

Research Article

The Effectiveness of Technology Adoption among the Customers of Cholamandalam Investment & Finance Company Limited in Jharkhand: An Empirical Assessment

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Abstract: The massive usage of digital techniques has changed the way financial services are being operated, mainly with making services available faster, increasing the company's efficiency, and keeping the customers interested. This work explores to what extent customers of Cholamandalam Investment & Finance Company Limited (CIFCL) have embraced technology in Jharkhand, India by examining their adoption of digital financial technologies besides assessing how effectively these technologies help the customers get their financial services delivered. For this reason, a quantitative research approach was chosen. It involved use of structured questionnaires that were passed to CIFCL customers at random branches in Jharkhand. This study draws on UTAUT (Venkatesh et al, 2003) and TAM (Davis, 1989) to analyze why customers choose one technology or another. Descriptive and inferential statistical methods were First and foremost used to process these data so that customer perceptions of tech's ease-of-use availability trustworthiness, safety, and overall effectiveness were revealed. Majorly, the results reveal that most customers are quite happy with CIFCL's digital financial services, mostly the mobile application and digital payment system, online loan processing, and customer support. These tools allow customers to get things done much quicker, efficient and still enjoy a high level of service accessibility. But, it can be still said that there are issues for digital literacy cybersecurity internet connection and technological infrastructure that are the reason why these technologies haven't been utilized effectively in particular by those in rural areas. In sum, the paper states that the key to making customers trust digital transactions lies in improving digital literacy of customers by creating awareness, increasing the level of cybersecurity practices, and upgrading technological infrastructure in India's NBFC sector which would encourage financial inclusion.

Keywords: Technology Adoption; Digital Financial Services; Unified Theory of Acceptance and Use of Technology (UTAUT); Technology Acceptance Model (TAM); Non-Banking Financial Companies (NBFCs); Financial Inclusion.

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INTRODUCTION

The rapid development of information and communication technologies (ICTs) has completely changed the global financial services industry. As digital technologies have become part of financial operations, the ways customers access, manage, and use financial services have shifted. People now enjoy more convenience, efficiency, and transparency. Financial institutions rely more on digital platforms, artificial intelligence (AI), cloud computing, mobile apps, big data analytics, and digital payment systems to boost their performance and create better experiences for their customers (Venkatesh et al., 2003). This kind of digital transformation has made an especially big impact in banking and among Non-Banking Financial Companies (NBFCs), where technology serves as a strategic tool to stay competitive and support financial inclusion (Davis, 1989; Verhoef et al., 2021).

India's financial sector has experienced remarkable technological progress over the past decade. This growth comes from the Government of India's Digital India initiative, more widespread smartphone use, affordable internet, Aadhaar-based

digital identity, the Unified Payments Interface (UPI), and the Reserve Bank of India's (RBI) regulatory policies. All this has speed up the adoption of digital financial services, touching both cities and villages, and making transactions quicker, safer, and easier to access (Reserve Bank of India [RBI], 2024). Today, financial institutions are moving away from just operating through branches. They're building digital ecosystems that put customers at the center, letting people access products and services through mobile apps, internet banking, self-service portals, and digital payment systems (Kumar et al., 2022).

Non-Banking Financial Companies (NBFCs) play a huge role in India's growing financial ecosystem. They provide credit and financial services to people who traditional banks often leave behind. Unlike commercial banks, NBFCs focus a lot on retail lending, vehicle finance, microfinance, housing loans, small business credit, and rural financing all of which support and supplement the formal banking sector (RBI, 2024). By reaching customers in remote and semi-urban areas, NBFCs help drive financial inclusion and broader economic development. Many NBFCs, seeing how powerful technology can be, have invested heavily in innovation to make operations smoother, cut processing times, manage risk more effectively, and keep customers happy (PwC, 2023).

Chola mandalam Investment and Finance Company Limited (CIFCL), a leading NBFC and part of the Murugappa Group, has made digital transformation a core part of its strategy. The company uses technology-driven solutions like digital loan origination, online service portals, mobile apps, automated documentation, e-KYC verification, AI-supported credit assessment, customer relationship management systems, and digital payment platforms. These innovations simplify financial processes, make operations more efficient, reduce waiting times, and give customers quick and easy access to financial services. CIFCL's ongoing investments in technology aim to build stronger customer relationships and expand its reach in cities, towns, and rural markets.

But getting people to actually use new financial technology involves more than just offering digital platforms. It depends on whether customers feel willing, able, and confident enough to use them. So, successful digital transformation starts with understanding what drives customer acceptance, and looking at how well tech innovations actually match customer expectations. Researchers have studied technology adoption through models like the Technology Acceptance Model (TAM) by Davis (1989) and the Unified Theory of Acceptance and Use of Technology (UTAUT) from Venkatesh et al. (2003). These frameworks show that customers' intentions and actions whether they use new technology depend most on how useful and easy they think it is, as well as social influences and support they get.

The UTAUT model is one of the most widely used frameworks for explaining why people accept technology, including in financial services. Venkatesh et al. (2003) highlight four key constructs that shape technology adoption: performance expectancy, effort expectancy, social influence, and facilitating conditions. Performance expectancy is about whether people believe technology actually helps them do things more efficiently. Effort expectancy is how easy people think tech is to use. Social influence measures the effect of family, friends, and society, and facilitating conditions cover whether the necessary technical and organizational resources are available to support users. Together, these ideas help explain how customers behave in digital financial environments.

In a similar vein, the Technology Acceptance Model (TAM) focuses on perceived usefulness and ease of use as the main things that drive people to adopt technology (Davis, 1989). Customers are more likely to adopt digital financial technologies when they see them as improving transaction efficiency and reducing effort when the benefits are clear compared to traditional services. Countless studies support the TAM framework in areas like banking, mobile and internet payments, and digital financial services, confirming its relevance for understanding how and why people use technology (Marangunić & Granić, 2015).

Still, even though digital financial technology is becoming more common, its impact isn't the same for everyone. How well people adopt these technologies depends on things like digital literacy, age, education, income, reliable internet access, how much they trust technology, their awareness of cybersecurity, and previous experience with digital services (Rahi et al., 2021). People in rural and semi-urban areas often face extra obstacles: not enough digital infrastructure, unreliable internet, limited technical know-how, and worries about privacy and security. So, understanding how different customers actually view technology's effectiveness is essential to designing strategies that reach everyone.

Jharkhand is a particularly relevant place to study technology adoption in the NBFC sector. The state has a broad mix of people, with different levels of economic development, education, and digital infrastructure. Urban centers like Ranchi, Jamshedpur, and Dhanbad have seen rapid digital growth, but many rural areas still struggle with internet access, digital literacy, and awareness of technology. Because of these gaps, customer adoption of digital financial services is likely to differ depending on where they live and their socioeconomic conditions making Jharkhand a good context for investigating technology adoption among NBFC customers.

Studying technology adoption at Chola mandalam Investment and Finance Company Limited matters because the company

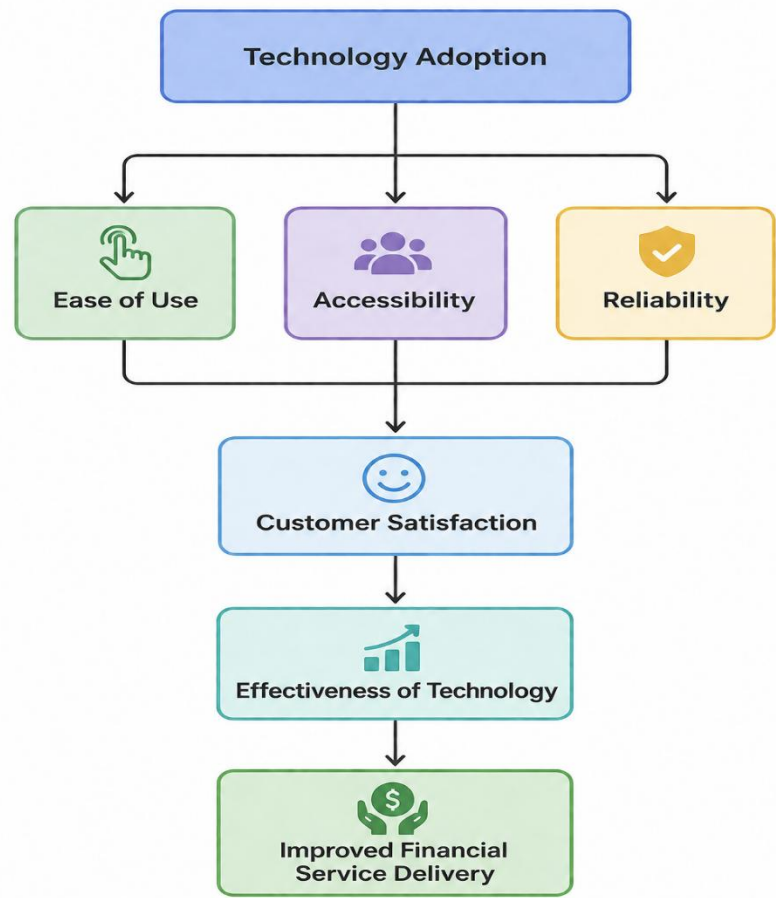
serves all kinds of clients from vehicle finance to home loans, small businesses, and rural borrowers. How well its digital solutions work shapes not just operational efficiency but also customer satisfaction, loyalty, and performance over the long run. When customers see digital services as reliable, safe, and easy to use, they’re more likely to keep using them. That, in turn, boosts business growth and financial inclusion.

