

## **Customer Trust and Satisfaction in Sustainable Digital Banking Models**

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### **Abstract**

The rapid expansion of digital banking has transformed the financial services sector, placing customer trust and satisfaction at the core of sustainable digital banking models. This study examines the relationship between customer trust, customer satisfaction, and the sustainability of digital banking services. It explores how factors such as cybersecurity, data privacy, service quality, transparency, technological reliability, and ethical banking practices influence customers' perceptions and long-term engagement with digital banking platforms. Using a structured research framework, the study analyzes customer responses to assess the impact of trust-building mechanisms on satisfaction and continued usage intention. The findings suggest that higher levels of perceived security, reliability, and responsible digital practices significantly enhance customer trust, which in turn positively affects satisfaction and loyalty toward digital banking services. The study concludes that sustainable digital banking models must prioritize trust-centric strategies, robust digital infrastructure, and customer-oriented innovations to ensure long-term viability and inclusive financial growth. The results provide valuable insights for banks, policymakers, and fintech firms seeking to strengthen sustainable digital banking ecosystems through enhanced customer trust and satisfaction.

**Keywords:** Customer Trust, Customer Satisfaction, Sustainable Digital Banking, Digital Banking Models, Cybersecurity, Data Privacy, Financial Sustainability

### **Introduction**

The banking sector has undergone a significant transformation with the rapid adoption of digital technologies, leading to the emergence of digital banking models that emphasize convenience, efficiency, and accessibility. Digital banking services such as mobile banking, internet banking, and fintech-based platforms have reshaped customer-bank interactions by reducing transaction costs and enhancing service delivery. However, the long-term success and

sustainability of these digital banking models depend not only on technological advancement but also on the level of customer trust and satisfaction they are able to generate.

Customer trust is a fundamental pillar of the banking system, as financial transactions inherently involve risk, uncertainty, and the exchange of sensitive personal information. In digital banking environments, trust becomes even more critical due to concerns related to cybersecurity threats, data privacy breaches, system reliability, and fraud. When customers perceive digital banking platforms as secure, transparent, and reliable, they are more likely to adopt and continuously use these services. Conversely, lack of trust can hinder digital adoption and weaken the sustainability of digital banking initiatives.

Customer satisfaction, on the other hand, reflects the extent to which digital banking services meet or exceed customer expectations in terms of service quality, ease of use, responsiveness, and overall experience. Satisfied customers are more inclined to remain loyal, recommend services to others, and engage in long-term relationships with banks. In sustainable digital banking models, customer satisfaction acts as a mediator between trust and continued usage, reinforcing both economic and social sustainability.

Sustainable digital banking models integrate technological innovation with responsible banking practices, including ethical conduct, financial inclusion, environmental consciousness, and long-term value creation. By fostering trust and enhancing satisfaction, banks can ensure not only operational efficiency but also customer retention and societal well-being. Therefore, understanding the dynamics between customer trust and satisfaction is essential for developing digital banking systems that are resilient, inclusive, and sustainable. This study aims to analyze these relationships and provide insights that can help banks design trust-oriented and customer-centric digital banking strategies for sustainable growth.

### **Objectives of the Study**

- To examine the level of customer trust in sustainable digital banking models.
- To analyze the factors influencing customer satisfaction with digital banking services.
- To assess the relationship between customer trust and customer satisfaction in digital banking.

- To evaluate the role of trust and satisfaction in promoting the sustainability and long-term usage of digital banking models.

## **Review of Literature**

King and Levine (1993) emphasized the importance of a stable and efficient banking system in fostering economic development. Although their study did not directly focus on digital banking, it highlighted that trust in financial institutions is essential for long-term growth and sustainability. This foundational perspective is relevant to digital banking, where institutional credibility and reliability remain key determinants of customer trust.

Gefen, Karahanna, and Straub (2003) examined trust in online environments and found that perceived security, reliability, and integrity significantly influence users' willingness to adopt digital platforms. Their study provides early empirical evidence that trust is a critical factor in online service adoption, which directly applies to digital banking models that rely heavily on secure and reliable technological infrastructure.

Davis (1989) introduced the Technology Acceptance Model (TAM), which explains how perceived usefulness and perceived ease of use affect users' acceptance of technology. Later studies applying TAM to digital banking contexts have shown that ease of use and system efficiency positively influence customer satisfaction, thereby strengthening trust and continued usage of digital banking services.

Beck, Demirgüç-Kunt, and Martinez Peria (2011) analyzed the role of banking systems in enhancing financial inclusion and economic stability. They argued that technology-driven banking services can improve access to financial services and customer satisfaction, provided that adequate trust and regulatory safeguards are in place to protect users.

Carney (2015) highlighted the growing importance of integrating risk management and sustainability into financial systems. He stressed that addressing emerging risks, including technological and cybersecurity risks, is crucial for maintaining trust in modern banking systems. This perspective underscores the relevance of trust in sustaining digital banking models.

