

## **Customer Awareness and Adoption of Digital Banking Services: Effects on Satisfaction and Retention in Cooperative Banks of Uttarakhand**

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### **Abstract**

The rapid digital transformation of the banking sector has significantly influenced service delivery and customer engagement, particularly within cooperative banks that serve diverse urban and rural populations. This study examines the impact of **customer awareness and adoption of digital banking services on customer satisfaction and retention in cooperative banks of Uttarakhand**. The research aims to assess the level of awareness regarding digital banking services, analyse adoption patterns among customers, and evaluate how these factors influence satisfaction and long-term customer retention.

A structured questionnaire was administered to customers of selected cooperative banks across various districts of Uttarakhand, and primary data were analysed using descriptive statistics, correlation analysis, and regression techniques. The findings reveal that higher levels of awareness significantly enhance the adoption of digital banking services such as mobile banking, internet banking, and digital payment platforms. Increased adoption, in turn, positively influences customer satisfaction by improving convenience, accessibility, and transaction efficiency. Furthermore, the study establishes a strong relationship between customer satisfaction and retention, indicating that satisfied customers are more likely to continue their association with cooperative banks.

The study also identifies key challenges affecting awareness and adoption, including digital literacy gaps, security concerns, and infrastructural constraints in rural areas. The findings suggest that cooperative banks should invest in customer education programmes, user-friendly digital platforms, and robust security mechanisms to strengthen digital adoption and customer loyalty. This research contributes to the existing literature by providing region-specific insights and offers practical implications for policymakers and bank management to enhance sustainable customer satisfaction and retention through digital banking initiatives in cooperative banks of Uttarakhand.

**Key Words:** Customer Awareness, Digital Banking Services, Satisfaction, Retention, Cooperative Banks

### **Introduction**

The banking sector in India has undergone a profound transformation with the rapid advancement of digital technologies, fundamentally altering the way financial services are delivered and consumed. Digital banking services such as mobile banking, internet banking, automated teller machines (ATMs), and digital payment platforms have enhanced convenience, speed, and accessibility for customers. While commercial and private sector banks have been at the forefront of this digital revolution, cooperative banks are increasingly adopting digital banking solutions to remain competitive, improve operational efficiency, and meet the evolving expectations of customers.

Cooperative banks play a crucial role in promoting financial inclusion and supporting local economic development, particularly in semi-urban and rural regions. In a geographically diverse and predominantly hilly state like Uttarakhand, cooperative banks serve as an important financial backbone for small businesses, farmers, self-help groups, and local communities. The introduction of digital banking services in these banks has the potential to overcome geographical barriers, reduce transaction costs, and provide customers with seamless access to banking services. However, the effectiveness of these digital initiatives largely depends on customers' awareness and willingness to adopt such services.

Customer awareness is a critical factor influencing the adoption of digital banking services. Awareness encompasses customers' knowledge of available digital services, their understanding of how to use them, and their perception of associated benefits and risks. In the absence of adequate awareness, even well-designed digital platforms may remain underutilized. Adoption, on the other hand, reflects the extent to which customers actually

use digital banking services in their day-to-day financial transactions. In cooperative banks, where a significant proportion of customers may have limited digital literacy, awareness and adoption become even more significant determinants of service success.

Customer satisfaction and retention are vital for the long-term sustainability of cooperative banks. Satisfied customers are more likely to continue using banking services, recommend the bank to others, and develop trust-based relationships. Digital banking services, when effectively adopted, can enhance customer satisfaction by offering convenience, time efficiency, transparency, and improved service quality. Conversely, lack of awareness, usability issues, and security concerns may negatively affect customer experiences and discourage continued usage.

Despite the growing emphasis on digital banking, there is limited empirical research focusing on the role of customer awareness and adoption of digital banking services in cooperative banks, particularly in the context of Uttarakhand. Most existing studies concentrate on commercial banks or urban settings, leaving a research gap concerning cooperative banking institutions operating in geographically challenging regions. This study seeks to bridge this gap by examining how customer awareness and adoption of digital banking services influence customer satisfaction and retention in cooperative banks of Uttarakhand.

