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# A Study on Role of Information and Communication Technology (ICT) In Financial Inclusion in India

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**Abstract**

Finance is a helpful tool for allocating economic opportunities. The welfare conditions of the general public and producers are improved by increased access to timely and enough finance. Banks are contributing significantly to the advancement of financial inclusion by utilizing cutting-edge technology. Given that financial services are public goods, it is imperative that the general public has prompt, unbiased access to them. Technology for information and communication (ICT) is crucial to India's advancement toward financial inclusion. Financial inclusion is the effort to provide under-banked and unbanked individuals with access to financial services. Thanks to ICT tools and technology, underprivileged and remote villages in India have benefited immensely from the spread of financial services. This study's primary goal is to talk about how ICT contributes to financial inclusion in India. The study's geographic scope included India's North, South, East, and West Zones. By distributing questionnaires to citizens in the North, South, East, and West zones, a sample of 230 respondents was gathered from primary and secondary sources. After data collection, the relevant statistical methods were used to analyze the data. The information and communication technology (ICT) has been found to have a considerable impact on financial inclusion services.

***Keywords****: ICT, financial inclusion, citizens, bank, Raising Awareness, Financial Education, Access to Financial Products (Savings, FDs, Loans, Subsidies), Sustainable Finance, Digital Infrastructure*

## 1. INTRODUCTION

The financial system's exclusion is a result of the economy's liberalization in 1991 and the GDP's explosive growth, which reached 10.1 in 2010. It was discovered that inclusive growth is necessary to get rid of this disparity. Initiatives to increase financial inclusion are much more important because of India's significantly higher percentage of financial exclusion (Sahyaja, & Rao, 2021). Financial inclusion aims to provide financial services to everyone in a fair, transparent, and equal manner at a reasonable cost (Wellalage, et al. 2021). Furthermore, one of the requirements for the overall development of our country is the availability of the newest technology in these fields. Not only have technologies altered the way we communicate with each other, but they are now the main force of change in the modern world. Information and communications technology (ICT) can be defined as the technology that facilitates faster, more productive, efficient, and easier gathering, transporting, and conversion of data and knowledge. This is vitally important in order to achieve inclusive development and the eradication of poverty. The phrase "financial inclusion" describes the process of making sure that vulnerable populations, including lower-class and marginalized groups, have access to the necessary financial products and services at reasonable prices, in a fair and transparent manner, and from mainstream institutional players (Banerji, 2018). Unrestricted access to the goods and services offered by the public sector is the foundation of an open and productive society.

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### 1.1. Characterizing Financial Inclusion

A typical meaning of "financial inclusion" is the extent of people and organizations that approach or use financial administrations, as per the (World Bank, 2014). As per (Ramnath and Garg, 2020), financial prohibition is characterized as follows: "A cycle wherein an individual, gathering, or association needs or is denied admittance to reasonable, fitting, and fair financial items and administrations." This prompts a decrease in the individual's capacity to connect completely in friendly and monetary exercises, an expansion in their financial troubles, and a disturbance of their (not entirely set in stone by their pay, obligation, and resources).

### 1.2. Financial Inclusion and ICT

Information and communication technology is fundamental for financial inclusion (ICT). Information and communication innovations (ICTs) empower more prominent financial inclusion, and the financial administrations area is a significant supporter of communications and organization technology (Tandon, and Sood, 2023). The commitment of creative plans of action and information and communication technology (ICT) to the hazardous development of financial inclusion is bewildering. In the forthcoming years, there will presumably be an ascent in the level of financial inclusion because of the accompanying reasons: (I) the outright pay levels of individuals at the lower part of the pyramid are rising; (ii) new advancements like versatile financial administrations lessen exchange expenses and increment effort; and (iii) financial inclusion has turned into a high worldwide strategy need (Pradhan, et. al, 2021).

