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ROLE OF SECURITY IN ONLINE BANKING SERVICES AND ITS INFLUENCE ON CUSTOMER SATISFACTION

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ABSTRACT

Digital banking has rapidly expanded, which has transformed how customers interact with financial institutions, thus making security essential for achieving customer satisfaction. The research investigates how security measures impact online banking services at HDFC Bank and their effect on customer satisfaction. The study examines five security dimensions, which include data privacy, secure authentication methods, encryption security, fraud detection systems, and transaction protection systems. The researchers used a quantitative research method, which gathered primary data from HDFC Bank customers who utilized its online banking system. The study uses statistical tools, which include percentage analysis, correlation, and regression, to measure how perceived security affects customer satisfaction. Security measures function as essential elements for building customer trust, which decreases perceived risk and increases customer satisfaction with online banking services. Customers who perceive higher levels of security are more confident in conducting digital transactions and demonstrate stronger loyalty toward the bank. The study concludes that organizations must continuously enhance their cybersecurity defenses while providing clear security policy details and educating customers about security procedures to sustain their high customer satisfaction and competitive edge in digital banking.



KEYWORDS: Online Banking, Security, Customer Satisfaction, HDFC Bank, Data Privacy, Digital Banking.

INTRODUCTION:

The banking industry has transformed because information and communication technology continues to develop rapidly, which has resulted in people using online banking services. Customers today prefer digital platforms for performing financial transactions such as fund transfers and bill payments, account monitoring, and investment management because these platforms allow them to complete tasks faster, and they can access them anytime. HDFC Bank, which stands as one of India's top private banks, has devoted substantial funding toward its digital banking infrastructure development effort, which aims to improve customer service delivery and boost operational performance. The bank provides customers with internet banking and mobile banking applications, which permit them to access financial services at any time during the day.

Online banking provides many advantages to users, yet security issues remain the most significant obstacle for digital banking services. Customers have developed safety concerns about their financial information because of data breaches, identity theft, phishing attacks, malware, and online fraud. Security functions have become the essential factor that determines how satisfied customers feel about the service they receive. Customers who see online banking services as safe and dependable will choose to use them and keep using them. Security features such as two-factor authentication, encryption technology, secure login credentials, biometric verification, and real-time transaction alerts play a vital role in building trust and confidence among users.

Online banking customer satisfaction depends on how safe and trustworthy customers find the banking platform. Customer satisfaction with the service increases when customers believe that their personal and financial data receive adequate protection. Security breaches will lead to a decline in trust, which will damage the bank's reputation. Banks must study how security measures affect customer satisfaction because this knowledge will help the bank design stronger security frameworks, enhance customer trust, improve service quality, and maintain long-term customer loyalty.

OBJECTIVES OF THE STUDY:

- 1) To examine the security features provided by HDFC Bank in its online banking services.
- 2) To analyze customers' perception of security in HDFC Bank's online banking platform.
- 3) To evaluate the impact of security on customer satisfaction.
- 4) To suggest measures to enhance security and customer satisfaction.

RESEARCH METHODOLOGY:

The study adopts a descriptive research design to examine the role of security in online banking services and its influence on customer satisfaction in HDFC Bank. Primary data is collected through structured questionnaires from 220 online banking users using convenience sampling. Secondary data is gathered from journals and bank reports. A five-point Likert scale is used to measure responses. Data is analyzed using percentage, correlation, and regression techniques to test the relationship between security and satisfaction.

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HDFC Bank employs multiple cutting-edge security protocols to protect its internet banking system, which maintains secure customer financial operations and safeguards their confidential information. The system requires users to enter two authentication factors, which include their one-time passwords and their biometric information, which includes fingerprint and facial recognition. The security system uses SSL encryption together with SMS and email transaction alerts, AI-powered fraud detection systems, and mandatory strong password standards. The implemented security measures block unauthorized entry into their system while reducing cyber threats and protecting online transactions, which helps to establish customer confidence in the bank's digital services. Security functions as the main factor that determines customer contentment with online banking services. Security protocols for financial data and transaction protection establish a superior banking experience because customers develop greater trust in the bank while their assessment of danger decreases. Customers display increased online banking service usage and enhanced satisfaction because they experience a feeling of security. Strong security systems establish trust and reliability, which leads businesses to achieve better customer loyalty. The research shows that people who see better security measures on HDFC Bank websites will use their banking services more frequently.