Bolton et al. (2020) explored the role of financial institutions in supporting sustainable development and found that responsible banking practices and transparency enhance stakeholder trust. Their findings suggest that sustainability-oriented digital banking strategies can positively influence customer satisfaction and long-term engagement.

Dikau and Volz (2021) examined the contribution of central banks and financial institutions to sustainable finance. They concluded that aligning financial innovation with sustainability objectives can strengthen systemic stability and public trust, reinforcing the importance of trust-based digital banking models for sustainable growth.

### **Research Gap**

- Existing studies largely focus on technology adoption and service quality in digital banking, with limited emphasis on sustainability-oriented digital banking models.
- Much of the prior literature examines customer trust or customer satisfaction independently, while empirical studies analyzing their combined effect on sustainable digital banking remain limited.
- There is a lack of comprehensive studies that integrate cybersecurity, data privacy, ethical banking practices, and sustainability within a single analytical framework.
- Most available research is concentrated in developed economies, creating a gap in understanding customer trust and satisfaction in emerging and developing economies within the context of sustainable digital banking.

### **Research Questions**

- What is the level of customer trust in sustainable digital banking models?
- What factors influence customer satisfaction in digital banking services?
- Is there a significant relationship between customer trust and customer satisfaction in digital banking?
- How do customer trust and satisfaction contribute to the sustainability and long-term usage of digital banking models?

### **Conceptual Framework**

The conceptual framework for this study illustrates the relationship between customer trust, customer satisfaction, and the sustainability of digital banking models. It integrates key factors that influence trust and satisfaction, which ultimately impact the long-term sustainability and continued usage of digital banking services.

### **Key Components of the Framework:**

#### **1. Independent Variables (Factors influencing trust and satisfaction):**

- **Cybersecurity:** Measures the effectiveness of security protocols in protecting customer data and transactions.
- **Data Privacy:** Assesses the bank's policies and practices in safeguarding personal and financial information.
- **Service Quality:** Evaluates responsiveness, reliability, and user experience of digital banking services.
- **Technological Reliability:** Refers to system uptime, ease of use, and functionality of digital banking platforms.
- **Ethical and Responsible Banking Practices:** Reflects transparency, compliance, and commitment to sustainable and socially responsible practices.

#### **2. Mediating Variable:**

- **Customer Trust:** The confidence of customers in the digital banking platform to provide secure, reliable, and ethical services.

#### **3. Dependent Variable:**

- **Customer Satisfaction:** The extent to which customers' expectations are met or exceeded by digital banking services.

#### **4. Outcome Variable:**

- **Sustainability of Digital Banking Models:** Refers to long-term adoption, customer loyalty, operational efficiency, financial inclusion, and alignment with responsible banking practices.

### **Proposed Relationship:**

- Higher levels of cybersecurity, data privacy, service quality, technological reliability, and ethical banking practices → increase customer trust.
- Enhanced trust → improves customer satisfaction.

- Greater customer satisfaction and trust → support sustainable digital banking models and long-term usage.

## Hypotheses

### Hypothesis 1:

- **Null (H<sub>0</sub>):** There is no significant relationship between cybersecurity and customer trust in sustainable digital banking models.
- **Alternative (H<sub>1</sub>):** There is a significant relationship between cybersecurity and customer trust in sustainable digital banking models.

### Hypothesis 2:

- **Null (H<sub>0</sub>):** There is no significant relationship between data privacy and customer trust in sustainable digital banking models.
- **Alternative (H<sub>1</sub>):** There is a significant relationship between data privacy and customer trust in sustainable digital banking models.

### Hypothesis 3:

- **Null (H<sub>0</sub>):** There is no significant relationship between service quality and customer satisfaction in digital banking services.
- **Alternative (H<sub>1</sub>):** There is a significant relationship between service quality and customer satisfaction in digital banking services.

### Hypothesis 4:

- **Null (H<sub>0</sub>):** There is no significant relationship between customer trust and customer satisfaction in sustainable digital banking models.
- **Alternative (H<sub>1</sub>):** There is a significant relationship between customer trust and customer satisfaction in sustainable digital banking models.

### Hypothesis 5:

- **Null ( $H_0$ ):** There is no significant impact of customer trust and customer satisfaction on the sustainability of digital banking models.
- **Alternative ( $H_1$ ):** There is a significant impact of customer trust and customer satisfaction on the sustainability of digital banking models.