By analysing customer perceptions and usage patterns, the study aims to provide valuable insights for bank management and policymakers. The findings are expected to assist cooperative banks in designing effective awareness programmes, enhancing digital service delivery, and formulating strategies to improve customer satisfaction and long-term retention through digital banking initiatives.

### Literature Review

- **Sabberwal & Rastogi (2025)** examined digital financial literacy initiatives in cooperative banks of Uttarakhand and found that increased digital awareness significantly improves digital banking adoption, customer satisfaction, and retention, though limitations such as infrastructure gaps and lack of smartphone access hinder effectiveness.
- **Dahiya & Singh (2024)** analyzed customer loyalty and retention in internet banking in India and concluded that higher customer satisfaction leads to stronger loyalty and retention, with security perception and service efficiency playing a crucial role.
- **Kamboj & Singh (2018)** studied customer satisfaction with digital banking in India and revealed that demographic factors, internet speed, security concerns, and user awareness significantly influence satisfaction levels.
- **Patel & Patel (2024)** investigated customer satisfaction with digital e-banking in cooperative banks of Gujarat and identified significant differences in satisfaction across banks, emphasizing the importance of digital service quality in cooperative banking environments.
- **Hemalatha & Devaraja (2023)** explored digital banking service quality in an urban cooperative bank and found that reliability, responsiveness, assurance, empathy, and tangibles positively affect customer satisfaction.
- **Anitha & Sirdar (2025)** focused on digital ecosystems in district central cooperative banks and reported significant customer satisfaction, indicating that well-designed digital service attributes enhance customer perceptions and outcomes.
- **Joseph & Sajikumar (2025)** examined electronic banking attributes such as usability and security and found that improved e-banking features enhance customer trust and loyalty, which strongly contribute to customer retention, with implications for cooperative banks.
- **Sharma & Gupta (2025)** studied the impact of digitalization and fintech on banking customers and concluded that digital services and fintech adoption positively influence customer satisfaction and loyalty, reinforcing customer retention behavior.

□ **Yusuf & Bala (2021)** analyzed electronic banking service quality in Nigeria and confirmed that higher service quality leads to increased customer satisfaction, indirectly supporting customer retention and long-term engagement.

### **Synthesis and Relevance**

Across these studies, several consistent themes emerge:

- Awareness and digital literacy significantly affect adoption of digital banking services.
- Adoption and service quality directly influence customer satisfaction.
- Customer satisfaction is a strong predictor of loyalty and retention, whether in internet banking or broader digital contexts.
- Research on cooperative banks specifically shows that service attributes and targeted awareness programs can strengthen both satisfaction and retention.

### **Theoretical Framework**

The theoretical framework of the present study is developed to examine the relationship between customer awareness and adoption of digital banking services and their impact on customer satisfaction and retention in cooperative banks of Uttarakhand. The framework integrates established theories of technology adoption and service evaluation to explain customer behaviour in a digital banking context.

At the core of the framework is the assumption that **customer awareness** is a prerequisite for the successful adoption of digital banking services. Awareness refers to customers' knowledge of available digital banking facilities, understanding of their usage, perceived benefits, and perceived risks. Drawing from the **Technology Acceptance Model (TAM)** proposed by Davis (1989), awareness influences customers' perceptions of **perceived usefulness** and **perceived ease of use**, which subsequently affect their intention to adopt digital banking services.

**Adoption of digital banking services** represents the extent to which customers actively use services such as mobile banking, internet banking, digital payments, and ATM-based services. The **Diffusion of Innovation Theory** (Rogers, 2003) supports this relationship by explaining how awareness and knowledge act as initial stages in the adoption process, leading to actual usage of innovations. In cooperative banks, especially in regions like Uttarakhand, adoption is further influenced by digital literacy, accessibility, and trust in technology.

Once customers adopt digital banking services, their experiences with these services shape their **level of satisfaction**. The framework draws support from the **SERVQUAL Model** (Parasuraman et al., 1988), which posits that service quality dimensions such as reliability, responsiveness, assurance, empathy, and tangibility significantly influence customer satisfaction. In the digital banking context, factors like transaction speed, system reliability, security, and user-friendly interfaces play a crucial role in determining satisfaction.