DATA ANALYSIS AND INTERPRETATION:

TABLE 1: Demographic Profile of Respondents (N = 220)

Variable	Category	Frequency	Percentage (%)
Gender	Male	128	58.2%
	Female	92	41.8%
Age Group	18-25	48	21.8%
	26-35	86	39.1%
	36-45	52	23.6%
	Above 45	34	15.5%
Education	Graduate	94	42.7%
	Postgraduate	78	35.5%
	Professional	32	14.5%
	Others	16	7.3%
Experience with Online Banking	< 1 year	36	16.4%
	1-3 years	98	44.5%
	3-5 years	54	24.5%
	Above 5 years	32	14.6%

TABLE 2: Security Dimensions in Online Banking (Likert Scale Responses)

Security Factor	Mean Score	Std. Deviation
Data Privacy Protection	4.21	0.76
Secure Login Authentication	4.34	0.68
OTP & Two-Factor Authentication	4.40	0.64
Encryption of Transactions	4.18	0.72
Fraud Detection Mechanism	4.05	0.81
Secure Mobile App Interface	4.27	0.70

TABLE 3: Customer Satisfaction Variables

Satisfaction Statement	Mean Score	Std. Deviation
I feel safe while using HDFC online banking	4.32	0.66
Online transactions are reliable	4.25	0.71
I trust HDFC's online security system	4.29	0.69
Overall satisfaction with online banking	4.36	0.62
I would recommend HDFC online banking to others	4.31	0.65

TABLE 4: Percentage Analysis of Overall Security Perception

Response	Frequency	Percentage (%)
Strongly Disagree	6	2.7%
Disagree	14	6.4%
Neutral	28	12.7%
Agree	102	46.4%
Strongly Agree	70	31.8%
Total	220	100%

TABLE 5: Correlation Analysis

Variables	Security	Customer Satisfaction
Security	1	0.782**
Customer Satisfaction	0.782**	1

Correlation is significant at the 0.01 level.

There is a strong positive relationship between security and customer satisfaction.

TABLE 6: Regression Analysis

Dependent Variable: Customer Satisfaction

Independent Variable: Security

Model Summary	Value
R	0.782
R ²	0.611
Adjusted R ²	0.607
F-value	342.15
Significance	0.000

Regression Coefficients

Variable	Beta	t-value	Significance
Constant	0.842	4.32	0.000
Security	0.768	18.49	0.000

FINDINGS OF THE STUDY:

The demographic profile of the respondents is demonstrated in Table 1. Among the 220 interviewees, 58.2% purportedly belong to males and 41.8% are females; here, the male group dominates the research to some extent. Again, most of the respondents, 39.1%, fall in the category of between 26 and 35 years, followed by individuals in the category of 36-45 years, who account for 23.6%, and those who were 18-25 years old, who were 21.8%. Those above 45 years old composed just 15.5% of the surveyees' proportion. Hence, young adults and middle-aged people are the most prevalent users of the online banking service. They were also sorted based on their highest qualification, which indicated that most of them had at least studied up to and are thus graduates (42.7%), followed by postgraduates (35.5%), professionals (14.5%), and others (7.3%). The rate of usage of online banking increases in a direct proportional relationship to the increased level of education. As for the length of exposure in online banking, 44.5% have 1-3 years of exposure, 24.5% have 3-5 years of exposure, 16.4% have less than a year of exposure, and 14.6% have over 5 years of exposure. This shows that the highest groupings are in the middle range, thus making them quite adept at assessing both the security and satisfaction aspects. In Table 2, the items typical of various security dimensions emerged statistically for different representative cases, both statistically distributed by the means and standard deviations. Accordingly, all of them with a mean score of above 4.0 imply that the agreement among respondents was at high levels for all security instruments. Moreover, OTP and two-factor authentication (4.40) have the top mean score, followed by secure logins (4.34) and a secure mobile-app interface (4.27). Similar agreement is noted for Data Privacy Protection (4.21) and Encryption Transactions (4.18). The mean score for the data registered in relation to the Fraud Detection System is quite low (4.05), but it still helps it cross over the threshold between agreement and disagreement.

The standard deviation varies between 0.64 and 0.81, showing that there is moderate consistency while answering the questions. The findings of the research are acting as a determination that HDFC Bank is experiencing strong and durable online security, with the majority of acknowledgment for the authentication parts.