### 1.3. Role of ICT

For a number of reasons, it is anticipated that financial inclusion will increase in the upcoming years. First off, people at the lowest end of the socioeconomic range are becoming more affluent. Second, as new technologies have emerged, the reach of financial services has increased and transaction costs have decreased, thanks to mobile financial services, for example. Finally, the significance of encouraging financial inclusion is becoming increasingly acknowledged at the international policy levels. Financial inclusion is a crucial channel through which the influence of ICT on economic development is realized. ICT plays a major role in promoting economic growth. Thus, encouraging financial inclusion will aid in the development of countries as well (Chopra, et. al, 2015). Financial services are now more widely accessible thanks to information and communication technologies (ICTs), and the financial services sector is essential to the advancement of network and communication technologies (Kanjo, et. al, 2017). ICT and innovative business models have had a remarkable impact on the rapid expansion of financial inclusion. Mobile phones are being used more frequently in Sub-Saharan Africa to provide financial services outside of conventional bank buildings. Kenya is the most notable example in Africa, where the number of active bank accounts increased by an astounding nearly four times between 2007 and 2012. Innovative ICT use has made it easier to handle numerous small transactions efficiently and has lowered the cost of delivering financial services in remote areas. There is potential to advance financial inclusion given the sharp rise in mobile phone usage in Africa. Technological innovations, such enhanced payment methods and better communications infrastructure, not only lower transaction costs but also increase the locations that can be reached (Gupta, & Singh, 2023).

### 1.4. Objectives of the study

1. To investigate the influence of Information & Communication Technology (ICT) on financial inclusion services
2. To examine the relationship between financial inclusion services and banking digital infrastructure

### 1.5. Research Hypothesis

H0A: Information and communication technology (ICT) has no appreciable impact on services related to financial inclusion.

H1A: Information and communication technology (ICT) has a big impact on services for financial inclusion.

H0B: The digital infrastructure of banks and financial inclusion services do not significantly relate to one another.

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H1B: Services for financial inclusion and digital banking infrastructure are significantly correlated.

## 2. LITERATURE REVIEW

**Zhenghui et al., (2022)** investigated how financial inclusion is affected by information and communication technology (ICT). The study uses the coefficient of variation approach and the Euclidean distance method to develop an ICT level index and a financial inclusion index utilizing data from various nations in 2011, 2014, and 2017. Thereafter, a linear regression model is used to carry out the empirical analysis. In addition, the process by which the level of ICT influences financial inclusion is examined using a mediating effect model. In the end, the analysis looks at the differences in influence by taking into account the unique internal and external characteristics of every country. The empirical results show that financial inclusion is positively impacted by ICT level. Its impact on the depth and breadth of financial inclusion, however, varies. Furthermore, the ICT level promotes financial inclusion in a nation by aiding in the development and growth of the electronic payment system. Moreover, there is significant regional or national variation in the impact of ICT on financial inclusion. This variation can be linked to differences in the international financial climate, banking structure, and economic development level. Finally, by applying information and communication technologies in a targeted manner, the study's conclusions may help countries or regions improve financial inclusion.

**Chatterjee, (2020)** studied the fixed-impact board information model with 41 nations. Utilizing a Unique Board Information Model, the exploration further adds by featuring the job that financial inclusion — which is made conceivable by expanded reception of information and communication technology — plays in propelling the monetary development of nations. The outcomes show that financial inclusion (FI) may further develop per capita monetary development both all alone and related to portable and web technology. In any case, there is an uncertainty about the capacity of ICT measurements to progress financial inclusion and, subsequently, help monetary development in emerging nations. It recommends that more cash ought to be dispensed to teaching individuals about the utilization of information and communication technology (ICT) in the proper financial area according to a strategy point of view.

**Chithralega and Varalakshmi, (2016)** accomplished impartial development is vital for freeing a large number of Indians once again from destitution. Offering financial administrations to a sizable part of India's populace could assist with accomplishing this. Financial inclusion is a significant driver moving this advancement. One of the various endeavors to accomplish the targets of the financial inclusion development is the utilization of information and communication technology (ICT) in the financial area. It is not difficult to fathom the capability that information technology plays by considering the way that it is all the more generally involved and has the reasonable capacity to convey administrations in distant areas — two fundamental essentials for financial inclusion. As per the Crisil Inclusix 2013 record, Coimbatore has the most noteworthy financial inclusion score among the regions that contain the territory of Tamil Nadu. All of the four years, Chennai wraps up in second position.

