3.44	1.068	102
19. I evaluate risks before relying on AI–Fintech systems.	3.41	1.238	102
20. AI–Fintech tools are easy to learn.	3.48	1.183	102
21. I believed that AI-based platforms are user friendly.	3.48	1.158	102
22. I can easily integrate AI tools into my daily broking activities.	3.20	1.267	102
23. AI–Fintech tools do not require high technical skills to operate.	3.44	1.165	102
24. I trust AI–Fintech tools for financial transactions.	3.33	1.197	102
25. AI-based platforms provide secure handling of client data.	3.29	1.165	102
26. I feel confident using AI-Fintech tools to make client portfolio decisions.	3.48	1.249	102
27. AI–Fintech systems provide reliable outputs.	3.35	1.001	102
28. Security features influence my decision to adopt AI–Fintech tools.	3.32	1.153	102
29. I am familiar with commonly used AI–Fintech tools in broking.	3.48	1.132	102
30. My previous experience with technology helps me use AI tools.	3.56	1.174	102
31. Familiarity with AI–Fintech encourages continued usage.	3.50	1.158	102
32. I am satisfied with the performance of AI–Fintech tools.	3.40	1.083	102
33. AI–based Fintech tools I use regularly meet my professional expectations.	3.29	1.148	102
34. Continuous innovation in AI–Fintech motivates me to adopt them.	3.45	1.149	102
35. I would recommend AI–Fintech tools to other brokers.	3.43	1.148	102
36. AI–Fintech tools improve my understanding of financial products.	3.51	1.158	102
37. AI-based platforms enhance my investment knowledge.	3.45	1.131	102
38. AI tools help me analyze financial risks better.	3.52	1.175	102
39. AI–Fintech usage improves my financial decision-making ability.	3.37	1.089	102

Interpretation: - Above table No.1 is indicated that the respondents show a moderately positive attitude toward AI–Fintech tools, with mean values mostly above 3, indicating adequate knowledge and awareness. Perceived usefulness is strong, as respondents believe AI tools improve efficiency, decision-making, risk analysis, and client service. Ease of use and user-friendliness are also rated favorably, suggesting that AI–Fintech tools for trading can be integrated into daily broking activities without high technical difficulty. Awareness of security, privacy, and risk management is moderate to high, reflecting cautious adoption. Overall, brokers demonstrate satisfaction, confidence, and willingness to continue using and recommend AI–Fintech tools, indicating growing acceptance with scope for further skill enhancement.

4. Results of KMO and Bartlett's Test

Table 2 KMO and BARTLETT'S TEST

KMO and Bartlett's Test	
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.891

Interpretation: - Above table no.2 is indicated that the KMO value of 0.891 indicates excellent sampling adequacy, and Bartlett's Test of Sphericity is significant ($\chi^2 = 3386.306$, df = 741, p = 0.000), confirming that the data is suitable for factor analysis.

Table 3 Table of abbreviations

FULL FORM	ABBREVIATION
EPI	Experience and Performance Impact
KA	Knowledge and Acquisition
PEU	Perceived Ease of Use
TR	Trust and Reliability
PE	Performance Efficiency
DLS	Digital Learning Source

4.3 Results of Rotated Component Matrix

Table 4 Rotated Component Matrix

Rotated Component Matrix						
	Component					
	EPI	KA	PEU	TR	PE	DLS
1. Security features influence my decision to adopt AI–Fintech tools.	.635					
2. I am familiar with commonly used AI–Fintech tools in broking.	.738					
3. My previous experience with technology helps me use AI tools.	.743					
4. Familiarity with AI–Fintech encourages continued usage.	.656					
5. I am satisfied with the performance of AI–Fintech tools.	.625					
6. Continuous innovation in AI–Fintech motivates me to adopt them.	.618					
7. I would recommend AI–Fintech tools to other brokers.	.759					
8. AI–Fintech tools improve my understanding of financial products.	.569					
9. AI-based platforms enhance my investment knowledge.	.535					
10. AI tools help me analyze financial risks better.	.551					
11. I know how AI–Fintech tools function in trading activities.		.687				
12. I understand how AI tools help in analyzing market data.		.662				
13. I am aware of different AI–Fintech applications available to brokers.		.592				
14. I know how AI tools support client portfolio management.		.695				
15. I have sufficient knowledge to explain AI–Fintech tools to clients.		.742				
16. I learned about AI–Fintech tools through my organization.		.751				
17. Financial news and media increase my awareness of AI–Fintech.		.635				
18. Training programs or workshops informed me about AI–Fintech tools.		.557				
19. Other brokers and peers help me understand AI–Fintech innovations.		.561				
20. I am aware of data privacy risks involved in AI–Fintech usage.			.563			
21. I am aware of cybersecurity risks related to AI-based platforms.			.523			
22. I evaluate risks before relying on AI–Fintech systems.			.764			
23. AI–Fintech tools are easy to learn.			.624			
24. I believed that AI-based platforms are user friendly.			.696			
25. I can easily integrate AI tools into my daily broking activities.			.634			
26. AI–Fintech tools do not require high technical skills to operate.			.684			
27. AI–Fintech usage improves my financial decision-making ability.			.507			
28. AI-based platforms support better investment decision-making.				.513		
29. I trust AI–Fintech tools for financial transactions.				.618		
30. AI-based platforms provide secure handling of client data.				.500		

31. I feel confident using AI-Fintech tools to make client portfolio decisions.				.530		
32. AI–Fintech systems provide reliable outputs.				.651		
33. AI–Fintech tools help improve my efficiency as a broker.					.526	
34. AI tools reduce manual effort in trading and reporting.					.704	
35. AI–Fintech applications improve client service quality.					.652	
36. Online platforms and webinars are my main source of AI–Fintech knowledge.						.742

Interpretation: - Above table No. 4 is indicated that The rotated component matrix shows a clear six-factor structure, indicating that brokers' perceptions of AI–Fintech tools for trading are well organized and conceptually distinct. The factors identified are Experience & Performance Impact, Knowledge Acquisition, Perceived Ease of Use, Trust and Reliability, Performance Efficiency, and Digital Learning Sources. High factor loadings across items confirm that brokers' experience with technology, learning and awareness, ease of use, trust and security, efficiency gains, and digital learning channels play a significant role in AI–Fintech adoption. Overall, the results validate the measurement model and highlight that both awareness and performance-related factors jointly influence brokers' acceptance and effective use of AI–Fintech tools.

