Enhancing Customer Satisfaction Through Automation in the Banking Sector: A Comprehensive Analysis

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ABSTRACT

Automated banking is one of the key services used by banks to facilitate the delivery of services that meet consumer expectations, thus boosting the country's economy. Major technological advancements have been witnessed in the banking industry due to the introduction of international standards in the operational norms of banking geared towards the betterment of client service quality. The aim of this research was to assess the effects of automation of banking services on customer satisfaction for different private banks in Delhi.

The study adopted a case study research design. Data was collected using questionnaires. The total reliability of the questionnaire, measured using a Cronbach's alpha coefficient, was 0.897. The sample size was 100 respondents. Data were analyzed using descriptive and inferential statistics using Statistical Package of Social Sciences (SPSS) software, version 20.0. Findings were presented in the form of tabulations (percentages, mean and standard deviation).

From the findings, the automation of banking services such as mobile banking usage, internet banking usage, and automated teller machine usage was found to have a significant effect on customer satisfaction.

The keywords listed in the paper are:

- **Mobile banking**
- **Internet banking**
- **Automated teller machine**
- **Customer satisfaction**

INTRODUCTION

Background Factors Necessitating the Project

Technology has profoundly transformed service industries, and the banking sector is no exception. The adoption of information and communication technology (ICT) in banking has redefined customer service delivery and has become essential for both local and global competitiveness. Technological advancements such as mobile banking, internet banking, and ATMs have enabled banks to reduce costs, enhance operational efficiency, and improve customer experience.

The conversion from manual ledger systems to systemized, internet-based services reflects this technological shift. With increasing competition and shrinking profit margins, banks are compelled to adopt automation to retain customers and sustain operations. Automation is now viewed as a critical channel for delivering all types of banking services efficiently.

Further Explanation of the Research Topic

Customer satisfaction is a central measure of business performance and service quality, especially in a competitive sector like banking. The study explores how the automation of banking services influences customer satisfaction. The quality of service delivered through electronic platforms (e.g., ATMs, mobile apps, and internet portals) is now a determining factor in customer retention and loyalty.

Automated service quality is assessed based on customer evaluations of services provided through electronic channels, with a focus on usability, efficiency, and security. These services include mobile banking, internet banking, and ATMs—all integral parts of modern banking in India and elsewhere.

Literature Reviews

Customers are the biggest influencers in the operation of an organization. It is therefore imperative to measure how services offered by a company meet or exceed customer expectations, as these measurements are fundamental performance indicators in business.

In environments where there is great competition for customers, the call for customer satisfaction is viewed as the main differentiator and is, therefore, a major strategy employed by businesses. This strategy has been a subject of great interest to organizations that want to be market leaders in the field and researchers alike (Barnes, 2013).

Spielman et al. (2008) explains that a measurement of customer fulfillment gives a clear indication of how a successful organization can provide quality products and/or services to the public. The customer assesses statements in relation to their need, perception, and expectation of the performance of the service which is being measured. It is a general belief that a business that offers high-quality service is one who meets its customer's desires while remaining economically stable and competitive in the market.

Customers' perception of service quality is determined by the size and direction of the gap that exists between what the customers expect to be given in service to that of what he or she perceives to have been received from the service purchase (Jakumar, 2005). Customer loyalty is a factor in gaining customers for a business (Utami & Chaldun, 2019). In modern economies, the service sector plays a significant role in manufacturing and other sectors. Personnel in service industries are concerned about client satisfaction and the quality of their services. This calls for delivering services efficiently and in a way that meets the expectations of their clientele.

Banking services include mobile banking, SME banking, internet banking, credit card, Short Message Service (SMS) banking, foreign currency account, ATM services, locker service, and loans and advances. In addition, corporate clients are also offered corporate banking, loan syndication, and real-time online banking. Service charges, quality of service, perceived value, and customer satisfaction are the main factors which can determine success in any service factory (Akram, 2012).

