

EXPLORING THE EFFECT OF MOBILE APP FEATURES AND AI INTEGRATION ON CUSTOMER RETENTION IN THE BANKING SECTOR

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ABSTRACT

Rapid advancements in mobile apps have changed the financial sector. Banks now need to understand what keeps customers coming back in this digital age. This research looks at how mobile app features—especially usability, functionality, and security—affect customer satisfaction, trust, and loyalty. It shows how a single app can combine all essential functions into one for a user-friendly banking experience and improve interaction between customers and their banks. It also explores the growing importance of security features in building trust, as they are key to keeping customers in a more digital banking environment. Using Artificial Intelligence (AI) tools in mobile apps allows for responsive personalization, simpler customer interactions, and better service delivery; all aimed at increasing satisfaction and retention. The findings will provide banks with insights on how to enhance their mobile apps, making them more seamless, secure, and personalized to meet the diverse needs of today's consumers. This research will add to academic discussions on mobile apps and offer practical strategies for financial institutions to strengthen customer relationships in the digital era.

Keywords: Convenience, Security, User Experience, Personalization, Customer Satisfaction.

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INTRODUCTION:

In the last few years, mobile app has become one of the critical components of banking business in changing how financial institutions relate to their customers. With a strong proliferation of smartphones and adoption around digital duties, customers now tend to expect seamless, accessible, and secure banking services anywhere and at any time. Thus, mobile app applications, once considered additional convenience by customers, are now their first portal interface to manage their finances, which has turned banks to consider boosting the usability as well as functionality of these platforms.

Contrary to competitive landscape, banking competition is intense and therefore customer retention has become a point of focus for banks. Therefore, one must understand the determinants of customer satisfaction, loyalty, and trust in using mobile app services. The features these mobile app applications

offer - ease of use, speed, or simply the number of transactions one can perform- largely influence customer behaviour regarding these applications. Also, with growing concerns regarding cybersecurity, security in mobile app applications becomes the bedrock for customer trust and retention.

Integration Artificial Intelligence (AI) into mobile app platforms goes a step ahead in impacting the customer experience with personalized services, predictive analytics, and improved service support. Some of the main AI-driven innovations, like chatbots and fraud detection, present banks with a competitive edge by offering tailored, anticipatory financial advice and further assistance in dealing with customers easily and trustingly.

REVIEWS

N Maha Lakshmi, M Kavitha (2021) [An Empirical Relationship between Customer Satisfaction and Digital Banking](#). *Design Engineering*. Digital banking

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is the use of the internet, mobile phones, and other electronic mediums as a delivery channel for banking services, which includes all traditional services such as balance enquiry, printing statement, fund transfer to other accounts, bills payment and new banking services such as electronic bill presentment and payment (Frust, Lang, & Nolle, 2000) without necessarily visiting a bank (Mukherjee & Nath, 2003). D Mathivadhani, GS Maheswari, M Kavitha (2025) [Evaluating the Influence of AI-Driven Mobile Banking on Customer Satisfaction: A Case Study of Private Banks in Chennai](#). International Conference on Networks and Cryptology (NETCRYPT). Artificial intelligence (AI) has transformed mobile banking services by letting more customized experiences, more efficient transaction behavior, and increased security. This trend especially affects the private banking industry since customers want perfect and quick services. On the other hand, especially in Chennai's urban banking ecosystem, it is currently mostly unknown how much artificial intelligence-based mobile banking affects consumer delight. The poll exposes several important elements influencing client satisfaction including differences in service quality, security issues, poor personalization and other main challenges. To bridge these gaps, the research surveys 450 Chennai private bank consumers who consistently

- To Assess the Effect of Mobile app Features on Customer Satisfaction and Retention.
- To Examine the Influence of Mobile app Security Features on Building Customer Trust and Retention.
- To Evaluate the Impact of AI Integration in Mobile app on Personalization, Customer Engagement, and Retention.

RESEARCH METHODOLOGY

Only 300 customers are included in the samples. This study uses the survey method as its empirical research design. The Chennai District is the only area covered by this study. There are 300 samples in all.

RESEARCH DESIGN



PATH DIAGRAM

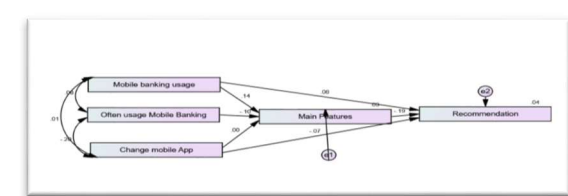


TABLE 1

The Recommended value and Actual value are explained in this table. Each Chi square, RMSEA, GF, AGFI, TLI, and NFI is only as good as its value. Thus, the model fit.