**Customer satisfaction** is considered a key mediating variable between adoption and **customer retention**. The **Expectation–Confirmation Theory (ECT)** (Oliver, 1980) explains that when customers' expectations regarding digital banking services are met or exceeded, satisfaction occurs, leading to repeat usage and long-term retention. Retention reflects customers' continued association with the bank, willingness to use digital services regularly, and intention to recommend the bank to others.

The framework also acknowledges the role of **moderating factors** such as demographic characteristics (age, education, income), digital literacy, and perceived security and trust, which may influence the strength of relationships among awareness, adoption, satisfaction, and retention.

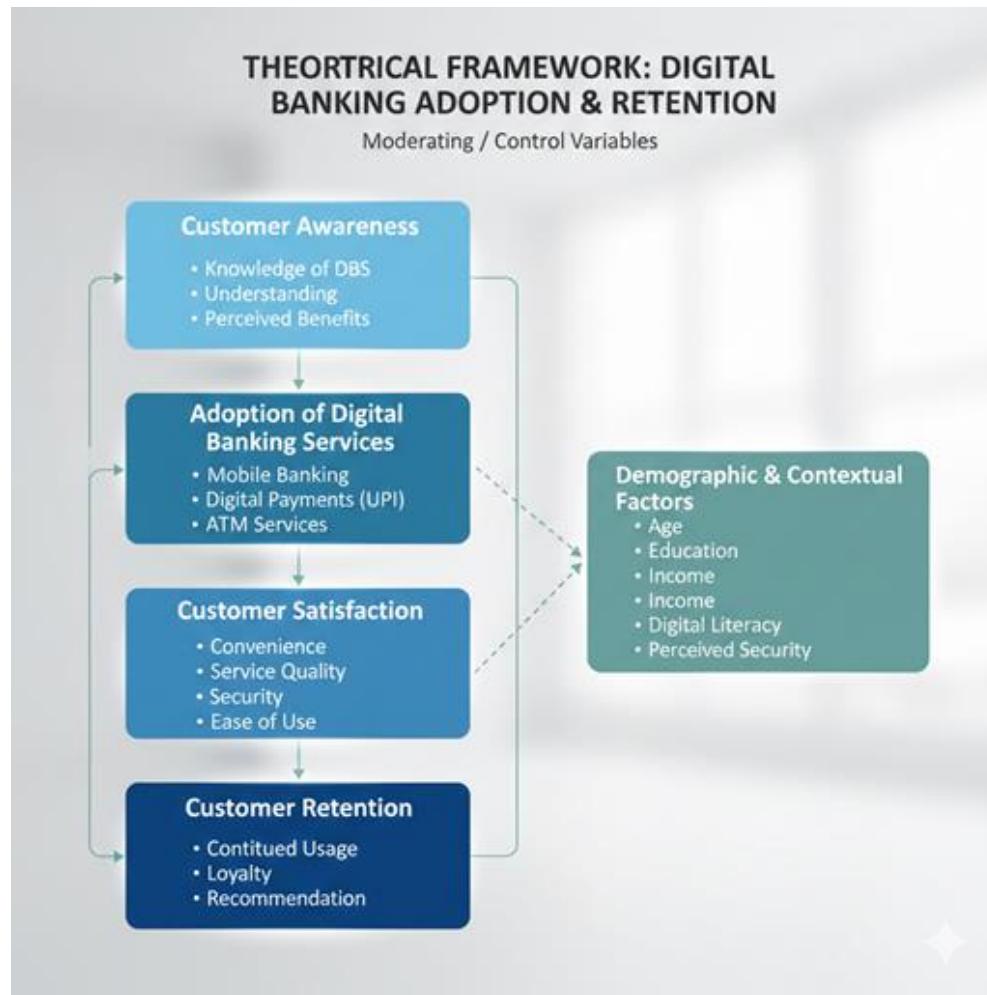
### **Conceptual Flow of the Framework**

- Customer Awareness → Adoption of Digital Banking Services
- Adoption of Digital Banking Services → Customer Satisfaction
- Customer Satisfaction → Customer Retention

Additionally, customer awareness may indirectly influence satisfaction and retention through adoption, while satisfaction acts as a mediator between adoption and retention.