Lien and Yu-Ching (2006) lamented that perceived price fairness influences the echelon of intangible services which has a direct one-on-one impact on customer fulfillment in the case of banks. Satisfaction of customer is the authentic expression of the status of contentment that differs from personal to person and product/service to product/service and is an evaluation of how services of an institution meet customer expectations or surpass customer expectancy.

A customer's biggest concern is always cost. Determining prices and service charges requires the consideration and evaluation of the customer's perception of value and should not be generalized along with other factors. Customer satisfaction is subject to price and service charge awareness (Kuo et al., 2009).

A customer's psychological assessment of the utility of a product or service compared with the expectation of the utility of a product or service is known as perceived value. Online feedback can be a factor in improving product quality (Mustikarini, et al., 2021). Marketing researchers and managers have paid much attention to value perceptions with the aim of generating details on customer satisfaction and allegiance. To ascertain the value perception of customers, Lee et al. (2007) suggest considering their perceived benefits relative to sacrifice. Except for monetary sacrifice, perceived value assessment consists of the social and psychological perspective of non-monetary costs such as search cost, negotiation cost, and consumption of time. The consumption of any product or service gives a customer benefits and expectations based on their sacrifice of resources. According to Chen and Chen (2010), experience in service quality is positively and significantly persuaded by perceived value.

A review of relevant literature revealed that research in bank automation has been conducted, but not comprehensively. Previous research identified a gap between management's perception of customer expectations and service quality. That is, management was not willing or able to put in place systems or finances that would match or exceed customer expectations.

The survey of relevant literature also revealed differences between service quality specifications and service delivery due to service personnel being poorly trained, incapable, or unwilling to meet the set service standard. The intent of this study, therefore, was to fill these gaps in the literature by studying the effects of automation on key customer satisfaction indicators at different private banks in Delhi .

Research Questions and Hypotheses

While the paper does not list explicit hypotheses, the research implicitly investigates the following questions:

1.   What is the effect of mobile banking usage on customer satisfaction?
2.   What is the effect of internet banking usage on customer satisfaction?
3.   What is the effect of ATM usage on customer satisfaction?

Each question likely corresponds to a hypothesis stating that there is a significant positive effect of each service type on customer satisfaction.

Research Objectives

The main objective of the study is to:

- Assess the effects of automation of banking services on customer satisfaction in private banks in Delhi, India .

Supporting objectives include:

- To evaluate the influence of mobile banking on customer satisfaction.
- To determine the effect of internet banking on customer satisfaction.
- To examine how ATM usage contributes to or affects customer satisfaction.
- To identify areas where automation can be improved to further enhance customer satisfaction.

RESEARCH DESIGN AND METHODOLOGY

Type(s) of Research Design Used and Justification

The study employed a descriptive quantitative research design in the form of a survey-based case study. This design was chosen to objectively measure and describe the relationship between banking service automation (mobile banking, internet banking, and ATM usage) and customer satisfaction.

A descriptive design is appropriate for:

- Capturing the current opinions and perceptions of customers.
- Identifying patterns and correlations between automated service usage and customer satisfaction.
- Providing a structured and statistically analyzable framework for evaluating service features.

The quantitative nature of the study ensures that conclusions are drawn based on numerical data, enhancing objectivity and replicability.

Data Collection Methods and Forms

Data was collected using a structured, close-ended questionnaire. The instrument was specifically designed to capture:

- Demographic data (e.g., age, gender, education, banking experience).
- Customer perceptions of mobile banking, internet banking, and ATM services.
- Customer satisfaction indicators.

Key characteristics of the questionnaire:

- Divided into two main sections: demographic details and thesis-related variables.
- Comprised 20 items in total—5 items each for mobile banking, internet banking, ATM usage, and customer satisfaction.
- Respondents provided feedback on a **5**-point Likert scale ranging from "strongly disagree" (1) to "strongly agree" (5).
- The questionnaire was administered in English and delivered in printed form to each participant.

Reliability was tested using Cronbach's Alpha, which yielded an overall score of 0.897, indicating excellent internal consistency of the items.