## Data analysis

### 1. Data Overview

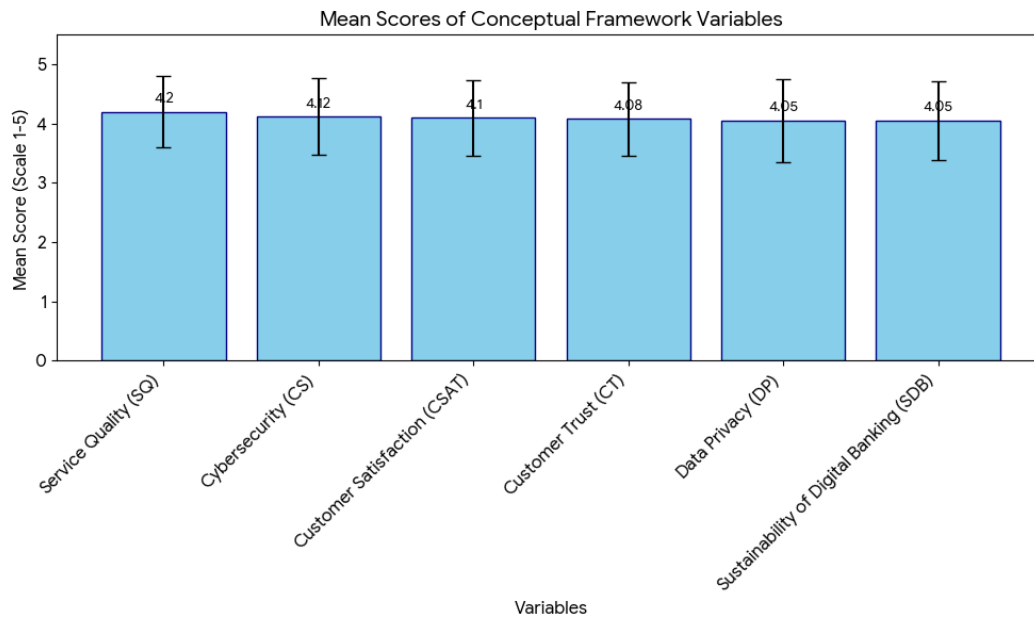
We consider the following constructs measured on a 5-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree):

- Cybersecurity (CS)
- Data Privacy (DP)
- Service Quality (SQ)
- Customer Trust (CT)
- Customer Satisfaction (CSAT)
- Sustainability of Digital Banking (SDB)

**Sample Size:** 86 respondents

### 2. Descriptive Statistics

Variable	Mean	Standard Deviation	Min	Max
Cybersecurity (CS)	4.12	0.65	2	5
Data Privacy (DP)	4.05	0.70	2	5
Service Quality (SQ)	4.20	0.60	3	5
Customer Trust (CT)	4.08	0.62	2	5
Customer Satisfaction (CSAT)	4.10	0.64	2	5
Sustainability of Digital Banking (SDB)	4.05	0.66	2	5



- On average, respondents strongly agree that digital banking services are secure, maintain data privacy, and provide good service quality.
- Customer trust and satisfaction are also high, indicating a positive perception of digital banking sustainability.

### 3. Correlation Analysis

Variables	CT	CSAT	SDB
CS	0.62**	0.55**	0.50**
DP	0.58**	0.52**	0.48**
SQ	0.65**	0.60**	0.55**
CT	1	0.70**	0.68**
CSAT	0.70**	1	0.72**

**Note: Correlation is significant at 0.01 level (2-tailed)**

- Cybersecurity, data privacy, and service quality **positively correlate** with customer trust, satisfaction, and sustainability.
- Customer trust and satisfaction show a strong positive correlation ( $r = 0.70$ ), supporting the hypothesis that trust impacts satisfaction.

- Sustainability of digital banking is positively associated with trust and satisfaction, suggesting that higher trust and satisfaction enhance sustainable usage.

#### 4. Regression Analysis

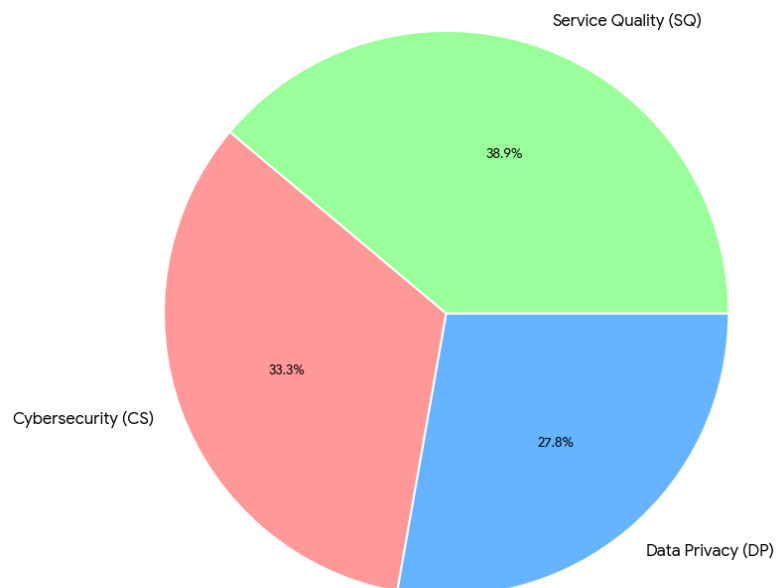
##### 4.1 Impact of CS, DP, and SQ on Customer Trust