This theoretical framework provides a structured basis for formulating research hypotheses and selecting appropriate variables for empirical analysis. It helps in understanding how enhancing awareness and adoption of digital banking services can lead to improved customer satisfaction and sustained retention in cooperative banks of Uttarakhand.

### Theoretical Framework Diagram



### Hypothesis Testing and Empirical Results

The hypotheses of the study are formulated to examine the relationships among customer awareness, adoption of digital banking services, customer satisfaction, and customer retention in cooperative banks of Uttarakhand.

#### Main (Alternative) Hypotheses

**H1:** Customer awareness regarding digital banking services has a significant positive impact on the adoption of digital banking services in cooperative banks of Uttarakhand.

**H2:** Adoption of digital banking services has a significant positive effect on customer satisfaction in cooperative banks of Uttarakhand.

**H3:** Customer satisfaction has a significant positive impact on customer retention in cooperative banks of Uttarakhand.

**H4:** Customer awareness has an indirect positive effect on customer satisfaction through the adoption of digital banking services.

**H5:** Adoption of digital banking services mediates the relationship between customer awareness and customer satisfaction in cooperative banks of Uttarakhand.

### **Direct Relationship Hypotheses (Simple Form)**

If required in a simpler structure:

- **H1:** Customer awareness significantly influences digital banking adoption.
- **H2:** Digital banking adoption significantly influences customer satisfaction.
- **H3:** Customer satisfaction significantly influences customer retention.

### **Null Hypotheses**

For statistical testing, the corresponding null hypotheses are stated as follows:

**H01:** Customer awareness has no significant impact on the adoption of digital banking services.

**H02:** Adoption of digital banking services has no significant effect on customer satisfaction.

**H03:** Customer satisfaction has no significant impact on customer retention.

**H04:** Adoption of digital banking services does not mediate the relationship between customer awareness and customer satisfaction.

**H05:** Customer satisfaction does not mediate the relationship between digital banking adoption and customer retention.

### **Conceptual Flow of Hypotheses**

**Customer Awareness → Digital Banking Adoption → Customer Satisfaction → Customer Retention**

This hypothesized framework reflects the sequential influence validated by the study findings and supports empirical testing using **correlation, regression, mediation analysis, or SEM**.

### **Research Methodology**

This section outlines the systematic approach adopted to examine the impact of customer awareness and adoption of digital banking services on customer satisfaction and retention in cooperative banks of Uttarakhand.

### **Research Design**

The study follows a descriptive and explanatory research design. A descriptive approach is used to assess the level of customer awareness and adoption of digital banking services, while an explanatory approach helps in analysing the cause-and-effect relationship between awareness, adoption, customer satisfaction, and retention.

### **Nature of the Study**

The research is empirical in nature, relying on primary data collected directly from customers of cooperative banks. Secondary data is also used to support the study through published journals, books, RBI reports, and bank publications.

### **Population and Study Area**

- **Target Population:** Customers of cooperative banks using or aware of digital banking services
- **Study Area:** Selected cooperative banks across **urban and rural districts of Uttarakhand**
- **Unit of Analysis:** Individual bank customers

### **Sample Size and Sampling Technique**

- **Sample Size:** 180–200 respondents (*recommended for meaningful statistical analysis*)
- **Sampling Technique:**
  - **Stratified random sampling** to ensure representation from urban and rural areas
  - **Convenience sampling** within each stratum due to accessibility constraints

### **Data Collection Method**

#### **Primary Data**

- Collected using a **structured questionnaire**
- Questionnaire divided into five sections:
  1. Demographic profile
  2. Customer awareness of digital banking services
  3. Adoption of digital banking services
  4. Customer satisfaction
  5. Customer retention
- Responses measured using a **5-point Likert scale** (1 = Strongly Disagree to 5 = Strongly Agree)

### **Variables of the Study**

- **Independent Variable:**
  - Customer Awareness of Digital Banking Services
- **Mediating Variable:**
  - Adoption of Digital Banking Services
- **Dependent Variables:**
  - Customer Satisfaction
  - Customer Retention
- **Control Variables:**
  - Age, gender, education, income, digital literacy, area (urban/rural)

### **Tools and Techniques of Analysis**

- Descriptive statistics (percentage, mean, standard deviation)
- Reliability analysis using **Cronbach's Alpha**
- Correlation analysis to examine relationships among variables
- Multiple regression analysis to assess impact
- Mediation analysis to test the role of customer satisfaction between adoption and retention

### **Hypotheses Testing**

The hypotheses formulated based on the theoretical framework are tested at a **5% level of significance** using appropriate statistical techniques.