Sampling Design and Plan

The researchers used a purposive sampling technique to select participants. This non-probability sampling approach was appropriate given the study's goal of targeting individuals with experience in using automated banking services.

Sample details:

- **Sample Size**: 100 respondents.
- The sample size was guided by Malhotra & Dash's (2013–2014) recommendation of having a minimum of 4 to 5 times as many responses as there are variables.
- **Banks Selected**: 10 banks in Delhi.
  - Distribution included: SBI (10), AXIS Bank (10), HDFC Bank (10), KOTAK (10), INDUSIND Bank (15), PNB (5), ICICI Bank (13), PUNJAB SINDH Bank (7), BOI (10), and Bank Of Baroda (10).

Each respondent had access to at least one form of automated banking and thus was qualified to provide relevant feedback.

Fieldwork

The fieldwork involved the direct distribution and collection of printed questionnaires. Key activities included:

- Engaging bank customers at selected branches across Delhi .
- Ensuring voluntary participation and informed consent.
- Explaining the purpose of the study to enhance respondent understanding and accuracy.
- Collecting data within a defined period to maintain consistency across bank locations.

The face-to-face distribution method allowed researchers to clarify questions and encourage completion, contributing to a high response rate and data quality.

Data Analysis and Interpretation

Reliability of Questionnaire

To determine the reliability of the questionnaire, the researchers used a reliability tool. The practice of determining reliability and validity is common, particularly in quantitative research. Reliability measures the degree of consistency among multiple variables by assessing internal consistency or homogeneity of the items. When Cronbach's alpha is less than 0.60, the variable shows poor reliability. In this case, the Cronbach Alpha values were all above 0.60, indicating good reliability for all variables used in the study.

Table 1: Reliability Analysis Results

Variables	Number of Items	Cronbach Alpha
Mobile Banking	5	0.888
Internet Banking	5	0.837
Automated Teller Machine	5	0.861

Variables	Number of Items	Cronbach Alpha
Customer Satisfaction	5	0.869
Overall	**20**	**0.897**

The overall Cronbach Alpha value was 0.897, which indicates excellent reliability. This suggests that the research instrument used to measure mobile banking, internet banking, ATM usage, and customer satisfaction is statistically sound.

Demographic Analysis

Respondents were asked to provide information on gender, age, level of education, and years of banking experience. These characteristics were considered relevant in evaluating the effects of automated banking services on customer satisfaction, as they might influence user perceptions and experiences.

Table 2: Demographic Profile of the Respondents

Demographic Features	Frequency	Percentage
Gender		
Male	64	64%
Female	36	36%
Age Group		
18–25	11	11%
26–35	38	38%
36–45	32	32%
46–55	19	19%
Education		
Primary	11	11%
Secondary	16	16%
College	22	22%
University	51	51%
Years of Banking		
1–5 years	38	38%
6–10 years	24	24%

Demographic Features	Frequency	Percentage
11–15 years	21	21%
15–20 years	17	17%

The results show that both male and female customers use automated services, with males representing a higher proportion (64%). Most users are between the ages of 26 and 45, and over half have a university education. A large number of respondents have more than five years of banking experience.

Mobile Banking Usage

The study assessed mobile banking using five statements in the questionnaire. Most respondents agreed that mobile banking helps minimize costs and errors. The ease of use, ability to access multiple accounts, and time savings were also widely acknowledged by users.

Table 3: Mobile Banking Usage

Variables	Mean	Std. Deviation
Helps to minimize costs and errors	4.00	0.651
Helps access unlimited number of accounts	3.97	0.658
Easy to use	3.94	0.617
Enhances money security	3.85	0.626
Saves a lot of time	3.88	0.640

These results indicate that a majority of the customers are comfortable with mobile banking and recognize its efficiency in facilitating banking transactions.

Internet Banking Usage

Internet banking was evaluated using five parameters. The responses revealed a general agreement on its effectiveness in managing cash flow, transaction security, up-to-date information, simplified foreign transactions, and speed of transactions.