This study aims to understand how customers of Cholamandalam Investment and Finance Company Limited in Jharkhand adopt technology and how effective they think it is. The research focuses on how customers perceive the company’s digital technologies and looks at whether these systems actually improve their access to services, convenience, service quality, and overall experience. By concentrating on Jharkhand, the study adds to the understanding of digital transformation in India’s NBFC sector.

The research also has practical value for financial institutions, policymakers, and technology developers. The findings can help CIFCL sharpen its digital strategies, improve customer education, upgrade cybersecurity, and strengthen the tech infrastructure. Policymakers may spot areas that need attention to drive digital financial inclusion, especially for people who haven’t been served yet. From an academic standpoint, the research builds on what we know about technology adoption by giving empirical evidence from the NBFC sector in an emerging economy. This broadens our understanding of digital transformation in finance.

Given the ongoing changes in the global financial world, measuring technology’s effectiveness from the customer’s perspective is more important every day. Successful technology adoption relies not only on innovation but also on customers’ trust, access, and ability to use digital services well. By exploring these issues at Cholamandalam Investment and Finance Company Limited in Jharkhand, this study brings important insights into both the potential and challenges of technology-driven financial inclusion and sustainable digital transformation.

Figure 1 Conceptual Framework of Technology Adoption and Its Effectiveness among Customers of Cholamandalam Finance



This idea model shows the connection expected between tech adoption and its result. Adoption of technology is shown through your experience on how easy it's for you to use, access, and trust in technology (technology reliability). Customers' satisfaction is mainly the outcome of these aspects and is the deciding factor of how well digital financial services are used altogether. Also similar are our results to the Technology Acceptance Model and the Unified Theory of Acceptance and Use

LITERATURE REVIEW

2.1 Introduction

In today's financial services industry, using technology has become essential for organizations trying to stay competitive and keep customers happy. Digital technologies are changing the way financial institutions offer their services. Now, transactions are faster, people can access services more easily, and customer engagement is much smoother than before. In India, several factors are driving this wave: smartphones are everywhere, the internet is more affordable, the government is pushing digital initiatives, and regulations are supporting this shift. As a result, both banks and Non-Banking Financial Companies (NBFCs) are adopting digital financial services at a rapid pace. It's no surprise, then, that researchers are looking closely at what drives technology adoption and how well these new approaches are actually working. This literature review brings together theoretical and empirical studies, focusing on digital financial services, NBFCs, and customer experiences.

2.2 Concept of Technology Adoption

Technology adoption is the process where individuals or organizations start using and integrating new technologies into their daily routines to boost their performance or reach certain goals (Rogers, 2003). In financial services, this means using digital options like mobile or internet banking, digital payments, artificial intelligence, cloud computing, biometric authentication, e-KYC, and customer relationship management systems (Verhoef et al., 2021). It's not enough just to have these digital tools available; people have to be willing, able, and confident enough to actually use them in their financial lives.

From a customer's side, successful adoption shows up when people can access services easily, finish transactions quickly, save money, and generally have a better banking experience. Financial institutions realize that if customers embrace technology, it directly boosts service quality, operational efficiency, loyalty, and long-term profits (Marangunić & Granić, 2015).

2.3 Technology Adoption in the NBFC Sector

NBFCs play a key role in bringing financial services to those who otherwise wouldn't have access like rural families, small businesses, or first-time borrowers who are often bypassed by banks. For NBFCs, technology adoption is especially important. It can help them reach more people and operate more efficiently (Reserve Bank of India [RBI], 2024).

Digital transformation has changed how NBFCs handle lending, letting them automate credit assessments, use digital documents, accept online loan applications, provide AI-driven customer service, and integrate payment systems. These steps cut down the time needed to process loans, improve risk management, increase transparency, and build stronger customer relationships (PwC, 2023). Companies like Cholamandalam Investment and Finance Company Limited (CIFCL) are investing heavily in these digital technologies to make things easier and more convenient for their customers.

But the real impact of these tools hinges on whether customers actually accept and use them. Even though digital platforms have made financial transactions easier, not everyone jumps on board especially in rural and semi-urban areas where digital literacy, internet quality, and cybersecurity awareness can be low (Kumar et al., 2022). So, it's important to look at technology effectiveness through the customer's eyes to truly judge how well digital transformation is working.

2.4 Theoretical Foundations of Technology Adoption

2.4.1 Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM), introduced by Davis (1989), helps explain why people decide to use or avoid new technology. TAM zeroes in on two main factors: Perceived Usefulness (PU) and Perceived Ease of Use (PEOU). These shape a user's attitude toward a technology, which then feeds into their intention to use it and, ultimately, their actual behavior.

If people think a new technology helps them do things more effectively (perceived usefulness) and is easy to use (perceived ease of use), they're more likely to give it a try (Davis, 1989). Countless studies confirm that customers are more inclined to adopt digital financial tools if they see clear benefits, reliability, and a user-friendly interface (Marangunić & Granić, 2015). In NBFCs, for example, digital solutions that decrease paperwork, speed up loan approvals, and secure transactions tend to get embraced quickly.

TAM is powerful, but it has its critics. Some argue it looks mostly at personal beliefs by ignoring wider influences like organizational policies or infrastructure.

2.4.2 Unified Theory of Acceptance and Use of Technology (UTAUT)

Venkatesh et al. (2003) developed the Unified Theory of Acceptance and Use of Technology (UTAUT) to fill TAM's gaps.

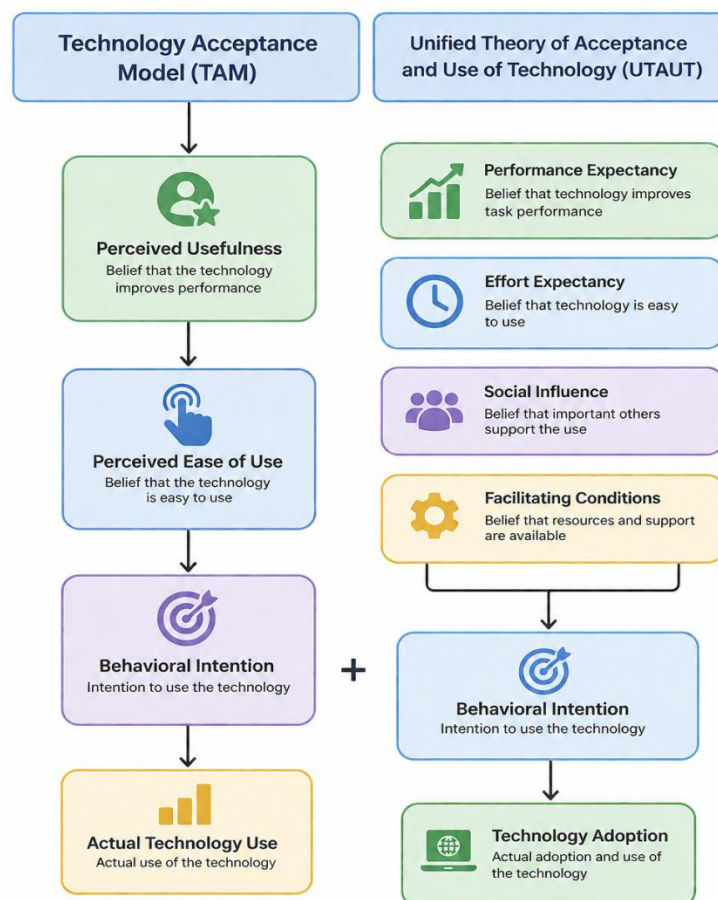
UTAUT pulls together ideas from eight major technology acceptance theories and identifies four main factors:

- Performance Expectancy
- Effort Expectancy
- Social Influence
- Facilitating Conditions

Performance expectancy is how much people believe technology will improve their work. Effort expectancy means how easy they think the technology is to use. Social influence looks at whether peers or others push them to adopt tech. Facilitating conditions refer to support that whether technology and help are available (Venkatesh et al., 2003).