**Sharma, (2016)** gave a clarification of how information and communication technology has assisted with expanding financial inclusion in the Indian economy. A couple of ideas that could be useful to the financial inclusion cycle to arrive at the most remote corners of the Indian economy are remembered for the article's decision. The world is become progressively interconnected because of the developing utilization of information and communication technology. India's information and communication technology (ICT) area is viewed as a brilliant illustration of the open doors that globalization offers to a low-pay emerging nation. Quite possibly of the greatest test confronting Indian banks in the impending decade is acquiring the financial business of close to half of the country's populace, or one billion and 200,000 individuals. The Hold Bank of India maintains that banks should utilize technology more to expand their span and further develop their supportability even in the most distant region of the country. Consequently, ICT has made it workable for even oblivious customers to utilize biometrics to enact their financial balances, making the mark futile.

Through versatile financial administrations, this part of the development of information and communication technology can possibly increment financial inclusion, as indicated by **(Montfaucon, 2015).** Besides, the review investigates the macroeconomic and microeconomic open door costs connected with the development of information and

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communication technology (ICT). The article closes with a potential strategy proposal about the utilization of ICT to work on financial inclusion. The international policymakers presently view inclusion in the financial framework as a significant need, and the development of information and communications technology (ICT) has made the point practically equivalent. This study presents a worldwide and African view on financial inclusion and examines the effect of information and communication technology (ICT) on arriving at the individuals who could never have in any case had the option to get to financial administrations, for the most part through portable installments. In light of patterns examination, the quantity of cell phone clients in Africa is expanding more rapidly than the quantity of individuals with admittance to financial administrations.

## 3. RESEARCH METHODOLOGY

A research methodology is a description of the procedures and strategies followed in order to find and assess sources related to a certain area of study. Research design is the process by which researchers organise their investigation to achieve their objectives through the utilisation of the research instruments that they have selected.

3.1. **Research Design:** To collect and analyze data, the study used both quantitative and qualitative methodologies. In Numerical information that might be statistically examined was gathered using quantitative techniques. This involved collecting information from a sizable sample of respondents through the use of standardized questionnaires. In To gain a thorough understanding of the participants' experiences, viewpoints, and attitudes, qualitative methodologies were employed.

3.2. **Sample Size:** A total of 230 persons, both male and female, were chosen from the North, South, East, and West zones to participate in the research study. In order to give a representative cross-section of the population under research, this sample size was chosen.

3.3. **Sampling Method:** A combination of online survey random sampling and questionnaire distribution was used to choose the participants. By using questionnaires to gather uniform data from a wide range of respondents, random sampling helped guarantee that every member of the population had an equal chance of being included in the sample.

### 3.4. Variables

#### 3.4.1. Independent Variables

- *Raising Awareness:* Efforts to broaden public knowledge and comprehension of financial services and products offered by the Information and Communication Technology (ICT) sector are likely encompassed by this characteristic. The public may be informed and educated about financial possibilities through campaigns, educational programs, or initiatives.
- *Financial Education:* This variable probably indicates the extent to which people have had formal education or training with a focus on financial ideas and goods in the ICT industry. It might reveal a person's level of awareness and understanding regarding financial issues in the context of ICT.
- *Access to Financial Products (Savings, FDs, Loans, Subsidies):* This variable probably assesses how easily accessible and widely used different financial services and products are in the ICT industry. Examples of these include savings accounts, fixed deposits (FDs), loans, and subsidies. It might be an indication of how many people have access to these financial instruments and how they use them
- *Sustainable Finance:* This variable probably has to do with how the ICT industry takes environmental, social, and governance (ESG) considerations into account when making financial decisions. It might evaluate how much people value sustainable or ethical financial decisions and activities.