Table 4: Internet Banking Usage

Variables	Mean	Std. Deviation
Manages cash flow effectively	3.77	0.694
Provides strong security for transactions	3.83	0.682

Variables	Mean	Std. Deviation
Information is up-to-date	3.79	0.795
Simplifies foreign currency transactions	3.82	0.730
Transaction process is fast	3.75	0.702

The data supports the view that customers find internet banking convenient and secure, and are satisfied with the services offered.

Automated Teller Machine (ATM) Usage

ATM usage was examined through questions that assessed its facilities for deposits, withdrawals, bill payments, usability, and availability of cash. Respondents expressed generally favorable opinions, although availability of cash in ATMs received slightly lower scores.

Table 5: ATM Usage

Variables	Mean	Std. Deviation
Cash deposit facility is optimistic	3.71	0.671
Cash withdrawal facility is optimistic	3.74	0.733
Helps to pay utility bills	3.75	0.672
Easy to use	3.67	0.697
Cash is always available	3.63	0.706

While most respondents found ATMs useful, the relatively lower mean for cash availability suggests a need for banks to ensure better cash management at ATM locations.

Customer Satisfaction

Customer satisfaction was measured based on how well customers could interact with the system, its efficiency, and ease of use. The findings reflect strong overall satisfaction with automated banking systems.

Table 6: Customer Satisfaction

Variables	Mean	Std. Deviation
Conducting transactions efficiently	3.73	0.750
Interaction is clear and understandable	3.78	0.690
Easy to get the system to do what is wanted	3.81	0.615

Variables	Mean	Std. Deviation
System is easy to use	3.84	0.564
Saves time at work	3.82	0.626

These results suggest that customers perceive automated banking as beneficial, primarily due to clarity of operations, efficiency, and time-saving features.

The data collected was analyzed using IBM SPSS version 20.0. The analysis process included:

1. **Descriptive Statistics**:
   o Used to summarize demographic variables and responses to Likert-scale questions.
   o Mean and standard deviation were calculated for each of the 20 items.
2. **Reliability Testing**:
   o Conducted using Cronbach's Alpha to assess internal consistency across variable groups.
   o All individual scales (mobile banking, internet banking, ATM usage, and customer satisfaction) scored above 0.83, indicating high reliability.
3. **Interpretation**:
   o The study examined the central tendency (mean scores) for each variable.
   o Higher mean scores indicated stronger agreement with statements about the benefits and ease of use of automated services.
   o The data revealed that mobile banking had the highest impact on customer satisfaction, followed by internet banking, while ATM usage showed relatively lower, but still positive, impact.

The findings helped establish clear insights into how each form of automation contributes to customer satisfaction in the banking sector.

LIMITATIONS

Results in Light of Limitations and Assumptions

Although the study yielded meaningful insights into how automation affects customer satisfaction in private banks in Delhi, certain limitations must be considered when interpreting the results:

- **Geographical Limitation**: The study focused solely on banks within Delhi, limiting the generalizability of the findings to other cities or rural areas in India .
- **Sample Size Constraint**: The sample consisted of only 100 respondents, which may not capture the full diversity of customer experiences and preferences across the broader banking population.
- **Assumptions**: It was assumed that all respondents understood and used automated banking services similarly and could accurately assess their satisfaction. This assumption may not hold true across different education or age groups.

These limitations suggest that while the results are valid for the context studied, caution should be used when applying them to broader populations or different banking environments.

Validity and Reliability Considerations

To ensure robustness in data collection and interpretation, several steps were taken:

- **Instrument Reliability**: The questionnaire used was tested for internal consistency using Cronbach's Alpha, yielding an overall score of **0.897**, which indicates very good reliability.
  - Individual scales (mobile banking, internet banking, ATM usage, and customer satisfaction) all scored above **0.83**.
- **Construct Validity**: Each variable in the study (mobile banking, internet banking, ATM usage) was clearly defined and supported by existing literature.
- **Content Validity**: Questions were developed based on widely accepted theoretical and practical aspects of customer satisfaction in digital banking.

However, external validity is limited due to the focused geographic scope and sample selection technique (purposive sampling).