Table 3 shows data on standard deviations and means for customer satisfaction variables and items that were rated the highest, while the mean score of the highest-rated statements was more than 4.00. The highest mean score was observed for the overall satisfaction over online banking, which equals 4.36; the security in online transactions at 4.32; and the willingness to recommend the service at 4.31. Trust of customers towards HDFC with regard to the online security of its systems has a mean of 4.29, while reliability in executing online transactions garnered 4.25.

Low dispersion values between 0.62 and 0.71 indicate response consistency. These results imply to the clients and users that HDFC Bank has provided an online banking service that meets their needs by providing a secure transaction experience as well as reliability.

Table 4 shows the results of their total understanding of the security aspect, with the largest majority, 46.4% of respondents, agreeing and 31.8% strongly agreeing that HDFC Bank has a secure online banking facility. The rest, 6.4%, disagree, and only 2.7% highly disagree with these facility conditions, while 12.7% are in a middle class of some change in opinion.

With 78.2% of all respondents speaking positively of online banking security, a majority tend to favor it. The minor number of disagreeing customers means, rather generally, that they believe in security measures in banking and hence want to transact more online confidently. Table 5 shows the security-customer satisfaction relationship. A correlation coefficient of 0.782 means that there exists a solid, positive relationship between security and customer satisfaction. This relationship holds significance at a 0.01 level.

This suggests that when the customer's perception of security towards conducting transactions increases, the percentage of satisfaction increases, as indicated by a very high positive coefficient. It is, therefore, noted from the findings that security strongly affects customer satisfaction in online banking services.

Table 6 gives the information in the regression analysis conducted in order to appraise the security's influence over service satisfaction by customers. In the model summary, the R value stands at 0.0782, an attestation to a strong relationship between the variables. The R^2 value of 0.611 indicates that as much as 61.1% of the variation in customer satisfaction is accounted for by security variables. The F value is calculated as 342.15, with a probability value of 0.000, which confirms the model is statistically significant when tested. In addition, the high value of the regression coefficient (Beta = 0.768) suggests the presence of a significant association between security and customer satisfaction. On the other hand, a t-value of 18.49 with a 0.000 signal is supportive of the meaningfulness and statistical significance of this relationship. This indicates that security has an enormous influence on the satisfaction of the customers in online banking services by HDFC Bank.

DISCUSSION:

The present study examined how security measures influence HDFC Bank's online banking services, which in turn affect customer contentment. The research results demonstrate that security functions as a primary factor that determines customer satisfaction. The demographic profile shows that most respondents belong to the age group of 26 to 35 years while holding university degrees. Their knowledge of digital platforms, together with their online banking experience of one to three years, enables them to assess security features and service quality.

The assessment of security elements shows that customers view the banking institution's security systems with high value. The highest ratings were given to OTP and two-factor authentication, which received better ratings than secure login systems, data privacy protection, and mobile app security. The study results show that customers consider HDFC's online banking system as both secure and reliable, despite the slightly decreased ratings for fraud detection systems.

The study results showed that customers experienced high satisfaction with their safety and reliability, and their overall satisfaction. The study discovered that security measures create a strong positive link, which produces significant proof that security establishes customer satisfaction at the bank. The study results show that effective security systems create trust, which leads to customer satisfaction and customer retention.

CONCLUSION:

The research study named "Role of Security in Online Banking Services and Its Influence on Customer Satisfaction in HDFC Bank" investigates how online banking security systems affect customer satisfaction. The analysis of primary data, which researchers collected from 220 online banking users, shows that security elements create a substantial positive effect on customer satisfaction. The results show that HDFC Bank customers consider security systems, which include OTP and two-factor

authentication, secure login mechanisms, data privacy safeguards, and encrypted transactions, as essential parts of their banking experience. The majority of respondents showed strong agreement about the safety and reliability of the bank's online banking platform. Customers who perceive security positively experience increased satisfaction with the service. The conclusion receives additional support through statistical analysis. The correlation results show that security and customer satisfaction have a strong positive relationship. Security accounts for 61.1 percent, which shows that it is the main factor driving customer experiences and perceptions of satisfaction. The significance values indicate that the relationship is statistically meaningful and not due to chance. The current digital banking system has customers who increasingly worry about data protection, fraud protection, and transaction security. The study shows that security systems that work effectively keep customers safe from financial dangers while building their trust in the banking system. Customers who experience security during their banking activities demonstrate higher levels of satisfaction and loyalty, which leads them to share their positive experiences with others. The thesis demonstrates that security functions as a vital operational element that determines online banking service delivery to customers. HDFC Bank maintains a secure system infrastructure, which it has.

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