#### 3.4.2. Dependent Variables:

- *Information and Communication Technology (ICT):* The degree of ICT adoption, usage, or influence in relation to financial inclusion services is probably represented by this variable. It might cover things like technology developments, digital infrastructure, and ICT integration in the provision of financial services.
- *Banking:* This variable most likely relates to the function and influence of banking services in the context of financial inclusion as a whole. It might cover things like using banking channels for financial transactions, banking infrastructure, and services accessibility.

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- *Digital Infrastructure:* This variable probably includes the infrastructure and digital framework that support financial services in the ICT industry. It could consist of components including technology infrastructure, networks, and digital platforms that make it easier to deliver financial services digitally.

**3.5. Source of data collection:** The research study employed a comprehensive and multifaceted method to data collection by gathering information from primary and secondary sources.

3.5.1. **Primary Data:** A questionnaire that was sent to residents in the North, South, East, and West zones was used to gather the main data. By using this technique, the researchers were able to directly collect first-hand data from the intended audience and gain particular insights into the research variables from the viewpoints of the respondents. In addition to open-ended questions that might offer qualitative insights into the experiences and opinions of the participants, the questionnaire probably contained structured questions intended to generate quantitative responses.

3.5.2. **Secondary Data:** These were gathered from pre-existing sources such books, periodicals, websites, research papers, theses, dissertations, and journals. These sources offered more background data, context, and previously published research on the subject of the study.

3.6. **Tools used for Data analysis:** The study used a variety of data analytic tools to evaluate and make inferences from the gathered information. These instruments probably comprised:

- *Analysis of Variance (ANOVA):* This statistical technique compares the means of three or more independent groups to see if there are any differences. ANOVA was probably employed in this study's setting to evaluate the hypotheses about how independent variables—like financial education and awareness-raising—influence dependent variables—like ICT, banking, and digital infrastructure. ANOVA facilitates the assessment of whether the groups under comparison differ in ways that are statistically significant
- *Regression Analysis:* This technique has been used to look at the connections between one or more dependent variables and a number of independent variables. This statistical method can be used to forecast outcomes based on observed data and aids in understanding how the independent factors affect the dependent variables collectively.

## 4. DATA ANALYSIS AND RESULTS

### 4.1. Demographic profile of the respondents

**Table 1:** Distribution of the respondents

| | | F | % |
|---|---|---|---|
| **Gender** | Male | 193 | 84% |
| | Female | 37 | 16% |
| **Age** | 18-25 | 37 | 16% |
| | 25-30 | 64 | 28% |
| | 30-35 | 55 | 24% |
| | 35-40 | 35 | 15% |
| | 40-45 | 25 | 11% |
| | 45 and above | 14 | 6% |
| **Zone** | North | 60 | 26% |
| | South | 46 | 20% |
| | East | 69 | 30% |
| | West | 55 | 24% |
| **Educational Qualification** | $10^{th}$ Class | 18 | 8% |
| | $12^{th}$ Class | 48 | 21% |
| | Graduate | 90 | 39% |
| | Post Graduate | 58 | 25% |
| | Others | 16 | 7% |
| **Monthly Income** | Less than Rs. 10000 | 21 | 9% |
| | Rs.10001-25000 | 60 | 26% |

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| | | | |
|---|---|---|---|
| | Rs. 25001-50000 | 53 | 23% |
| | Rs.50001-150000 | 30 | 13% |
| | Rs.150001-250000 | 2 | 1% |
| | Rs.250001 and above | 0 | 0% |
| | No Income | 64 | 28% |
| **Occupation of the respondents** | Govt. Job | 30 | 13% |
| | Private Job | 53 | 23% |
| | Business | 46 | 20% |
| | Self Employed | 35 | 15% |
| | Student | 28 | 12% |
| | Housewife | 18 | 8% |
| | Retired Pensioner | 9 | 4% |
| | Unemployed | 11 | 5% |