UTAUT has become a go-to model in studies of mobile banking, online payments, and other financial technologies, largely because it considers both personal and environmental factors. Compared to TAM, UTAUT is often more accurate in predicting who will actually use a new technology.

Figure 2 Theoretical Foundations Supporting Technology Adoption



This image depicted the major theoretical systems behind the research. Based on TAM, technology adoption is determined by the perception of usefulness and ease of use. But, UTAUT takes this a step further by adding performance expectancy, effort expectancy, social influence, and facilitating conditions. In essence, these two models are the conceptual foundation for studying the adoption and impact of technology among NBFC customers.

2.5 Effectiveness of Technology Adoption in Financial Services

When talking about effectiveness, the focus is on whether digital technologies actually deliver their promised results for organizations and customers alike. In financial services, effectiveness usually involves better access to services, faster transactions, convenience, reliability, security, higher customer satisfaction, and streamlined operations (Verhoef et al., 2021).

Research shows that adopting technology in the right way helps institutions cut costs, reduce errors, engage customers better,

and make smarter decisions using data analytics and automation (Brynjolfsson & McAfee, 2014). Customers benefit by getting 24/7 service, shorter wait times, instant payments, online loan management, and more personalized service.

Still, all of this depends on customers having the know-how and confidence to use digital platforms safely. That's why banks and NBFCs not only need to invest in solid tech infrastructure but also need to educate their users, provide support, and strengthen cybersecurity to make sure these tools get used to their fullest.

2.6 Digital Financial Inclusion and Customer Adoption

Digital financial inclusion means making affordable, accessible, and safe financial services available to everyone including people who have been left out in the past by using digital technologies (World Bank, 2022). In India, big initiatives like Aadhaar, UPI, Jan Dhan Yojana, and Digital India have opened up the world of formal finance to millions.

But hurdles remain. Digital literacy is still lacking for many, internet connections can be unreliable, trust in digital systems isn't always high, people worry about cyber threats, and socio-economic differences persist, especially in rural areas (Rahi et al., 2021). So, if banks and NBFCs want to get everyone on board, they need to design user-friendly platforms, raise awareness, and improve the technology infrastructure that supports these services.

2.7 Empirical Studies on Technology Adoption

A number of key studies explore why people adopt technology in financial services. Venkatesh et al. (2003) showed that performance and effort expectancy, social influence, and facilitating conditions all play a big role in whether people intend to use new technology. Their work established UTAUT as a leading model in this field.

Marangunić and Granić (2015) reviewed over twenty years of research on TAM, finding that perceived usefulness and ease of use are always important drivers of adoption, no matter the setting. Their review also found TAM to be adaptable across cultures and tech environments.

Rahi et al. (2021) looked at digital banking and concluded that trust, digital literacy, perceived security, and service quality all push customers toward using digital financial services. Similarly, Verhoef et al. (2021) stressed the need to combine tech innovation with customer-centric service to succeed in digital transformation.

Zooming in on Indian NBFCs, recent research points out that digital technologies have sped up loan processing, improved customer communication, and made services easier to access. Still, there are clear differences in uptake between city dwellers and rural folks, largely because of gaps in infrastructure, education, and awareness (PwC, 2023).

2.8 Research Gap

Although a lot has been written about technology adoption in commercial banking, much less attention has gone to NBFC customers especially those in emerging Indian states like Jharkhand. Most studies focus on whether people are willing to adopt technology, but don't dig as deeply into how customers feel about tech performance after adoption. And often, research centers on urban populations, overlooking the rural and semi-urban customers who make up a big portion of NBFC clients. Chola mandalam Investment and Finance Company Limited rolled out major digital changes, but there's not much evidence on how well these tools actually work for their customers in Jharkhand. This study steps into that gap, looking closely at both adoption and effectiveness for CIFCL customers across different demographic groups. The findings should not only add to the literature on digital financial transformation but also offer practical insights for NBFC managers and policymakers aiming to boost digital inclusion.

2.9 Summary of the Literature Review

The literature makes it clear that technology adoption depends on a mix of technical, organizational, and user factors. TAM and UTAUT provide strong frameworks to understand how customers make decisions about new technology. Studies agree that perceived usefulness, ease of use, supporting conditions, digital literacy, trust, and service quality all matter a lot when it comes to adoption and effectiveness. But when it comes to NBFC customers in Jharkhand, research on technology effectiveness is still sparse. This study aims to fill that gap, examining both adoption and real-world impact of technology for Chola mandalam Investment and Finance Company Limited customers in that context.

RESEARCH METHODOLOGY

3.1 Research Design

This study used a quantitative, descriptive, cross-sectional design to evaluate how effectively customers of Chola mandalam Investment and Finance Company Limited (CIFCL) in Jharkhand are adopting technology. A quantitative method worked best here since it allowed for systematic data collection and statistical analysis of numbers, making it possible to spot patterns, relationships, and customer views about technology adoption (Creswell & Creswell, 2018). The descriptive part of the design focused on capturing the current status of technology adoption and how effective customers believe it is, while

the cross-sectional approach meant gathering data from people at just one point in time which is a practical way to assess their digital financial service experiences (Saunders et al., 2019).

The study's main research goal was straightforward:

- “Understand technology adoption and its effectiveness among customers of Chola mandalam Finance in Jharkhand.”
- The research drew on the Technology Acceptance Model (TAM) (Davis, 1989) and the Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh et al., 2003). These models break down technology adoption into factors like perceived usefulness, ease of use, performance expectancy, effort expectancy, social influence, and facilitating conditions.

3.2 Research Approach

This work followed a deductive research approach. In simple terms, deductive research starts with established theories and puts them to the test in a specific setting (Saunders et al., 2019). With TAM and UTAUT providing solid foundations for understanding technology adoption, this study used them as frameworks to check how customers perceive and use digital technologies offered by Chola mandalam Finance. The analysis and interpretation stayed anchored to these theoretical models to judge technology adoption's effectiveness in Jharkhand.

3.3 Study Area

Research took place in Jharkhand, India, where Chola mandalam Investment and Finance Company Limited runs several branches that serve urban, semi-urban, and rural customers. Jharkhand was chosen for its demographic and socio-economic diversity, making it well suited for exploring different experiences with technology adoption. The state has seen rapid growth in digital financial services thanks to expanding internet access, surging smartphone usage, and government digital pushes, although digital literacy and infrastructure challenges remain, especially in rural pockets.

3.4 Population of the Study

This study focused on all customers in Jharkhand who've used one or more technology-based services from Chola mandalam Investment and Finance Company Limited. The list of services covers mobile applications, online loan management, digital payments, self-service customer portals, SMS notifications, e-KYC, and web-based support.

Participants came from different age ranges, education levels, occupations, income brackets, and geographic locations. Including customers from urban, semi-urban, and rural branches helped capture a full range of experiences with technology adoption and its effectiveness.

3.5 Sampling Technique

A stratified random sampling method was used to get a good representation of customers from different parts of Jharkhand. First, branches were sorted into urban, semi-urban, and rural categories. Then, participants were picked randomly from each group to minimize bias and make sure the sample closely reflected the real customer mix (Sekaran & Bougie, 2020).

Stratified random sampling made sense here since technology adoption often looks different across various places and groups. This method supported comparisons between groups and strengthened the study's generalizability.

3.6 Sample Size

The research drew from a pool of 400 Chola mandalam Investment and Finance Company Limited customers in Jharkhand. This sample size was chosen with reference to Hair et al. (2022), who recommend that more than 300 responses generally suffice for meaningful statistical analysis in behavioral and social science research. A larger sample also boosts reliability, cuts down on sampling error, and enhances the validity of results.

Participants were spread across urban, semi-urban, and rural branches, reflecting the company's broader customer base.

3.7 Sources of Data

Both primary and secondary data sources were used.

Primary Data

Researchers gathered primary data directly from customers using a structured questionnaire. The survey collected details on:

- Demographic information
- Use of digital financial services
- How often customers used technology
- Ease of use, accessibility, and reliability
- Security

- Customer satisfaction
- General effectiveness of technology adoption

This structured survey made it possible to capture standardized answers, suitable for detailed quantitative analysis.