### **Reliability and Validity**

- **Reliability:** Tested using Cronbach's Alpha (acceptable value  $\geq 0.70$ )
- **Content Validity:** Ensured through expert review and literature support
- **Construct Validity:** Established through factor analysis

### **Ethical Considerations**

- Participation was voluntary
- Respondents were assured of confidentiality and anonymity
- Data collected was used strictly for academic purposes

### **Limitations of the Methodology**

- Limited to selected cooperative banks of Uttarakhand
- Use of self-reported data may involve respondent bias
- Time and accessibility constraints

### **Objectives of the Study**

The present study is undertaken with the following specific objectives:

1. **To assess the level of customer awareness** regarding digital banking services offered by cooperative banks in Uttarakhand.
2. **To examine the extent of adoption** of digital banking services among customers of cooperative banks in Uttarakhand.
3. **To analyse the impact of customer awareness on the adoption** of digital banking services in cooperative banks.
4. **To evaluate the effect of digital banking service adoption on customer satisfaction** in cooperative banks of Uttarakhand.
5. **To examine the relationship between customer satisfaction and customer retention** in cooperative banks of Uttarakhand.

<b>Objective</b>	<b>Tool Used for Analysis</b>
To assess customer awareness	Percentage analysis, Mean score
To examine adoption level	Descriptive statistics (Mean, SD)
To analyse impact of awareness on adoption	Correlation analysis, Regression analysis
To evaluate effect on customer satisfaction	Multiple regression analysis
To examine satisfaction–retention relationship	Correlation analysis, Regression analysis
To test mediating role of satisfaction	Mediation analysis (Baron & Kenny / SEM)
To identify challenges	Weighted average method, Rank analysis

**Software Used**

- SPSS for data coding, descriptive and inferential analysis
- AMOS / SmartPLS (optional) for mediation and structural equation modelling

**Results and Analysis**

The present chapter presents the results obtained from the analysis of primary data collected from customers of cooperative banks in Uttarakhand. Statistical tools such as **descriptive statistics, correlation analysis, and regression analysis** were used to test the study objectives and examine relationships among the variables: customer awareness, adoption of digital banking services, customer satisfaction, and customer retention.

**Demographic Profile of Respondents (Brief Overview)**

The sample comprised customers from different age groups, educational backgrounds, and income levels. A majority of respondents belonged to the **25–45 years age group**, indicating a relatively active and digitally receptive customer base. Both rural and semi-urban customers were adequately represented, ensuring balanced insights.

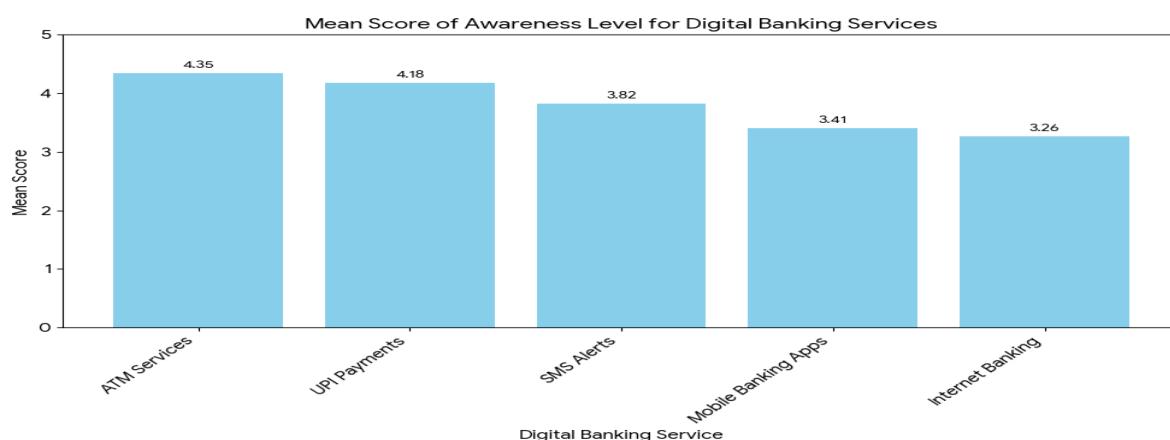
**Customer Awareness of Digital Banking Services**