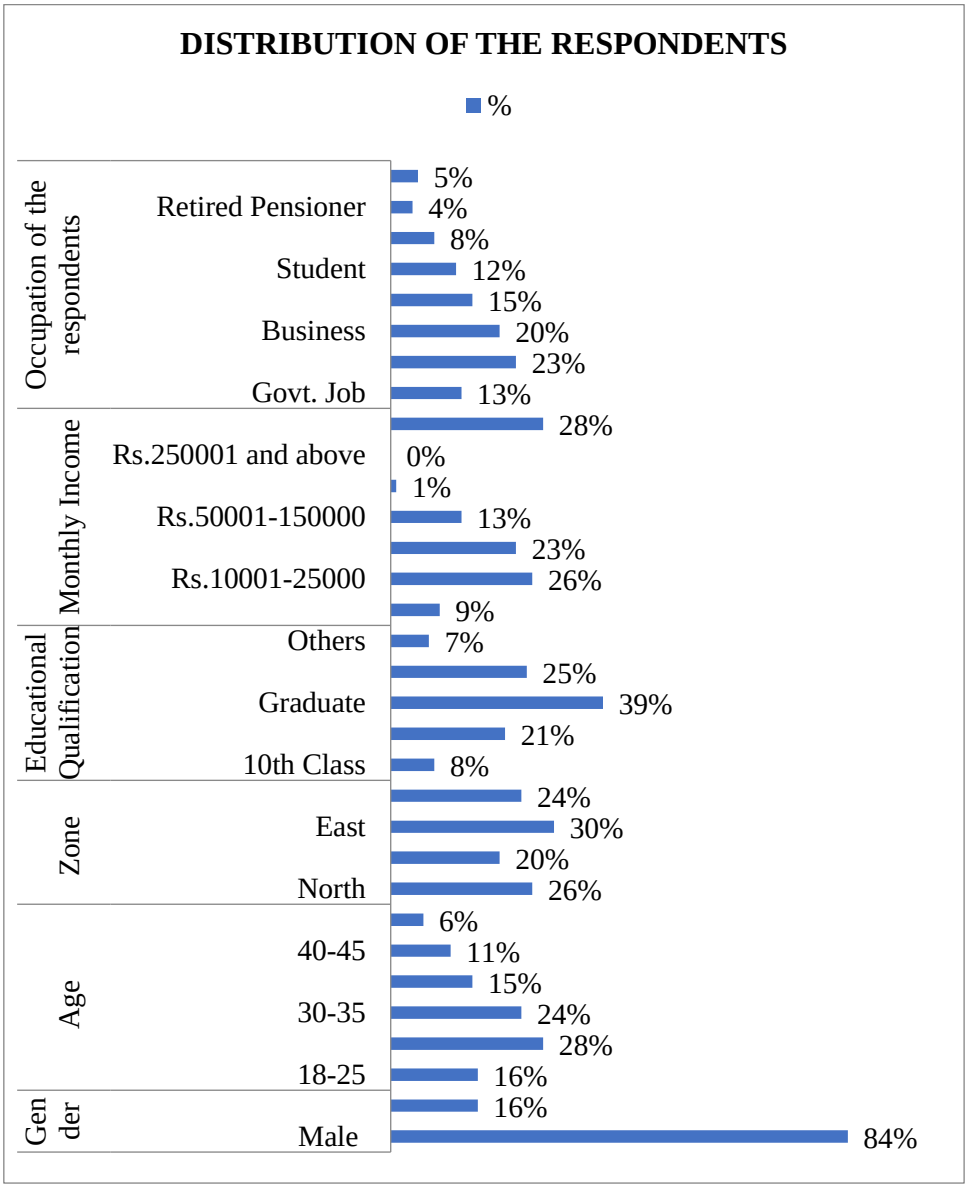


**Figure 1:** Distribution of the respondents

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There are 230 responders, of which 84% are men and 16% are women. Of the 230 respondents in the example all in all, 16% are between the ages of 18 and 25, 28 percent are between the ages of 25 and 30, 24 percent are between the ages of 30-35, 15 percent are between the ages of 35 and 40, 11 percent are between the ages of 40 and 45, and 6 percent are past the age of 45. As per the above information, 26% of the respondents are from the north zone, 20% are from the south, 30% are from the east, and 24% are from the west. Eight percent of the 230 respondents in the sample have completed up to the tenth grade, twenty-one percent have completed up to the twelfth grade, forty-nine percent have completed their education through graduation, twenty-five percent have completed their education through post-graduation, and seven percent have completed some other type of education. Nine percent of the 230 respondents fall into the category of having less than Rs. 10,000 per month, 26 percent fall into the category of having 10001–25,000 per month, 23 percent fall into the category of having Rs. 25001–50,000 per month, 13 percent fall into the category of having Rs. 50001-25000 per month, 1 percent fall into the category of having Rs. 150001–25,000 000 per month, and 28 percent fall into the category of having no income group. Thirteen percent of the 230 respondents in the sample are government employees, twenty-three percent works for private companies, fifteen percent are self-employed, twelve percent are students, eight percent are housewives, four percent are retired pensioners, and five percent are jobless.

Table 2 presents data on the levels of awareness, education, and access to financial products among respondents in the ICT sector.

**Table 2:** Levels of Awareness, Education, and Access to Financial Products

| **Parameters** | **Items** | **Scale** | **F** | **%** |
|---|---|---|---|---|
| **Raising Awareness** | Current Level of Awareness Regarding Financial Services Available | Very Low | 5 | 2% |
| | | Low | 7 | 3% |
| | | Moderate | 46 | 20% |
| | | High | 103 | 45% |
| | | Very High | 69 | 30% |
| | Participation in Awareness Campaigns Related to Financial Services in the ICT Sector in the Past Year | Yes | 173 | 75% |
| | | No | 57 | 25% |
| **Financial Education** | Formal financial education or training of ICT | Yes | 150 | 65% |
| | | No | 80 | 35% |
| | Understanding of financial concepts related to ICT | Not at all confident | 23 | 10% |
| | | Somewhat confident | 35 | 15% |
| | | Moderately confident | 80 | 35% |
| | | Very confident | 57 | 25% |
| | | Extremely confident | 35 | 15% |
| **Access to Financial Products** | Currently Use of financial products | Savings accounts | 46 | 20% |
| | | Fixed Deposits (FDs) | 69 | 30% |
| | | Loans | 92 | 40% |