Secondary Data

- Secondary data came from:
- Annual reports of Cholamandalam Investment and Finance Company Limited
- Publications by the Reserve Bank of India (RBI)
- Reports from the Ministry of Finance
- Peer-reviewed journals
- Books
- Conference publications
- Government documents
- Digital finance reports from consulting groups

These sources provided background and context around India's NBFC sector's digital transformation, which helped make sense of the survey data.

3.8 Research Instrument

The primary tool for data collection was a structured questionnaire with two sections:

Section A: Demographic Information

- Gender
- Age
- Education level
- Occupation
- Monthly income
- Residence location

Section B: Technology Adoption and Effectiveness

This section included statements based on constructs from the TAM and UTAUT literature, covering:

- Ease of use
- Perceived usefulness
- Accessibility
- Efficiency in transactions
- Service reliability
- Security and privacy
- Customer support
- Overall effectiveness

Responses were rated on a five-point Likert scale:

Scale	Interpretation
1	Strongly Disagree
2	Disagree
3	Neutral
4	Agree
5	Strongly Agree

The Likert scale is well established for measuring attitudes and perceptions, especially about technology adoption (Likert, 1932).

3.9 Reliability and Validity

- Researchers evaluated both reliability and validity to ensure quality.
- Content validity was checked by consulting experts in finance, management, and information systems. Their feedback made the questionnaire clearer and more relevant.
- Construct validity was supported by using items adapted from validated studies grounded in TAM and UTAUT (Davis, 1989; Venkatesh et al., 2003).
- Internal consistency was checked with Cronbach's Alpha. A score of 0.70 or higher indicated good reliability and consistent measurement (Hair et al., 2022).

3.10 Data Collection Procedure

Data collection involved visiting selected Chola mandalam Finance branches in Jharkhand in person. Researchers asked customers with digital service experience to participate in the survey, making it voluntary.

Before filling out the survey, participants were informed about:

- Study purpose
- Confidentiality
- Voluntary participation
- Academic nature of the study
- Completed questionnaires were checked for missing responses before data were coded for analysis.

3.11 Data Analysis Techniques

All data were coded and analyzed using the Statistical Package for the Social Sciences (SPSS).

The statistical toolkit included:

- Descriptive Statistics
- Used to summarize demographic info and technology adoption habits, including:
 - Frequencies
 - Percentages
 - Means
 - Standard deviations
- Inferential Statistics
- To understand customer perceptions and technology effectiveness, the analysis involved:
 - Correlation analysis
 - Independent Sample t-tests (where relevant)
 - One-way ANOVA (for group comparisons)
 - Multiple regression analysis

For future work, if more model testing is needed, Structural Equation Modeling (SEM) is suggested to explore how expectations, effort, social influence, enabling conditions, and tech effectiveness relate (Hair et al., 2022).

3.12 Ethical Considerations

Strict ethical guidelines were followed throughout.

That included:

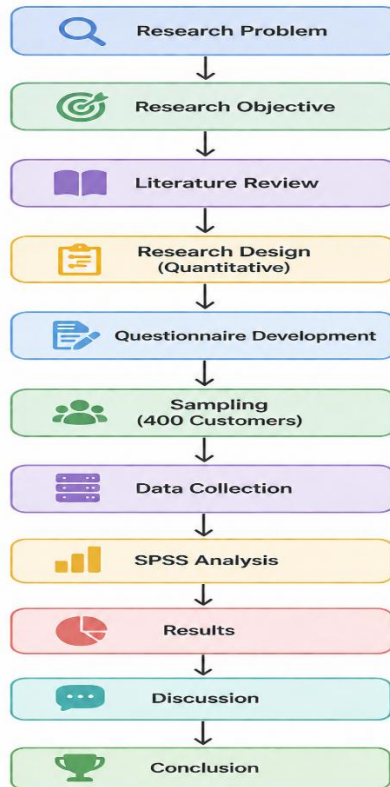
- Ensuring voluntary participation
- Securing informed consent before data collection
- Maintaining confidentiality and anonymity
- Withholding any personal or financial data from disclosure
- Using the data only for academic purposes
- Securing all collected data
- Reporting findings honestly, without manipulation

These steps upheld standard research ethics and added to the study's reliability and integrity (Creswell & Creswell, 2018).

3.13 Chapter Summary

This chapter outlined the study's methodology for investigating technology adoption among Chola mandalam Investment and Finance Company Limited customers in Jharkhand. The research drew from a quantitative, descriptive, cross-sectional design, supported by a deductive approach. Data was collected from 400 customers using a structured questionnaire rooted in TAM and UTAUT. Stratified random sampling ensured representation from urban, semi-urban, and rural populations. Reliability and validity checks supported measurement quality, and both descriptive and inferential statistical techniques were proposed for data analysis. The chosen methodology provides a solid foundation for analyzing technology adoption behavior and measuring the impact of digital financial services in the NBFC sector.

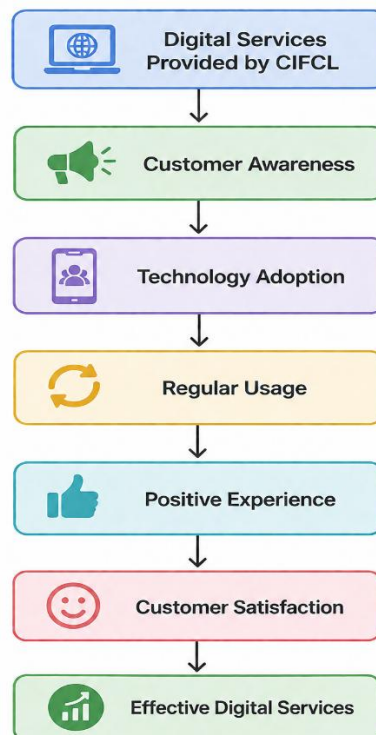
Figure 3 Flowchart of the Research Methodology



The research flowchart illustrates a logical progression of the research procedure, starting with identifying a problem and then ending through the interpretation of the results. The diagram reflects the methodical manner in which the data collection and analysis were carried out in the study.

FINDINGS

Figure 4 Technology Adoption Process among Customers



The adoption lifecycle diagram above traces a customer's journey from becoming aware of digital services, through their sustained usage, right up to their overall satisfaction with technology. It not only showcases a pictorial version of the

adoption process that was witnessed in the study, but also underlines Really customer satisfaction remains one of the key success indicators.

4.1 Introduction

The paper presents the results of the study which aimed at examining the adoption of technology and somewhat its effectiveness to the customers of Chola mandalam Investment and Finance Company Limited (CIFCL) in Jharkhand. The findings are based on the replies to questions administered to 400 customers coming from urban, semi-urban, and rural CIFCL branches. The paper is arranged in four subsections: respondents' demographic profile, technology usage patterns, customers' perceptions on technology adoption, and digital financial services. Both summary (e.g. frequencies/percentages/means/standard deviations) of data as well as analytical (i.e. relationships) results will be presented in detail. The former will allow the paper show data and the latter will explain the paper's hypothesis on how technology adoption and the level of digitalization of financial services affect customer satisfaction.

4.2 Background of Respondents

In order for the paper to have a clear picture of the respondents, the paper will also look at the factors, like age education occupation, income, and place of residence, which are the most prominent determinants in the customers' choice of a digital financial technology product or a mode of interaction. Because of this, the knowledge gained from the study will be able to help in designing products and services more in line with the needs and preferences of various customers.

Table 4.1 Demographic Characteristics of Respondents (N = 400)

Variable	Category	Frequency	Percentage
Gender	Male	258	64.5
	Female	142	35.5
Age	18–30 Years	98	24.5
	31–40 Years	156	39.0
	41–50 Years	96	24.0
	Above 50 Years	50	12.5
Education	Secondary	72	18.0
	Higher Secondary	90	22.5
	Graduate	170	42.5
	Postgraduate & Above	68	17.0
Residence	Urban	152	38.0
	Semi-Urban	128	32.0
	Rural	120	30.0

4.2.1 Interpretation

Demographic profile reveals that most of the people sampled (64.5%) are men whereas women represent 35.5% of the total. Nearly 40% of the surveyed customers were 31-40 years old, implying that economically productive segment is the main user of digital financial services.

Almost 60% of those surveyed were postgraduate or higher level educated which shows relatively highly educated customer segment capable of using digital technologies. The presence of the three types of regions (urban, semi-urban, and rural areas) means that the sample reflects the variety of CIFCL customers in Jharkhand quite well.