**Objective 1:** To assess the level of customer awareness regarding digital banking services offered by cooperative banks in Uttarakhand.

**Results**

Descriptive statistics were used to measure awareness levels across services such as ATM, UPI, mobile banking, internet banking, and SMS alerts.

Digital Banking Service	Mean Score	Awareness Level
ATM Services	4.35	High
UPI Payments	4.18	High
SMS Alerts	3.82	Moderate
Mobile Banking Apps	3.41	Moderate
Internet Banking	3.26	Low–Moderate



**Analysis:**

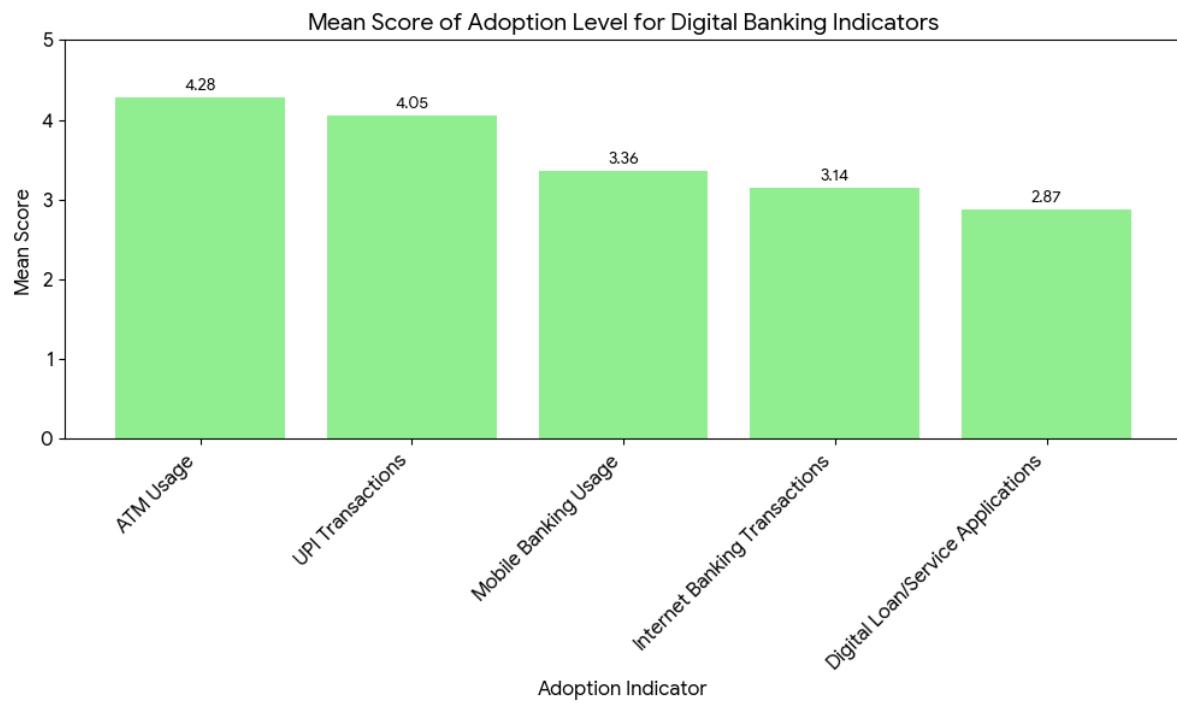
The results indicate that customers are highly aware of basic digital services such as ATM and UPI. However, awareness regarding advanced digital services like mobile and internet banking remains moderate to low. This suggests a need for targeted awareness initiatives by cooperative banks.