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| | | | | |
|---|---|---|---|---|
| | | Subsidies | 23 | 10% |
| | factors influence choice of financial products | Interest rates | 12 | 5% |
| | | Ease of access | 82 | 35% |
| | | Terms and conditions | 69 | 30% |
| | | Financial education received | 46 | 20% |
| | | Sustainability features | 23 | 10% |
| **Sustainable Finance** | Importance of Sustainable Finance in Decision-making for Financial Products via ICT | Not at all important | 11 | 5% |
| | | Somewhat important | 23 | 10% |
| | | Moderately important | 69 | 30% |
| | | Very important | 69 | 30% |
| | | Extremely important | 58 | 25% |
| | Awareness of Sustainable Finance Initiatives or Products | Yes | 138 | 60% |
| | | No | 92 | 40% |
| **Combined Effects** | Most Crucial Factors for Enhancing Financial Inclusion in the ICT Sector | Raising awareness and financial education | 70 | 30% |
| | | Raising awareness and access to financial products | 57 | 25% |
| | | Financial education and access to financial products | 57 | 25% |
| | | All three factors equally | 46 | 20% |
| | Effectiveness of Integrated Approach in Promoting Financial Inclusion | Yes | 184 | 80% |
| | | No | 46 | 20% |

According to the statistics, 45% of the respondents said they were highly aware of the financial services that were offered, and 30% said they were extremely aware of them. Additionally, 75% of respondents said they have taken part in ICT-related financial services awareness efforts in the previous year. Of those surveyed, 65% had obtained formal financial education or training that was focused on the ICT industry. When asked how confident they were in their ability to understand ICT-related financial concepts, 25% said they were extremely sure, and 35% said they were moderately confident. Conversely, 10% expressed zero confidence in their comprehension. When it came to financial product availability, fixed deposits (30%) and loans (40%) were the most often utilized items. The respondents stated that terms and conditions (30%) and convenience of access (35%) were the main factors affecting their choice of financial products. Thirty percent of respondents said that using ICT to make financial product decisions was rather significant when it came to sustainable finance. Furthermore, 60% knew of targeted products or activities related to

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sustainable financing. Regarding the most critical elements for improving financial inclusion in the ICT industry, financial education and awareness-raising were cited by 30% of respondents as the most important combination, and access to financial products and awareness-raising were cited by 25%. A further quarter underlined the need of financial product availability and education. Furthermore, eighty percent of participants thought that a comprehensive strategy that included financial product access, education, and awareness would be more successful in advancing financial inclusion.