Problems Encountered and Strategies to Overcome Them

Several challenges emerged during the research process:

- **Data Collection Barriers**: Some customers were reluctant to complete the questionnaire due to time constraints or lack of interest. To address this:
  - Researchers explained the study purpose and assured confidentiality.
  - Printed forms were distributed personally to enhance engagement.
- **Language and Comprehension Issues**: While the questionnaire was in English, not all respondents were equally proficient. As a mitigation:
  - Researchers offered verbal clarifications when needed.
  - Simple and direct language was used in the survey statements.
- **Limited Sample Diversity**: Although 10 banks were included, the number of participants per bank varied, and some institutions had as few as 5–7 respondents. This may have skewed representation. The study addressed this by proportionally sampling based on customer availability at the time.

Lessons Learned for Higher-Quality Future Research

Reflecting on the limitations and challenges, several important lessons can guide future studies:

1. **Broader Sampling**: Including banks from different cities and rural areas would increase generalizability and capture regional variations in satisfaction and usage.
2. **Mixed-Methods Approach**: Combining quantitative surveys with qualitative interviews would deepen insights and reveal nuanced customer experiences.
3. **Larger Sample Size**: Expanding the sample would allow for more robust statistical analysis (e.g., regression, PLS-SEM) and increase confidence in findings.
4. **Technology-Specific Focus**: Future studies might separately assess new digital banking technologies such as biometric ATMs, AI chatbots, or fintech integrations.
5. **Language Localization**: Offering the questionnaire in hindi or other regional languages may improve response accuracy and comfort.

By addressing these considerations, future research can build on the foundation laid by this study and contribute to a more comprehensive understanding of banking automation and customer satisfaction.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

This study examined the effects of automated banking services on customer satisfaction among private bank clients in Delhi, India. The services investigated included mobile banking, internet banking, and the use of Automated Teller Machines (ATMs). Based on data collected from 100 bank customers through a structured questionnaire and analyzed using descriptive statistical tools, the study arrived at several important conclusions.

First, the findings revealed that mobile banking had the greatest influence on customer satisfaction. Customers responded positively to statements related to cost savings, ease of access, time efficiency, and transactional security. Many users found mobile banking to be highly convenient and effective for managing their accounts, making it a primary contributor to overall satisfaction. The ability to perform a variety of transactions quickly and securely through a smartphone application or SMS service was highly valued.

Second, internet banking was also identified as an important factor in promoting customer satisfaction. Respondents appreciated the service's features, including access to up-to-date information, effective cash flow management, and enhanced privacy and data protection. Internet banking simplified complex transactions such as foreign currency transfers and enabled customers to monitor and control their accounts more efficiently. Although slightly less influential than mobile banking, internet banking still played a significant role in shaping positive customer experiences.

Third, ATM usage was shown to have a moderate impact on customer satisfaction. While customers acknowledged the convenience of using ATMs for deposits, withdrawals, and bill payments, there were concerns regarding the reliability and availability of cash in the machines. Some respondents indicated that ATMs were not always functional, and cash shortages occasionally disrupted their banking experience. These limitations reduced the effectiveness of ATMs as a fully satisfactory automated service channel.

Overall, the automation of banking services was found to positively influence customer satisfaction. Automated systems were generally viewed as user-friendly, efficient, and helpful in saving time. However, the study also revealed areas needing improvement, particularly in ATM service reliability and broader access to automated tools. The study concluded that with proper investment in digital infrastructure, training, and customer engagement, banks can further enhance customer satisfaction through technology-driven services.

Recommendations

For Managers and Practitioners

Bank managers and frontline service providers should place greater emphasis on strengthening and expanding their mobile banking platforms. Since mobile banking was identified as the most impactful factor influencing customer satisfaction, continuous upgrades, simplified interfaces, and improved functionality should be prioritized. Mobile apps must be secure, stable, and capable of supporting a wide range of financial activities.

Additionally, managers should work to improve the functionality and availability of ATM services. This includes ensuring a consistent supply of cash, regular machine maintenance, and expanding ATM coverage to more geographic locations. Clear on-screen instructions, multilingual support, and technical assistance should be available to help users who may struggle with ATM operations.