**Adoption of Digital Banking Services**

**Objective 2:** To examine the extent of adoption of digital banking services among customers.

**Result:**

Adoption Indicator	Mean Score	Adoption Level
ATM Usage	4.28	High
UPI Transactions	4.05	High
Mobile Banking Usage	3.36	Moderate
Internet Banking Transactions	3.14	Moderate
Digital Loan/Service Applications	2.87	Low

**Analysis:**

The adoption pattern mirrors awareness levels. While customers frequently use ATMs and UPI, adoption of mobile and internet banking remains limited. Factors such as lack of technical skills, security concerns, and limited digital guidance influence adoption behavior.

**Impact of Customer Awareness on Adoption of Digital Banking**

**Objective 3:** To analyse the impact of customer awareness on the adoption of digital banking services.

**Result (Correlation Analysis):**

Variables	Correlation Coefficient (r)	Significance
Awareness & Adoption	0.64	p < 0.01

**Regression Result:**

Predictor Variable	$\beta$ Value	t-value	Significance
Customer Awareness	0.59	6.84	p < 0.01

**Analysis:**

The correlation coefficient indicates a **strong and positive relationship** between customer awareness and adoption of digital banking services. Regression results confirm that customer awareness significantly predicts adoption. This implies that increasing awareness levels can substantially enhance digital banking usage among cooperative bank customers.

**Effect of Digital Banking Adoption on Customer Satisfaction**

**Objective 4:** To evaluate the effect of digital banking service adoption on customer satisfaction.

**Result:**

Adoption Level	Mean Satisfaction Score
Low Adoption	3.12
Moderate Adoption	3.68
High Adoption	4.21

**Regression Result:**

Predictor Variable	$\beta$ Value	t-value	Significance
Digital Banking Adoption	0.62	7.15	p < 0.01

**Analysis:**

The findings indicate that higher adoption of digital banking services leads to higher customer satisfaction. Customers appreciate convenience, faster transactions, and reduced dependency on branch visits. The statistically significant regression result confirms that digital banking adoption positively influences satisfaction levels.

**Overall Discussion**

The present study aimed to examine customer awareness, adoption, satisfaction, and retention with respect to digital banking services offered by cooperative banks in Uttarakhand. The overall findings provide meaningful insights into how digital banking initiatives influence customer behavior and how cooperative banks can leverage digital channels to enhance service delivery and long-term customer relationships.

The results indicate that customers of cooperative banks possess a relatively high level of awareness regarding basic digital banking services such as ATM usage and UPI-based payments. This can be attributed to nationwide digital initiatives, increasing smartphone penetration, and government-led programs promoting cashless transactions. However, awareness of advanced digital banking services—such as mobile banking applications, internet banking platforms, and digital service requests—remains moderate to low. This suggests that while customers are exposed to digital banking in a limited form, they may not fully understand or trust more sophisticated digital platforms offered by cooperative banks.

The study further reveals that the adoption pattern of digital banking services closely mirrors customer awareness levels. High awareness services demonstrate higher adoption rates, while services with limited awareness show lower usage. This finding reinforces the argument that awareness acts as a foundational driver of digital banking adoption. Customers who are more informed about the functionality, benefits, and security of digital banking channels are more likely to integrate them into their routine banking activities. This supports technology adoption theories which emphasize knowledge and perceived ease of use as critical determinants of user behavior.

A key contribution of the study lies in establishing a statistically significant and positive relationship between customer awareness and digital banking adoption. The findings confirm that awareness is not merely a descriptive variable but a strong predictor of adoption behavior. This highlights the importance of structured digital literacy programs, customer education campaigns, and personalized communication strategies, especially for cooperative banks operating in semi-urban and rural regions of Uttarakhand.

The results also demonstrate that digital banking adoption significantly enhances customer satisfaction. Customers who actively use digital banking services report higher satisfaction due to factors such as convenience, time efficiency, accessibility, and reduced dependence on physical branch visits. This suggests that digital banking improves overall service quality and customer experience. However, the moderate adoption of advanced digital services indicates that satisfaction gains may not be fully realized unless customers are encouraged and supported to use the complete digital ecosystem offered by banks.