4.4 Results of Reliability Test

Table 5 Reliability Test

Reliability Statistics	
Cronbach's Alpha	**N of Items**
.966	**6**

Interpretation: - Above table no.5 is indicated that the Cronbach's Alpha value of 0.966 indicates excellent reliability, showing that the six items are highly consistent in measuring the construct. Compared to typical thresholds ($\alpha \geq 0.7$ considered acceptable, $\alpha \geq 0.8$ good, $\alpha \geq 0.9$ excellent), this scale demonstrates superior internal consistency, suggesting it is more reliable than scales with lower alpha values and suitable for accurate measurement and analysis.

4.5 Results of Chi square Test

H0: - There is no significant association between Age and awareness factors of AI-Fintech tools of trading by brokers.

Table 6 Chi Square of Age and Awareness Factors

Factor	Pearson Chi-Square	Df	(p-value)	Result
Knowledge acquisition	24.926	16	.071	Not significant. H0 is fail to reject.
Perceived ease of use	17.665	16	.344	Not significant. H0 is fail to reject.
Digital Learning Sources	16.182	16	.440	Not significant. H0 is fail to reject.

Interpretation: - Above table no.6 is indicated that the Chi-square test is used to examine the association between age and awareness of AI-Fintech tools for trading by brokers. The results show that knowledge acquisition (p = 0.071), perceived ease of use (p = 0.344), and digital learning sources (p = 0.440) all have p-values greater than 0.05. Therefore, no significant association exists between age and any of the awareness factors. Hence, the null hypothesis is accepted.

H0: - There is no significant association between Years of experience and awareness factors of AI-Fintech tools of trading by brokers.

Table 7 Chi Square of Years of experience and Awareness Factors

Factor	Pearson Chi-Square	Df	(p-value)	Result
Knowledge acquisition	9.414	16	.895	Not significant. H0 is fail to reject.
Perceived ease of use	9.917	16	.871	Not significant. H0 is fail to reject.
Digital Learning Sources	6.922	16	.975	Not significant. H0 is fail to reject.

Interpretation: - Above table no.7 is indicated that the Chi-square test was conducted to examine the association between years of experience and awareness of AI-Fintech tools for trading by brokers. The results indicate that knowledge acquisition (p = 0.895), perceived ease of use (p = 0.871), and digital learning sources (p = 0.975) all have p-values greater than 0.05. Therefore, no significant association exists between years of experience and any of the awareness factors. Hence, the null hypothesis is accepted.

H0: - There is no significant association between type of broker and awareness factors of AI-Fintech tools of trading by brokers.

Table 8 Chi Square of type of broker and Awareness Factors

Factor	Pearson Chi-Square	Df	(p-value)	Result
Knowledge acquisition	5.974	8	.650	Not significant. H0 is fail to reject.
Perceived ease of use	5.013	8	.756	Not significant. H0 is fail to reject.
Digital Learning Sources	6.282	8	.616	Not significant. H0 is fail to reject.

Interpretation: - Above table no.8 is indicated that a Chi-square test was conducted to examine the association between type of brokers and selected awareness of AI-Fintech tools for trading by brokers. The results indicate that knowledge acquisition (p = 0.650), perceived ease of use (p = 0.756), and digital learning sources (p = 0.616) all have p-values greater than 0.05. Therefore, no significant association exists between the type of brokers and any of the awareness factors. Hence, the null hypothesis is accepted.

H0: - There is no significant association between Education Qualification and awareness factors of AI-Fintech tools of trading by brokers.

Table 9 Chi Square of Education Qualification and Awareness Factors

Factor	Pearson Chi-Square	Df	(p-value)	Result
Knowledge acquisition	5.685	8	.682	Not significant. H0 is fail to reject.
Perceived ease of use	6.005	8	.647	Not significant. H0 is fail to reject.
Digital Learning Sources	11.762	8	.162	Not significant. H0 is fail to reject.

Interpretation: - Above table no.9 is indicated that a Chi-square test was conducted to examine the association between type of brokers and selected awareness of AI-Fintech tools for trading by brokers. The results indicate that knowledge acquisition (p = 0.650), perceived ease of use (p = 0.756), and digital learning sources (p = 0.616) all have p-values greater than 0.05. Therefore, no significant association exists between the type of brokers and any of the awareness factors. Hence, the null hypothesis is accepted.

CONCLUSION

The study concludes that AI–FinTech tools are being positively accepted by brokers in the Surat region. These technologies improve professional efficiency and contribute to better financial literacy. Adoption is driven more by technological benefits and performance impact rather than demographic differences. Continuous training and stronger cybersecurity practices can further support effective and sustainable adoption of AI–FinTech innovations.

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“AWARENESS OF AI-FINTECH INNOVATION BY BROKERS WHICH LEADS TO FINANCIAL LITERACY”

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