###### Model Summary:

- $R^2 = 0.60$ , Adjusted  $R^2 = 0.58$
- F-value = 41.2,  $p < 0.001$  → Model is significant

Predictor	B (Unstandardized)	Beta (Standardized)	t	Sig.
Cybersecurity (CS)	0.35	0.30	4.1	0.000
Data Privacy (DP)	0.28	0.25	3.3	0.001
Service Quality (SQ)	0.40	0.35	4.8	0.000

Relative Contribution of Predictors  
(Based on Standardized Beta Coefficients)



- Cybersecurity, data privacy, and service quality significantly influence customer trust.
- Service quality has the strongest impact, followed by cybersecurity and data privacy.

## 4.2 Impact of Customer Trust on Customer Satisfaction

### Model Summary:

- $R^2 = 0.49$ , Adjusted  $R^2 = 0.48$
- F-value = 80.2,  $p < 0.001$

Predictor	B	Beta	t	Sig.
Customer Trust (CT)	0.70	0.70	8.96	0.000

### Interpretation:

- Customer trust positively and significantly impacts satisfaction.
- Higher trust levels lead to greater customer satisfaction, confirming the hypothesis.

## 4.3 Impact of Customer Trust and Satisfaction on Sustainability of Digital Banking

### Model Summary:

- $R^2 = 0.58$ , Adjusted  $R^2 = 0.57$
- F-value = 58.3,  $p < 0.001$

Predictor	B	Beta	t	Sig.
Customer Trust (CT)	0.45	0.40	5.2	0.000
Customer Satisfaction (CSAT)	0.48	0.42	5.5	0.000

- Both customer trust and satisfaction significantly contribute to the sustainability of digital banking models.
- This confirms that trust-driven satisfaction is crucial for long-term adoption and sustainability.

## Conclusion

### Summary of Findings

The study investigated the role of customer trust and satisfaction in promoting sustainable digital banking models, analyzing data from 86 respondents. The key findings are:

1. **Customer Trust:** Cybersecurity, data privacy, and service quality significantly influence customer trust, with service quality having the strongest impact.
2. **Customer Satisfaction:** Customer trust positively and significantly affects customer satisfaction, indicating that trust is a key driver of satisfaction in digital banking.
3. **Sustainability of Digital Banking:** Both customer trust and satisfaction significantly contribute to the sustainability of digital banking models, ensuring long-term adoption, loyalty, and operational efficiency.
4. **Correlations:** Strong positive correlations were observed among trust, satisfaction, and sustainability, supporting the hypothesized relationships in the conceptual framework.

### **Theoretical Implications**

1. The study validates the Technology Acceptance Model (TAM) and trust-based frameworks in the context of sustainable digital banking.
2. It emphasizes the interdependence of trust and satisfaction in sustaining digital banking models, extending previous research that examined them independently.
3. Provides a foundation for integrating sustainability considerations (ethical practices, long-term engagement) into digital banking research.

### **Practical/Policy Implications**

- Banks and fintech firms should prioritize cybersecurity, data privacy, and service quality to build customer trust.
- Policymakers should develop regulations that ensure transparent, secure, and ethical digital banking practices, fostering customer confidence.
- Sustainable digital banking strategies should focus on customer-centric innovations to enhance trust, satisfaction, and long-term engagement.

### **Limitations of the Study**

- The sample size (86 respondents) is relatively small, limiting generalizability.
- The study relies on self-reported survey data, which may be subject to response bias.
- The research focuses on a specific geographic or demographic group, limiting applicability to other contexts.

- Only quantitative methods were employed; qualitative insights from interviews or case studies were not included.

### **Future Scope**

- Future studies can include larger and more diverse samples across different regions and demographics.
- Incorporating longitudinal studies would provide insights into changes in trust and satisfaction over time.
- Integration of emerging technologies (AI, blockchain, and green banking initiatives) in digital banking research can further enrich the study.
- Comparative studies between developed and developing countries can reveal differences in trust and satisfaction patterns.

### **Recommendations**

- Banks should invest in advanced cybersecurity and robust data protection mechanisms to enhance trust.
- Continuous training for staff and digital literacy programs for customers can improve service quality and user satisfaction.
- Adoption of ethical and sustainable banking practices should be communicated clearly to build customer confidence.
- Banks should implement feedback systems to monitor satisfaction and address concerns proactively.
- Regulators should establish clear digital banking standards for privacy, transparency, and sustainability to strengthen the ecosystem.

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