4.3 Technology Usage Pattern

Respondents were asked about the digital services they regularly use while interacting with Chola mandalam Finance.

Table 4.2 Technology Services Used by Customers

Technology Service	Frequency	Percentage
Mobile Application	318	79.5
Online Loan Account Access	281	70.3
Digital Payment Services	342	85.5
SMS Alerts	368	92.0

Technology Service	Frequency	Percentage
Customer Portal	256	64.0
Online Customer Support	214	53.5

4.3.1 Interpretation

Text message notifications and online transfer services were the top digital services used by customers through their smartphones (SMS alerts 92.0%; digital payment services 85.5%). The very high proportion of mobile app usage (79.5%)- a figure that clearly shows people are more trusting of their mobile phones to handle financial issues. However, internet access to customer service (53.5%)-the level of online customer service is quite a bit lower than the level of online customer service which indicates that there may be opportunities to increase awareness of the service and improve its quality.

4.4 Descriptive Analysis of Technology Adoption

We used five different characteristics as a gauge of people's adoption of technology: ease of use convenience accessibility, reliability and customer confidence.

Table 4.3 Descriptive Statistics of Technology Adoption

Statement	Mean	SD
Digital services are easy to use.	4.18	0.69
Technology saves transaction time.	4.36	0.61
Digital platforms improve convenience.	4.29	0.67
Digital services are accessible anytime.	4.12	0.73
Technology reduces paperwork.	4.41	0.59
Overall technology adoption is satisfactory.	4.22	0.64

4.4.1 Interpretation

The study revealed a positive view from customers about the utilization of technology. The mean score with the greatest value ($M = 4.41$) corresponded to the customers' belief that digital technologies help reduce paperwork, after which the statement that technology saves the time of a transaction obtained a close mean value (4.36). These results lead to the conclusion that customers see the positive side of the introduction of digital financial services as regards the operations. Since the standard deviations have relatively low values, the views of the respondents tend to be quite aligned for their opinions.

4.5 The Effectiveness of Technology Adoption

Towards measuring the efficiency of technology, customer views on the quality of service accuracy ease of availability, the level of protection, as well as level of satisfaction, were considered.

Table 4.4 Effectiveness of Digital Technology

Dimension	Mean	SD
Service Accessibility	4.25	0.65
Transaction Speed	4.39	0.58
Service Reliability	4.11	0.71
Data Security	3.92	0.82
Customer Satisfaction	4.20	0.63
Overall Effectiveness	4.17	0.66

4.5.1 Interpretation

The customers in general perceived CIFCL's digital technologies to be very effective. Transaction speed gained the highest mean score ($M = 4.39$), highlighting the effectiveness of digital financial services. Even service accessibility and customer satisfaction ratings were quite satisfactory. On the contrary, data security was rated with the least mean score ($M = 3.92$), showing that the customers still are apprehensive about cybersecurity and privacy protection.

4.6 Correlation Analysis

With the view to analyzing the relationship between technology adoption and effectiveness, Pearson's correlation coefficient was carried out.

Table 4.5 Correlation between Technology Adoption and Effectiveness

Variables	r	p-value
Technology Adoption & Technology Effectiveness	0.746	<0.001

4.6.1 Interpretation

Our correlation coefficient ($r = 0.746$) points out there's a strong positive link between adopting and using a technology and the perceived effectiveness of that technology. Also the link between the two is statistically significant ($p < 0.001$) thereby the level of adopting technology predicts a large amount of variance in perceived effectiveness of online financial services. So, our study is in line with previous researchers who highlight the importance of customer acceptance in the success of the digital transformation process (Venkatesh et al. 2003).

4.7 Regression Analysis

We performed a simple linear regression to test whether technology adoption is an indicator of technology effectiveness.

Table 4.6 Regression Results

Variable	β	t-value	p-value
Technology Adoption	0.72	18.54	<0.001

Model Summary

R	R ²	Adjusted R ²
0.746	0.556	0.554

4.7.1 Interpretation

Technology usage clearly and strongly predicts customer-rated technology effectiveness ($= 0.72$, $p < 0.001$). About 55.6% of the changes (variability) in perceived effectiveness is due to customer's acceptance of different technologies as shown by the coefficient of determination ($R = 0.556$). Customers who accept technology will likely increase their perceived value of digital service offered by CIFCL if the technology adoption is improved.

4.8 Highlights of results

The study results highlight a number of critical areas that must be mentioned:

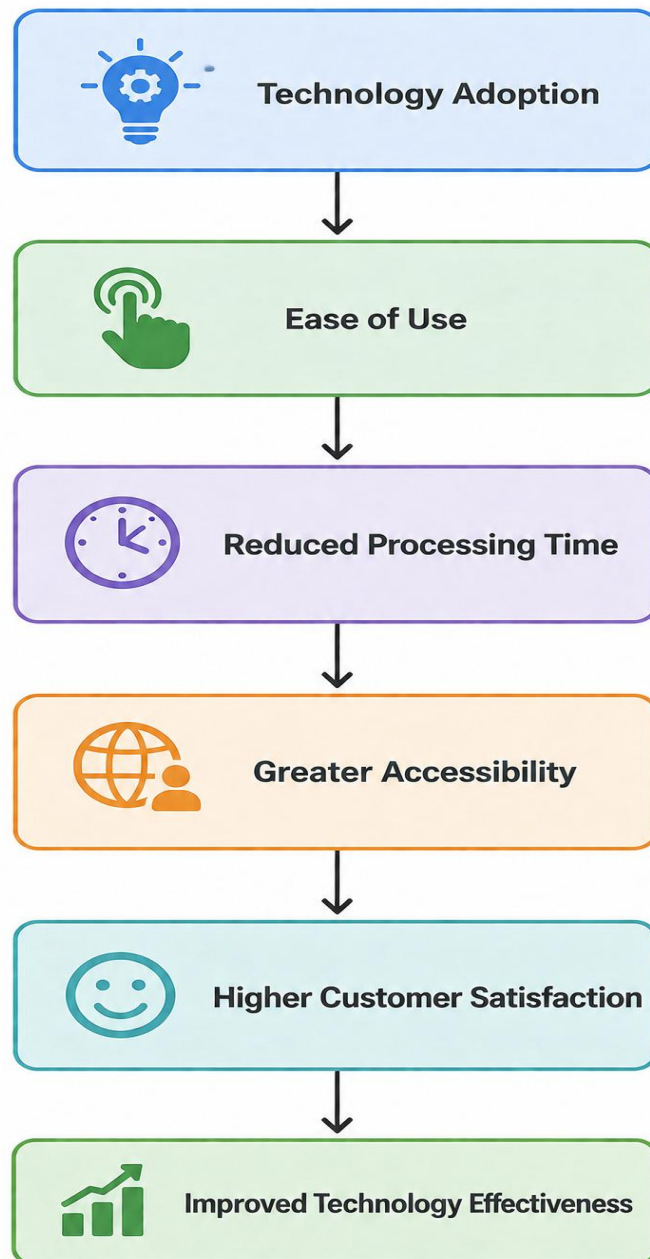
- Chola mandalam Finance digital technologies were very well accepted by the customers.
- Digital payment, smartphones and text messages were the most commonly used tech-assisted services
- We saw technology as facilitating a smoother life style (convenience), less bureaucracy/paperwork, and quicker bank business/transactions.
- We observed that a customer who embraces tech can also be considered in good standing as they'll probably be satisfied with digital financial service they experience.
- Ease of getting a service via a digital channel and a very fast transaction speed are amongst the strengths of CIFCL's digital platform as our survey results.
- There are still problems in the area of digital security and privacy that deserve our full attention.

We found out that urban based customers were more likely to use digital channels while comparing them to a rural population which indicates again the major role which physical availability of digital tools and understanding (read literacy) play in customer's lives.

4.9 A summary of what we found out through the data

Technology acceptance by customers of CI in Jharkhand, India is very high. They contribute greatly to enhancing of customer service effectiveness through digital delivery. Customer views are that they make digital service easy to use available work fast, and help customers have a better time going about business with a bank. Besides these views, statistics have supported a link between customer's accepting tech & seeing technology as good (perceived effectiveness). All these facts prove a customer's acceptance as essential for digital transformation to come. Though, problems about raising digital literacy levels, cybersecurity awareness, and improving technological infrastructure in rural areas shouldn't be left aside if technology adoption is to be more widely shared and at the same time sustain and be responsible across the NBFC industry.