Relationship between Exogenous and Endogenous
TABLE 2

Fit	Model	Recommended Value	Value
Chi-square		P>0.05	0.223
Root Mean Square for Approximation (RMSEA)		≤ 0.08	0.000
Goodness of Fit		≥0.090	1.000
Adjusted Goodness of Fit (AGFI)		≥0.090	0.996
Comparative Fit Index		≥0.090	1.000
Tucker-Lewis Index (TLI)		≥0.090	1.303
Normed Fit Index (NFI)		≥0.090	0.944
Incremental Index		≥0.090	2.82

mobile banking apps enabled with artificial intelligence, therefore filling these gaps using a quantitative approach. The research evaluates aspects including service quality ...

OBJECTIVES OF THE STUDY:

REGRESSION WEIGHTS:

Variables		Estimate	S.E.	C.R.	P	Label
Main Features	<--- ----- -----	Mobile app usage 0.284	0.119	2.394	0.017	Accepted
Main Features	<--- ----- -----	Often use mobile app -0.197	0.115	-1.707	0.088	Accepted
Main Features	<--- ----- -----	Change mobile App 0.005	0.0098	0.047	0.962	Accepted
Recommendations	<--- ----- -----	Main Features 0.000	0.019	-3.301	0.000	Rejected
Recommendations	<--- ----- -----	Mobile app usage 0.058	0.040	1.464	0.143	Accepted
Recommendations	<--- ----- -----	Change mobile App -0.038	0.032	-1.194	0.233	Accepted

➤ **Main Features → Mobile app Usage:** (0.017) This is statistically significant, which indicates that Main Features positively impact Mobile app Usage.

- **Main Features → Often Usage Mobile app:** (0.088) The p-value is more than 0.05; however, the path is accepted based on the label, which shows practical importance. Main features is related to often used mobile APP
- **Main Features → Change Mobile App:** (0.962) statistically significant, and accepted, Main features is reason Change Mobile APP
- **Recommendations → Mobile app Usage and Recommendations → Change Mobile App:(0.000)** Both paths are not statistically significant but are accepted for theoretical or model reasons.
- **Rejected Relationship: Recommendations → Main Features:** (0.233) The relationship is rejected because the estimate is effectively zero, meaning no effect was found.

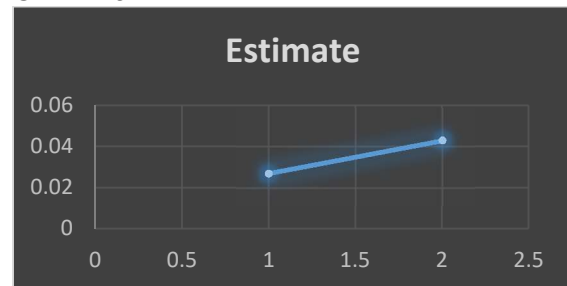
This analysis indicates that the effects of Main Features are statistically significant and positively associated with Mobile app Usage. The remaining paths are not statistically significant or have small effects, so there might be some factors left out of consideration that need to be added for stronger predictive relations.

SQUARED MULTIPLE CORRELATIONS:

TABLE 3

Variables	Estimate
Main Feature	0.027
Recommendations for Mobile App	0.043

CHART 3



The regression analysis shows that for any one-unit increase in "Recommendations for Mobile App", the dependent variable (for example, user behaviour or satisfaction with the app) is expected to increase with 0.027 units. This implies a positive relationship, where as much as the recommendations for the mobile app improve, so does the outcome variable. An Estimate of 0.027 implies an effect size is small and would mean that though recommendations can have an impact on the outcome, this is likely to be a small effect. Here, "Recommendations for Mobile App" would be assumed as a predictor in a regression model and the

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outcome being continuous variable representing performance of app or behavior of user. With additional context, such as the p-value or confidence interval, you can further interpret the statistical significance and reliability of this estimate.

REGRESSION:

TABLE 4

Model Summary ^b						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson	
1	.197 ^a	.039	.036	1.05091	1.469	
a. Predictors: (Constant), Change mobile App						
b. Dependent Variable: Often usage Mobile app						
ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	13.321	1	13.321	12.062	.001 ^b
	Residual	329.116	298	1.104		
	Total	342.437	299			
a. Dependent Variable: Often usage Mobile app						
b. Predictors: (Constant), Change mobile App						

The F-statistic is at 12.062 and has a p-value of 0.001, which is below the traditional threshold of 0.05. It means that, taken as a whole, the regression model is statistically significant, meaning that Change mobile App significantly predicts Often usage Mobile app.