### 4.2. Hypothesis testing

The speculation tried in this study planned to decide if there is a critical impact of Information and Communication Technology (ICT) on Financial Inclusion administrations. The invalid speculation (H0) expressed that there is no significant influence, while the alternative hypothesis (H1) recommended that there is a significant influence.

**Table 3:** Co-Effective Financial Inclusion and ICT

| **Variables** | **Unstandardized Coefficients** | | **t-value** | **Sig** | **$R^2$** |
|---|---|---|---|---|---|
| | **B** | **Std. Error** | | | |
| Constant | 1.277 | .400 | 3.190 | .002 | .481 |
| Raising Awareness | .161 | .216 | .747 | .456 | |
| Financial Education | -.186 | .188 | -.991 | .323 | |
| Access to Financial Products (Savings, FDs, Loans, Subsidies) | -.017 | .175 | -.097 | .923 | |
| Sustainable Finance | .031 | .142 | .215 | .830 | |

*Regression fitted: $Y= 1.277+.161X_1-.186X_2-.017X_3 +.031X_4$*

**Table 4:** Financial inclusion and ICT result

| **Source** | **Sum of Square** | **df** | **Mean square** | **F** | **Sig** |
|---|---|---|---|---|---|
| Regression | 19.441 | 3 | 2.160 | 6.682 | .000 |
| Residual | 64.659 | 226 | .323 | | |
| Total | 84.100 | 229 | - | | |

a. Dependent variables – ICT

b. independent variables - Raising Awareness, Financial Education, Access to Financial Products (Savings, FDs, Loans, Subsidies), Sustainable Finance

As per the multiple regression models, Y is fundamentally affected by four explanatory factors. X1: Spreading Knowledge; X2: Financial Education; X3: Financial Products Access (Loans, Savings, FDs, and Subsidies); X4: Financial Products Access (Loans, Savings, FDs, and Subsidies). The coefficient of determination (R2) esteem showed that these factors together made sense of 48.10 percent of the distinctions in Y.

Furthermore, it has been noted that the hypothesis is supported because the probability value of F (0.000) demonstrates a substantial association between the variables investigated. The information and communication technology (ICT) has been found to have a major impact on financial inclusion services. As a result, the null hypothesis is rejected and the alternative hypothesis is accepted. Regression analysis reveals a 48.10% correlation between the variables under investigation.

Regression analysis and ANOVA results show a strong correlation between digital banking infrastructure and Financial Inclusion services.

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- **Regression Analysis: ANOVA**

The evaluation of coefficients in relapse examination is urgent in laying out the connection among dependent and independent variables.

**Table 5:** ANOVA[a]

| Model | | Sum of squares | df | Mean square | F | Sig. |
|---|---|---|---|---|---|---|
| 1. | Regression | 12.728 | 4 | 3.157 | 7.342 | .000[b] |
| | Residual | 83.841 | 225 | .430 | | |
| | Total | 96.569 | 229 | | | |

*a. Dependent variables – Banking digital infrastructure*

*b. independent variables - Raising Awareness, Financial Education, Access to Financial Products (Savings, FDs, Loans, Subsidies), Sustainable Finance*

The ANOVA table shows a p-value of 0.00 and an F-value of 33.492. The analysis can be deemed statistically significant since the p-value is less than 0.05 and the F-value is greater than 4. The coefficient Table 20 displays the computed sig. value for each dependent variable. If the sig. value is less than 0.05, there is evidence of a significant relationship between the independent and dependent variables. A statistically significant positive correlation between the digital infrastructure of banks and Financial Inclusion services is not found, for instance, in Table 20, where the sigh value for financial education is 0.159>0.05. The sig. value of 0.271 for Access to Financial Products (Loans, Savings, FDs, and Subsidies) indicates a nonlinear relationship between television advertisements and consumer purchasing behavior. Conversely, the sigh values for sustainable finance and awareness-raising are (0.004 & 0.003<0.05), suggesting a responsive relationship between these variables and banks' digital infrastructure.