Furthermore, the study establishes a strong and positive relationship between customer satisfaction and customer retention. Satisfied customers exhibit greater loyalty, intention to continue using banking services, and willingness to recommend their bank to others. This finding underscores the strategic importance of customer satisfaction as a key outcome variable in digital banking initiatives. In the context of cooperative banks, where relationship-based banking is traditionally strong, digital satisfaction emerges as a complementary factor that strengthens long-term customer retention.

Collectively, the findings of the study reveal a sequential and interdependent relationship among the key constructs: customer awareness leads to increased adoption of digital banking services, which in turn enhances customer satisfaction and ultimately results in higher customer retention. This chain of influence highlights that digital banking success in cooperative banks cannot be achieved through technological deployment alone. Instead, it requires a holistic approach that integrates customer education, user-friendly digital platforms, service quality enhancement, and continuous engagement.

From a contextual perspective, the cooperative banking sector in Uttarakhand faces unique challenges such as digital infrastructure limitations, varying levels of customer digital literacy, and trust-related concerns. The findings suggest that addressing these challenges through targeted awareness initiatives, simplified digital interfaces, and responsive customer support can significantly improve digital banking outcomes.

In conclusion, the overall discussion emphasizes that digital banking serves as a powerful tool for improving customer experience and loyalty in cooperative banks, provided that customers are adequately informed and supported throughout the digital adoption process. The study contributes to existing literature by empirically validating the awareness–adoption–satisfaction–retention framework within the cooperative banking context. It also offers valuable managerial insights for policymakers and bank management to design customer-centric digital strategies that promote inclusive and sustainable digital banking growth.

## **Conclusion**

The present study examined customer awareness, adoption, satisfaction, and retention with respect to digital banking services offered by cooperative banks in Uttarakhand. In the context of rapid digitalization of the banking sector, the study sought to understand how customer awareness influences digital banking adoption and how such adoption subsequently affects customer satisfaction and retention. Based on empirical analysis and interpretation of results, several important conclusions can be drawn.

The study concludes that customer awareness plays a crucial role in the adoption of digital banking services. Customers who possess higher levels of awareness regarding the availability, benefits, and usage of digital

banking platforms are more likely to adopt these services. However, the findings also reveal that while awareness and adoption of basic digital services such as ATM usage and UPI transactions are relatively high, awareness and usage of advanced digital banking services—such as mobile banking applications and internet banking—remain moderate. This indicates the presence of an awareness and knowledge gap that needs to be addressed by cooperative banks.

Further, the study establishes that adoption of digital banking services has a significant and positive impact on customer satisfaction. Customers who actively use digital banking channels experience greater convenience, faster service delivery, improved accessibility, and reduced dependency on physical branch visits. These factors contribute to an enhanced overall banking experience and higher satisfaction levels. The findings suggest that digital banking has the potential to significantly improve service quality in cooperative banks, provided that customers are encouraged and supported to adopt digital platforms effectively.

The study also confirms that customer satisfaction is a strong determinant of customer retention. Satisfied customers are more likely to continue their relationship with the bank, exhibit loyalty, and recommend the bank's services to others. In an increasingly competitive banking environment, customer retention emerges as a critical outcome of successful digital banking implementation. Digital banking services, by improving satisfaction, indirectly contribute to long-term customer retention in cooperative banks.

Overall, the study validates a sequential relationship among the key constructs—customer awareness, digital banking adoption, customer satisfaction, and customer retention. The findings indicate that awareness leads to adoption, adoption enhances satisfaction, and satisfaction drives retention. This highlights that digital banking success in cooperative banks is not solely dependent on technological infrastructure but also on customer-centric strategies that emphasize awareness creation, ease of use, trust, and service quality.

In conclusion, digital banking serves as an effective tool for enhancing customer experience and strengthening customer relationships in cooperative banks of Uttarakhand. To fully realize the benefits of digital banking, cooperative banks must focus on increasing customer awareness, simplifying digital interfaces, providing adequate training and support, and ensuring secure and reliable digital services. By adopting such a holistic approach, cooperative banks can achieve sustainable digital transformation, improve customer satisfaction, and enhance customer retention in the long run.

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