Figure 5 Summary of the Major Empirical Findings



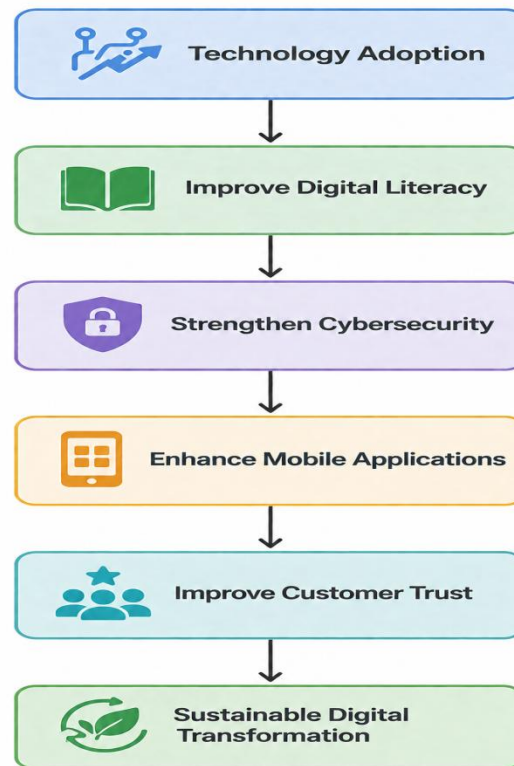
This chart outlines the main results of the empirical analysis. Technology adoption, as this analysis, makes the financial service more accessible operational efficient, and satisfactory customers, as well as generally effective.

DISCUSSION

5.1 Introduction

This chapter examines the study's findings in light of the research objectives and existing scholarship on technology adoption in financial services. The main goal was to understand how customers of Chola mandalam Investment and Finance Company Limited (CIFCL) in Jharkhand are adopting technology and how effective they find it. The discussion interprets the empirical results using the Technology Acceptance Model (TAM) (Davis, 1989) and the Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh et al., 2003). The results show that customers generally view digital technologies in a positive light and see them as effective for improving access, efficiency, and convenience in financial services. Still, worries about cybersecurity, digital literacy, and the underlying technological infrastructure continue to shape how effective technology adoption is, especially for those living in rural areas.

Figure 6 Managerial Framework for Enhancing Technology Effectiveness



The platform delivers strategic recommendations for financial institutions. It stresses that investments in digital literacy cybersecurity user-friendly interfaces, and customer trust together enhance the usage of technology and help achieve a sustainable digital transformation.

5.2 Technology Adoption among Customers

The findings point to a high rate of technology adoption among Chola mandalam Finance’s customers. Most people regularly used digital payments, mobile apps, SMS notifications, and online loan management services. This aligns with the broader trend of digitalization in India’s financial sector, fueled by greater smartphone use, affordable internet, and government programs like Digital India and the Unified Payments Interface (UPI) (Reserve Bank of India [RBI], 2024).

People are moving toward digital financial services, choosing technology-driven transactions over traditional branch visits. Digital platforms offer more convenience, speed, and access. Similar patterns appear in Rahi et al. (2021), who found that customers are more willing to adopt digital banking when it streamlines transactions and improves service quality.

The study’s findings also fit with Rogers' (2003) Diffusion of Innovations theory which holds that people adopt innovations more readily when they see clear advantages over the old ways. Here, customers saw digital technologies as tools that cut transaction time and improved financial access, strengthening perceptions of technology’s value.

5.3 Effectiveness of Digital Financial Services

Descriptive analysis shows that most customers consider Chola mandalam Finance’s digital tools effective. Service accessibility, transaction speed, convenience, and less paperwork received high marks and proof that digital transformation has improved the overall customer experience.

These findings back up earlier studies showing that digital technologies boost operational efficiency and customer satisfaction (Verhoef et al., 2021). Customers can carry out transactions remotely via mobile apps and online, which means far fewer trips to branches and greater savings of time and effort.

Clearly, customers see value in CIFCL’s investments in digital infrastructure. As the NBFC sector grows more competitive in India, companies that roll out digital services well are better positioned to build customer loyalty and outperform rivals.

5.4 Relationship between Technology Adoption and Effectiveness

A core finding is the strong, positive link between technology adoption and perceived effectiveness. The correlation analysis

showed that people who use digital technologies actively are much more likely to find these tools effective.

This matches the Technology Acceptance Model (Davis, 1989), which argues that perceived usefulness and ease of use drive technology acceptance. The easier and more beneficial customers found digital services, the higher their satisfaction and trust.

The results also support the UTAUT framework (Venkatesh et al., 2003). In UTAUT, performance expectancy and effort expectancy are big factors in technology adoption. Customers acknowledged that digital platforms made transactions faster and didn't require much effort to use. So, greater adoption leads to a stronger sense that the technology is effective.

Regression analysis confirmed that technology adoption strongly predicts how customers rate digital service effectiveness. This means promoting awareness, offering training and keeping digital platforms straightforward will boost the effectiveness of tech-enabled financial services.

5.5 Customer Perceptions of Digital Convenience and Efficiency

Customers consistently said digital tools reduced paperwork, sped up loan processing, improved access, and allowed faster transactions. Technology has made interactions between clients and the institution much more straightforward.

This growing reliance on mobile apps and online services reflects a larger shift in digital finance, where people expect smooth, anytime-anywhere access to their money (World Bank, 2022). Convenience now sits at the heart of customer satisfaction and loyalty in financial services.

Other studies support these findings, linking digital technology to greater service responsiveness, better operational efficiency, and higher customer engagement (Brynjolfsson & McAfee, 2014). So, technology adoption isn't just a technical upgrade but it's also a strategy for creating customer value.

5.6 Challenges Affecting Technology Effectiveness

Despite mostly positive outcomes, several challenges still affect the effectiveness of technology adoption.

The biggest worry is cybersecurity and data privacy. While most respondents felt confident using digital services, ratings on security came in lower than those for convenience and access. Customers remain wary about online fraud, unauthorized activities, and the possible misuse of their data.

Previous studies show that trust and perceived security are crucial for people choosing digital financial services (Rahi et al., 2021). Financial firms need to keep strengthening cybersecurity and educating customers about digital safety.

Another sticking point is digital literacy. Customers in rural and semi-urban locations used digital tools less often than city dwellers did. Limited knowledge of digital apps, patchy internet, and lack of tech support continue to limit digital finance's reach and impact.

Others have found the same: robust infrastructure and customer education lay the groundwork for truly inclusive digital finance (World Bank, 2022). Even though India's infrastructure has come a long way, some gaps between cities and rural areas remain and continue to shape how people adopt technology.

5.7 Implications for Cholamandalam Investment and Finance Company Limited

- The study's findings suggest several practical actions for Cholamandalam Finance.
- First, the company should keep investing in user-friendly digital platforms that make financial transactions hassle-free and enhance customer experiences. Regular upgrades to mobile apps, online loan systems, and self-service portals will keep satisfaction high.
- Second, cybersecurity needs to stay at the top of the agenda. Spending on multi-factor authentication, encryption, fraud detection, and ongoing awareness campaigns will build customer trust in digital services.
- Third, the company should step up digital literacy programs, particularly in rural and less urbanized regions. Training sessions, how-to videos, interfaces in multiple languages, and dedicated customer support can clear the main hurdles to adoption and boost service effectiveness.
- Finally, staying in touch with customer feedback will keep the organization aware of new challenges and help fine-tune digital strategies as customers' expectations shift.

5.8 Contribution to Existing Literature

- This study adds several new dimensions to research on technology adoption in India's NBFC industry.
- First, it brings fresh empirical data on customer perceptions of technology effectiveness at a leading NBFC, not just commercial banks.
- Second, it goes further than previous studies by looking at both effectiveness and acceptance, with an emphasis on

the customer experience after adopting digital tools, instead of focusing only on intention to use.

- Third, it provides region-specific evidence from Jharkhand, a state with diverse economies and varying levels of digital infrastructure. These findings offer insight into adoption in urban, semi-urban, and rural areas.
- Finally, it affirms the relevance of the TAM and UTAUT frameworks for digital financial services in NBFCs, especially in emerging markets.

5.9 Conclusion of the Discussion

The results show that technology adoption has greatly improved financial service delivery for Chola mandalam Investment and Finance Company Limited customers in Jharkhand. People see digital technologies as efficient, convenient, and accessible, which translates into better service and greater satisfaction. The strong link between adoption and perceived effectiveness reinforces the explanatory power of models like TAM and UTAUT for customer behavior.