- **Sum of Squares:** The majority of the total variation, 329.116, is unexplained by the model, and only 13.321 is explained by the predictor variable.
- The model is statistically significant, but the R² value from the earlier model summary is only 0.039, which means that the predictor explains only a small fraction of the variance in the dependent variable, at 3.9%.
- ANOVA results confirm that Change mobile App is highly significant in predicting Often usage Mobile app (p = 0.001). Nevertheless, the low R² indicates that the model can hardly explain the variance in this model, and most likely, there are more contributing factors to mobile app usage that are not incorporated into this model.

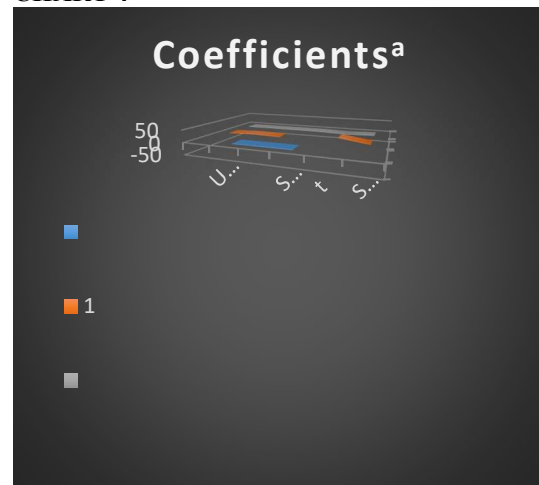
TABLE 5

Coefficients ^a	
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Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	2.951	.176		16.758	.000
Change mobile App	-.167	.048	-.197	-3.473	.001

a. Dependent Variable: Often usage Mobile app

CHART 4



- The regression model indicates that "Change mobile App" has a negative influence on "Often usage Mobile app". That is, for each one unit increase in "Change mobile App," "Often usage Mobile app" reduces by 0.167 units.
- Both the intercept and "Change mobile App" coefficient are statistically significant (p = 0.000 and p = 0.001, respectively, so the model is applicable).
- The negative relationship suggests that the change in the app might be associated with a decrease in the use of mobile app, but the effect is moderate given the Beta value.
- The intercept or constant is 2.951. This implies that if the mobile app is not changed, then the frequency of using mobile app is 2.951 units.
- The slope coefficient for "Change mobile App" is -0.167, meaning that with the change in "Change mobile App," "Often usage Mobile app" is decreases by 0.167 unit(s). This depicts the negative relationship between change within the mobile app and using the mobile app frequently

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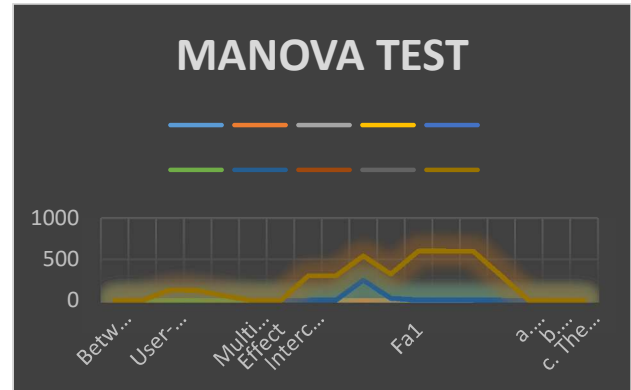
- The standardized coefficient or in this case, the beta "Beta = -0.197," will give a moderate negative direction implying that as changes for the mobile app take place, usage for the mobile app declines slightly.
- Both the intercept and the "Change mobile App" predictor are statistically significant with $p < 0.05$, thus proving that the model is valid and the predictor has an effect on mobile app usage.

MANOVA TEST

TABLE 6

Between-Subjects Factors						
		Value	Label	N		
User-friendly app	1.00	Yes		129		
	2.00	No		120		
	3.00	May be		51		
Multivariate Tests ^a						
Effect		Value	F	Hypothesis df	Error df	Sig.
Intercept	Pillai's Trace	0.961	1442.784 ^b	5.000	293.000	0.000
	Wilks' Lambda	0.039	1442.784 ^b	5.000	293.000	0.000
	Hotelling's Trace	240.621	1442.784 ^b	5.000	293.000	0.000
	Roy's Largest Root	24.621	1442.784 ^b	5.000	293.000	0.000
Factor 1	Pillai's Trace	0.025	0.743	10.000	588.000	0.684
User-friendly app	Wilks' Lambda	0.975	.0742 ^b	10.000	586.000	0.685
	Hotelling's Trace	0.025	0.742	10.000	584.000	0.685
	Roy's Largest Root	0.021	1.227 ^c	5.000	294.000	0.296
a. Design: Intercept + Fa1						
b. Exact statistic						
c. The statistic is an upper bound on F that yields a lower bound on the significance level.						