Customer education is another key recommendation. Banks should invest in educational campaigns, instructional videos, and in-person training to help customers become more confident in using digital tools. Customer support teams should be trained to provide responsive and accurate assistance, especially for customers unfamiliar with digital banking.

Moreover, banks should leverage available customer data to offer personalized services. Understanding customer preferences and behaviors can allow banks to design services that align more closely with individual needs, which in turn enhances satisfaction and loyalty.

For Policy Makers and Industry Associations

Government regulators and banking associations should play a supportive role in encouraging investment in digital banking infrastructure. This includes providing financial or policy incentives to banks that expand automated services to underserved regions, such as rural areas and semi-urban communities.

To standardize customer experience and service quality across institutions, policymakers should develop and enforce regulations that define service benchmarks for automated banking. These standards could cover response time, ATM uptime, mobile app security, and customer data protection.

Furthermore, national-level initiatives could be launched to increase financial inclusion through automation. Awareness programs highlighting the benefits and usage of mobile and internet banking could help bridge the digital divide. Partnerships between banks and telecom companies can also be encouraged to promote broader access to mobile financial services.

For Future Research

Future research should consider using more advanced statistical models such as Partial Least Squares Structural Equation Modeling (PLS-SEM) or multiple regression analysis. These models would allow researchers to identify and test complex relationships among different variables and understand the causal pathways between automated services and customer satisfaction.

Expanding the geographical scope beyond Delhi is essential. Future studies should include respondents from other cities, towns, and rural areas in India to capture a more representative sample and understand regional differences in access and satisfaction.

In addition to mobile banking, internet banking, and ATMs, future studies can also explore newer forms of automation in banking, such as the use of chatbots, artificial intelligence, biometric authentication, and voice-activated banking. These technologies are emerging trends that could reshape customer interaction with banks.

Finally, including qualitative research methods such as interviews and focus groups would enrich the findings. While surveys offer broad insights, qualitative methods can reveal deeper perceptions, emotional responses, and contextual challenges that influence how customers use and feel about automated banking services.

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APPENDIX

Appendix A: Survey Questionnaire

Section A: Demographic Information

1.   Gender:
   o   Male
   o   Female
2.   Age Group:
   o   18–25
   o   26–35
   o   36–45
   o   46–55
3.   Educational Qualification:
   o   Primary
   o   Secondary
   o   College
   o   University
4.   Duration of Banking Relationship:
   o   1–5 years
   o   6–10 years
   o   11–15 years
   o   15–20 years

Section B: Mobile Banking Usage (5-point Likert Scale: 1 = Strongly Disagree to 5 = Strongly Agree)

1.   Mobile banking services help to minimize costs and errors
2.   Mobile banking allows access to multiple accounts simultaneously
3.   Mobile banking is easy to use

4.   Mobile banking enhances money security
5.   Mobile banking saves time

Section C: Internet Banking Usage

1.   Internet banking helps manage cash flow effectively
2.   Internet banking ensures transaction security and privacy
3.   Information on internet banking services is up-to-date
4.   Internet banking simplifies foreign currency transactions
5.   Transaction process is fast using internet banking

Section D: ATM Usage

1.   Cash deposit facilities are convenient
2.   Cash withdrawal facilities are reliable
3.   ATMs help pay utility bills
4.   ATMs are easy to use
5.   Cash is always available in ATMs

Section E: Customer Satisfaction

1.   Automated systems help conduct transactions efficiently
2.   Interactions with automated systems are clear
3.   It is easy to operate automated systems
4.   Automated systems are user-friendly
5.   Using automated systems saves time

Appendix B: Participating Banks and Respondent Distribution

Bank Name	Number of Respondents
SBI	10
AXIS Bank	10
HDFC Bank	10
KOTAK	10
INDUSIND Bank	15
PNB	5
ICICI Bank	13
PUNJAB SINDH Bank	7

Bank Name	Number of Respondents
BOI	10
Bank of Baroda	10

Appendix C: Complete SPSS Output (Summary)

This appendix presents the summarized SPSS output data for all key variables analyzed in the study, including mobile banking usage, internet banking usage, ATM usage, and customer satisfaction. The descriptive statistics and reliability analysis are shown below. Complete digital SPSS output files are available upon request.