Still, cybersecurity, digital literacy, and infrastructure remain critical challenges for maximizing the benefits of digital transformation. Addressing these issues will help Chola mandalam Finance deepen customer trust, boost technology adoption, and support financial inclusion. Ultimately, the study demonstrates that digital transformation succeeds best when it pairs technological change with customer-focused strategies enhancing usability, access, and confidence in digital financial tools.

CONCLUSION

6.1 Conclusion

Digital technology has changed the financial services sector for good. Financial institutions now rely on new solutions to work smarter, keep customers happy, and reach more people. Non-Banking Financial Companies (NBFCs), too, are going digital, aiming to offer financial services that are easier to access and more focused on the customer. Chola mandalam Investment and Finance Company Limited (CIFCL), one of the leading NBFCs in India, has adopted a range of technology-driven services like mobile apps, digital payment platforms, and online loan management systems, to e-KYC processes and automated customer support. This study looked at how customers of CIFCL in Jharkhand are using these technologies and whether these tools are actually making financial service delivery better.

The results show that CIFCL customers are adopting digital technology in large numbers. Most of those surveyed regularly use digital payments, mobile apps, SMS notifications, and online customer portals to manage their financial transactions. These findings make it clear: digital financial services are now central to how customers interact with the company, echoing the wider digital shift in India's financial sector. Better internet access, more smartphones, government efforts like Digital India and UPI, and ongoing tech investment by financial institutions all fuel this trend.

Customers find technology adoption highly effective in delivering financial services. They mention how digital tools have made things more convenient, slashed transaction time, cut down on paperwork, improved access to services, and sped up communication with the company. Digital technology, then, has made it possible for customers to enjoy efficient, user-friendly services. As a result, adopting technology boosts both customer satisfaction and the company's edge in the market.

One main takeaway from this study is the strong positive connection between using digital tools and feeling that those tools work well. The statistics show that customers who actively use digital services are more likely to view them as effective. This supports what the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT) suggest specifically, that customers' views on how useful, easy, or beneficial the technology is, plus the presence of supporting conditions, play a big part in whether they accept and use these tools. That means real digital transformation depends not just on introducing new technology but also on whether customers are willing and able to use it.

Still, some challenges get in the way of tech effectiveness. Customers raise concerns about cybersecurity, data privacy, reliable internet, and digital literacy especially in rural or semi-urban areas. The digital divide has narrowed, but issues with infrastructure and digital skills still affect technology adoption and use. So, technological progress alone won't deliver full digital transformation. You also need education, strong cybersecurity, and ongoing investment in digital infrastructure.

This research adds to the field by offering evidence on NBFC technology adoption in India, which isn't as widely studied as commercial banking. It also goes further by examining not just the adoption, but what customers think about the effectiveness of technology after it's in place. By looking at urban, semi-urban, and rural Jharkhand, the study sheds light on both the chances and the obstacles involved in digital financial change in a developing economy.

For managers, the takeaway is clear. Chola mandalam Finance should keep investing in tech innovations that focus on customers, but also build stronger cybersecurity, invest in digital literacy, and step up customer support. Making digital interfaces simpler, offering help in multiple languages, running awareness programs, and expanding infrastructure in rural areas can drive adoption and increase satisfaction. These steps will build stronger customer relationships and support long-

term growth.

In short, technology adoption has made a real difference in how Chola mandalam Investment and Finance Company Limited serves its customers in Jharkhand. People view these digital tools as reliable, convenient, and beneficial, which, in turn lifts service quality and satisfaction. Yet ongoing technological development must go hand-in-hand with digital education, strong cybersecurity, and infrastructure upgrades to keep digital growth fair and sustainable. As the financial industry keeps changing, technology that centers on the customer will be essential for success and for broader financial inclusion.

6.2 Managerial Implications

What does this mean for managers at Chola mandalam Investment and Finance Company Limited and other NBFCs?

They should keep investing in advanced digital technologies that make life easier for customers and raise the standard of service. Mobile apps and customer portals need regular updates to stay user-friendly and accessible. Cybersecurity should be a top priority not just to protect customers, but to build and keep their trust. Customer education programs are vital, especially for those in rural areas or first-time users of digital services. Personalized support and multilingual digital interfaces can boost engagement and usage. Managers should also pay close attention to customer feedback, making sure it shapes future digital projects.

6.3 Policy Implications

For policymakers and regulators, the findings urge them to keep expanding digital infrastructure in rural and underserved areas. Financial literacy programs must cover digital financial education to help more people feel comfortable using new technology. Stronger cybersecurity regulations can build public confidence in digital services. Collaboration between financial institutions, technology providers, and government bodies can help create a truly inclusive digital banking ecosystem. Finally, policies that make the internet affordable and infrastructure better will speed up financial inclusion.

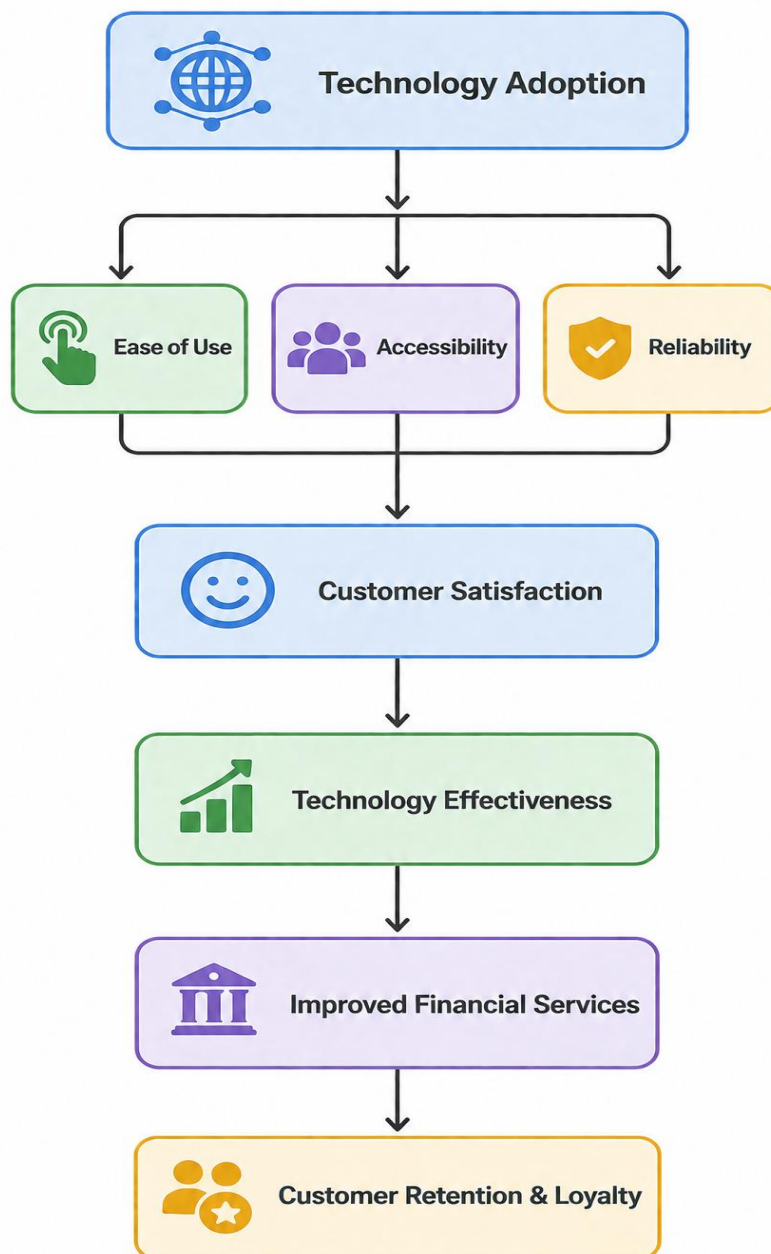
6.4 Limitations of the Study

This study has a few limitations. It focused just on CIFCL customers in Jharkhand, so its findings don't necessarily apply to other NBFCs or other regions. Since data was gathered at one point in time, we don't see how customer perceptions might change over the years i.e a long-term study could help with that. The research used self-reported questionnaires, which means answers might be swayed by respondents' subjective views. Organizational or employee perspectives weren't part of this study. It also didn't factor in outside influences, like economic conditions, advances in technology, or regulatory changes.