CHART 5



The MANOVA analysis was carried out to examine the effect of the "User-friendly app" factor, which has levels of Yes, No, and May be on the dependent variables.

Intercept Effects: The intercepts were highly significant, with p-values less than 0.001 for all test statistics (Pillai's Trace, Wilks' Lambda, Hotelling's Trace, and Roy's Largest Root). This implies that the overall model is significant, meaning that differences across the groups (Yes, No, May be) on the "User-friendly app" factor are meaningful in explaining the variance in the dependent variables.

Factor 1: The multivariate tests for Factor1 were nonsignificant. The p-values ranging from 0.296 up to 0.685, all of them greater than the conventional threshold at 0.05, indicates a no significance of dependent variables with regard to their influence by Factor1. Such an outcome, therefore suggests that this factor is not affecting the results being analysed in the study.

The User-friendly app factor is very significant in explaining the variance in the dependent variables, but Factor1 is not significant in this particular analysis. You may also suggest practical implications or avenues for further research, if necessary.

FATOR ANALYSIS

TABLE 7

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.506
Bartlett's Test of Sphericity	Approx. Chi-Square	78.929
	df	36
	Sig.	0.000

The Kaiser-Meyer-Olkin measure is an index that determines the adequacy of sampling. The KMO test result, which is 0.506, is regarded as extremely good, valid, and appropriate for using in the reduction process. The sphericity of the Bartlett's test aids in the decision-making process by allowing the researcher to determine whether further study of the research

activity is warranted based on the factor analysis results. The results of the Bartlett's test of sphericity significant level of significance, which is less than 0.001, indicate a strong degree of correlation between the variables, making factor analysis appropriate.

TABLE 8

Communalities		
Variables	Initial	Extraction
Very likely	1.000	0.575
Likely	1.000	0.398
Neutral	1.000	0.492
Unlikely	1.000	0.554
Very Unlikely	1.000	0.536
Yes, they are a key factor	1.000	0.526
Yes, but not the only factor	1.000	0.698
No, other factors are more important	1.000	0.479
No, mobile app has no impact on my loyalty	1.000	0.638
Extraction Method: Principal Component Analysis.		

CONCLUSION:

In conclusion, the analysis points out that mobile app features have a significant impact on customer usage. Core features are positively related to the adoption of mobile app. Although there is a relationship between the frequency of mobile app usage and these features, changes to the mobile app could lead to a slight reduction in usage, indicating that frequent app updates should be approached with caution. Whereas its impact on a user behaviour is still tiny, even then, recommendations alone can lead to an improved usage as well as the loyalty aspect of mobile app. Further, as evidenced through the low level of explained variables, there remains scope of influencing aspects to increase the variance which were unaccounted for at this current moment in study. Additionally, analysis has indicated that if an individual holds the app user-friendly as easy to use with, mobile app may influence such a type of loyalty; hence, on its whole, it calls the focus towards enhancing mobile app by simplifying the features without changing too many of these mobile updates while still looking for whatever new advice customers would need in preserving such loyalty. Further research should be conducted into other drivers that might influence mobile app behaviour to eventually improve understanding.

Analysis emphasizes that mobile app features are key drivers of customer usage. The more frequently updates on app features, the higher will be the engagement levels. Even if the app changes quite often, it can cause minor loss in usage but a cautious

update will ensure the users stick around. Whereas recommendations have a small, yet positive impact, other factors seem to influence loyalty and usage in mobile app much more significantly. An important issue emerging from the study is the influence of the usability of mobile applications, for customer loyalty varies greatly as they differ in how much a person perceives the mobile bank in contributing towards customer loyalty. However, an R² value so low for the model indicates that unexplored factors may be more influential on determining customer behaviour than those considered in this study. Future studies should look to investigate other drivers of mobile app usage, such as demographic factors, technological advancement, or influence from competitive apps. Such studies would help a banking institution understand the long-term impact of features and updates of an app, as well as the effect of a personalized experience on customer loyalty in a fast-changing digital landscape.

The contribution of developed artificial intelligence features and their incorporation in mobile app is of positive impact on customer satisfaction and experiences. Admittedly, the AI features orient customers, but overall experience with AI integration will have to be tailor-made to improve user engagement and satisfaction. Improvement in AI-based functionalities should be complemented with seamless, personalized experiences to enhance customer loyalty and retention in a competitive digital banking environment.

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