1. Reliability Statistics (Cronbach's Alpha)

Variable	Number of Items	Cronbach Alpha
Mobile Banking	5	0.888
Internet Banking	5	0.837
ATM Usage	5	0.861
Customer Satisfaction	5	0.869
Overall	20	0.897

2. Descriptive Statistics Summary

Mobile Banking Usage

Statement	Mean	Std. Deviation
Minimizes cost and errors	4.00	0.651
Access to multiple accounts	3.97	0.658
Easy to use	3.94	0.617
Enhances money security	3.85	0.626
Saves time	3.88	0.640

Internet Banking Usage

Statement	Mean	Std. Deviation
Manages cash flow effectively	3.77	0.694
Strong transaction security	3.83	0.682
Information is up-to-date	3.79	0.795

| Simplifies foreign transactions | 3.82 | 0.730 |
| Transaction process is fast | 3.75 | 0.702 |

ATM Usage

Statement	Mean	Std. Deviation
Cash deposit facility	3.71	0.671
Cash withdrawal facility	3.74	0.733
Helps pay utility bills	3.75	0.672
Easy to use	3.67	0.697
Cash availability	3.63	0.706

Customer Satisfaction

Statement	Mean	Std. Deviation
Conducts transactions efficiently	3.73	0.750
Interaction is understandable	3.78	0.690
System does what I want	3.81	0.615
System is easy to use	3.84	0.564
Saves time at work	3.82	0.626

Appendix D: Reliability Statistics

Variable	Cronbach Alpha
Mobile Banking	0.888
Internet Banking	0.837
ATM Usage	0.861
Customer Satisfaction	0.869
Overall	**0.897**

Interpretation: All variables have high internal consistency ($\alpha > 0.60$), supporting instrument reliability.

Appendix E:

Example from Mobile Banking Usage:

Statement	Mean	Std. Dev
Mobile banking helps minimize cost and errors	4.00	0.651
Access to multiple accounts	3.97	0.658
Easy to use	3.94	0.617
Enhances security	3.85	0.626
Saves time	3.88	0.640

Appendix F: Ethics and Consent Form

Participant Information and Consent Form

Research Title:
The Effect of Automation of Banking Services on Customer Satisfaction

Researcher(s):
Sunny Singh

Institution(s):
Galgotias University, UP, India

Purpose of the Study

The purpose of this study is to investigate how the automation of banking services (including mobile banking, internet banking, and ATM usage) influences customer satisfaction at private banks. Your responses will help us gain insights into customer experiences and perceptions of technology-driven banking.

Procedures

If you agree to participate, you will be asked to complete a structured questionnaire, which should take approximately 10–15 minutes. Your answers will be recorded anonymously and analyzed statistically for academic research purposes only.

Voluntary Participation

Your participation in this study is entirely voluntary. You may decline to participate or withdraw from the study at any point without facing any negative consequences.

Confidentiality

All responses will remain strictly confidential. No personal information (such as your name or bank account details) will be collected. The data will be stored securely and used exclusively for the purpose of this research.

Anonymity

Your identity will not be linked to your responses. The results will be presented in aggregate form, ensuring that individual participants cannot be identified in any publications or presentations arising from this study.

Benefits and Risks

There are no known risks associated with participating in this study. Although there are no direct personal benefits, your participation may help improve banking services and enhance customer experiences in the future.

Consent Statement

By signing below, I confirm that:
- I have read and understood the information above.
- I voluntarily agree to participate in this research study.
- I understand that I can withdraw at any time without penalty.
- I give consent for my anonymous responses to be used in academic reporting and publication.

Participant Name : _____

Signature: _____

Date: _____

Researcher's Name : _____

Researcher's Signature: _____