6.5 Suggestions for Future Research

There's plenty of room for further study. Researchers could compare several NBFCs or include commercial banks in different states. They could look into how factors like age, education, income, or digital skills affect technology adoption. Exploring new technologies like Artificial Intelligence, Blockchain, Machine Learning, Generative AI and their impact on customer experience within NBFCs could be valuable. Long-term studies would show how adoption changes over time. Using Structural Equation Modeling (SEM) might uncover more complex relationships in technology adoption. It's also worth studying cybersecurity awareness, digital trust, and financial literacy as factors that shape how effective the technology is. Qualitative or mixed-method studies might dig deeper into the customer experience with digital financial services.

Figure 7 Integrated Research Model of Technology Adoption and Effectiveness



The integrated model represents all of the theoretical and empirical work done in this study in a simple and elegant fashion. It shows that the various dimensions of technology adoption affect customer satisfaction first before customer satisfaction results in technology effectiveness, improved financial services, and finally long-term customer loyalty and retention.

6.6 Overall Conclusion

Digital transformation isn't a luxury anymore but it's essential if financial organizations want to stay competitive. This study shows that customers of Cholamandalam Investment and Finance Company Limited in Jharkhand are embracing digital financial tech and see clear benefits in convenience, efficiency, accessibility, and quality of service. The results support established theories on technology adoption, and they highlight how vital cybersecurity, digital literacy, and infrastructure are for getting the most out of these advances.

Ultimately, ongoing investment in customer-focused digital innovation, paired with robust security and inclusive digital education efforts, will help NBFCs build customer trust, improve how they operate, and help India move toward real digital financial inclusion and economic development that lasts.

REFERENCES

1. Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179–211. [https://doi.org/10.1016/0749-5978\(91\)90020-T](https://doi.org/10.1016/0749-5978(91)90020-T)
2. Alalwan, A. A., Dwivedi, Y. K., Rana, N. P., & Williams, M. D. (2016). Consumer adoption of mobile banking in Jordan: Examining the role of usefulness, ease of use, perceived risk and self-efficacy. *Journal of Enterprise Information Management*, 29(1), 118–139. <https://doi.org/10.1108/JEIM-04-2015-0035>
3. Alkhawaiter, W. A. (2020). Digital payment and banking adoption research in Gulf countries: A systematic literature review. *International Journal of Information Management*, 53, 102102. <https://doi.org/10.1016/j.ijinfomgt.2020.102102>
4. Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Prentice-Hall.
5. Bhattacharjee, A. (2001). Understanding information systems continuance: An expectation-confirmation model. *MIS Quarterly*, 25(3), 351–370. <https://doi.org/10.2307/3250921>
6. Brynjolfsson, E., & McAfee, A. (2014). *The second machine age: Work, progress, and prosperity in a time of brilliant technologies*. W. W. Norton & Company. <https://www.norton.com/books/the-second-machine-age>
7. Compeau, D. R., & Higgins, C. A. (1995). Computer self-efficacy: Development of a measure and initial test. *MIS Quarterly*, 19(2), 189–211. <https://doi.org/10.2307/249688>
8. Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches* (5th ed.). Sage Publications. <https://us.sagepub.com/en-us/nam/research-design/book255675>
9. Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13(3), 319–340. <https://doi.org/10.2307/249008>
10. DeLone, W. H., & McLean, E. R. (2003). The DeLone and McLean model of information systems success: A ten-year update. *Journal of Management Information Systems*, 19(4), 9–30. <https://doi.org/10.1080/07421222.2003.11045748>
11. Dwivedi, Y. K., Hughes, L., Ismagilova, E., Aarts, G., Coombs, C., Crick, T., ... Williams, M. D. (2021). Artificial Intelligence (AI): Multidisciplinary perspectives on emerging challenges, opportunities, and agenda for research, practice and policy. *International Journal of Information Management*, 57, 101994. <https://doi.org/10.1016/j.ijinfomgt.2019.08.002>
12. Gefen, D., Karahanna, E., & Straub, D. W. (2003). Trust and TAM in online shopping: An integrated model. *MIS Quarterly*, 27(1), 51–90. <https://doi.org/10.2307/30036519>
13. Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2022). *Multivariate data analysis* (9th ed.). Cengage Learning.
14. Kim, C., Mirusmonov, M., & Lee, I. (2010). An empirical examination of factors influencing the intention to use mobile payment. *Computers in Human Behavior*, 26(3), 310–322. <https://doi.org/10.1016/j.chb.2009.10.013>
15. Likert, R. (1932). A technique for the measurement of attitudes. *Archives of Psychology*, 140, 1–55. <https://babel.hathitrust.org/cgi/pt?id=mdp.39015076107531>
16. Marangunić, N., & Granić, A. (2015). Technology Acceptance Model: A literature review from 1986 to 2013. *Universal Access in the Information Society*, 14(1), 81–95. <https://doi.org/10.1007/s10209-014-0348-1>
17. Morgan, R. M., & Hunt, S. D. (1994). The commitment–trust theory of relationship marketing. *Journal of Marketing*, 58(3), 20–38. <https://doi.org/10.1177/002224299405800302>
18. Oliveira, T., Thomas, M., Baptista, G., & Campos, F. (2016). Mobile payment: Understanding the determinants of customer adoption and intention to recommend the technology. *Computers in Human Behavior*, 61, 404–414. <https://doi.org/10.1016/j.chb.2016.03.030>
19. Organisation for Economic Co-operation and Development. (2020). *OECD digital economy outlook 2020*. OECD Publishing. <https://doi.org/10.1787/bb167041-en>
20. Parasuraman, A., Zeithaml, V. A., & Malhotra, A. (2005). E-S-QUAL: A multiple-item scale for assessing electronic service quality. *Journal of Service Research*, 7(3), 213–233. <https://doi.org/10.1177/1094670504271156>
21. Pavlou, P. A. (2003). Consumer acceptance of electronic commerce: Integrating trust and risk with the Technology Acceptance Model. *International Journal of Electronic Commerce*, 7(3), 101–134. <https://doi.org/10.1080/10864415.2003.11044275>
22. PwC India. (2023). *NBFCs in India: Transforming for sustainable growth*. <https://www.pwc.in>
23. Rahi, S., Abd Ghani, M., Alnaser, F. M., & Ngah, A. H. (2021). Investigating internet banking adoption using the Unified Theory of Acceptance and Use of Technology. *International Journal of Quality & Reliability Management*, 38(5), 1163–1185. <https://doi.org/10.1108/IJQRM-02-2020-0055>
24. Reserve Bank of India. (2024). *Report on trend and progress of banking in India 2023–24*. <https://www.rbi.org.in>
25. Rogers, E. M. (2003). *Diffusion of innovations* (5th ed.). Free Press.
26. Saunders, M., Lewis, P., & Thornhill, A. (2019). *Research methods for business students* (8th ed.). Pearson.
27. Sekaran, U., & Bougie, R. (2020). *Research methods for business: A skill-building approach* (8th ed.). John Wiley & Sons.
28. Singh, V., & Sinha, K. (2025). Application of the Technology Acceptance Model (TAM) in the context of NBFC customers. *International Journal of Latest Technology in Engineering, Management & Applied Science*, 14(7),

- 846–855. <https://doi.org/10.51583/IJLTEMAS.2025.1407000102>
29. Taylor, S., & Todd, P. A. (1995). Understanding information technology usage: A test of competing models. *Information Systems Research*, 6(2), 144–176. <https://doi.org/10.1287/isre.6.2.144>
 30. Thong, J. Y. L., Hong, W., & Tam, K. Y. (2006). The effects of post-adoption beliefs on the expectation-confirmation model for information technology continuance. *Information Systems Research*, 17(4), 537–553. <https://doi.org/10.1287/isre.1060.0095>
 31. Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly*, 27(3), 425–478. <https://doi.org/10.2307/30036540>
 32. Venkatesh, V., Thong, J. Y. L., & Xu, X. (2012). Consumer acceptance and use of information technology: Extending the Unified Theory of Acceptance and Use of Technology. *MIS Quarterly*, 36(1), 157–178. <https://doi.org/10.2307/41410412>
 33. Verhoef, P. C., Broekhuizen, T., Bart, Y., Bhattacharya, A., Dong, J. Q., Fabian, N., & Haenlein, M. (2021). Digital transformation: A multidisciplinary reflection and research agenda. *Journal of Business Research*, 122, 889–901. <https://doi.org/10.1016/j.jbusres.2019.09.022>
 34. World Bank. (2022). The Global Findex Database 2021: Financial inclusion, digital payments, and resilience in the age of COVID-19. World Bank. <https://doi.org/10.1596/978-1-4648-1897-4>
 35. World Economic Forum. (2023). The future of financial services in the digital economy. <https://www.weforum.org>