### 4.3. Findings of the Study

The following are the study's conclusions:

- There are 84% guys and 16% females;
- 16% of the populace is between the ages of 18 and 25; 28 percent is between the ages of 25 and 30; 24 percent is between the ages of 30-35; 15 percent is between the ages of 35 and 40; 11 percent is between the ages of 40 and 45; and 6 percent is beyond 45 years old.
- The data indicates that 8% of individuals possess an education up to the tenth grade, 21% have an education up to the twelfth grade, 39% have an education up to graduation, 25% have an education up to a post-graduation, and 7% have another type of education.
- Regarding the financial services related to ICT that are available to them, it is observed that 10% of the respondents are not at all confident, 15% are somewhat confident, 35% are moderately confident, 25% are very confident, and 15% are extremely confident in their understanding of financial concepts related to ICT. 2% of the respondents have a very low level of awareness, 3% have low awareness, 20% have a moderate level of awareness, 45% have a high level of awareness, and 30% have a very high level of awareness.
- Survey participants indicate that: 15% say internet rates affect their decision, 20% say accessibility is important, 17% say terms and conditions have an impact, 23% say financial education has an impact, and 25% say sustainability features have an impact.
- It was found that, for improving financial inclusion in the ICT sector, 30% of respondents said that increasing awareness and financial education is the most important factor, 25% said that raising awareness and access to financial products is the most important factor, 25% said that financial education and access to financial products is the most important factor, and 20% said that all three factors are equally important.

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**Table 6:** Findings from Hypothesis

| **Hypothesis** | **Sig. value** | **Decision** |
|---|---|---|
| H0A | .000 | Not Supported |
| H1A | | Supported |
| H0B | 0.004 | Not Supported |
| H1B | | Supported |

## 5. CONCLUSION

In recent decades, there has been a notable surge in the utilization of technology to establish connections between people worldwide. The government has implemented various steps pertaining to technology renovation in order to furnish clients with more user-friendly access. Furthermore, obstacles like fraud, money laundering, bankruptcies, and security issues could arise due to the relaxation of Know Your Customer (KYC) regulations and personal identification number (PIN) requirements for smart cards. This would ultimately cause rural customers' confidence in financial institutions to decline. In view of this, bank employees were required to instruct rural consumers on the use of ICT applications and to maintain ICT infrastructure in order to protect rural customers from fraudulent activity when using electronic banking. ICT is crucial to bridging the financial inclusion gap in India. ICT can empower individuals and drive economic growth and progress by enhancing accessibility, optimizing efficacy, and promoting financial literacy. If India wants to properly utilize ICT in the nation's financial inclusion goals, cybersecurity, insufficient infrastructure, and low levels of digital literacy still need to be resolved.

## REFERENCES

1. Banerji, A. (2018). ICT as a tool of Financial Inclusion. IJCRT, Volume 6, Issue 2 April 2018, ISSN: 2320-2882. https://ijcrt.org/papers/IJCRT1812383.pdf
2. Chatterjee, A. (2020). Financial inclusion, information and communication technology diffusion, and economic growth: a panel data analysis. Information Technology for Development. 10.1080/02681102.2020.1734770. https://www.tandfonline.com/doi/abs/10.1080/02681102.2020.1734770
3. Chithralega and Varalakshmi (2016). ICT IN FINANCIAL INCLUSION. Int. J. Adv. Res. 4(9), 222-228. DOI URL: http://dx.doi.org/10.21474/IJAR01/1476 https://eprints.manipal.edu/146567/
4. Chopra, S. Sherry, A. & Dwivedi, R. (2015). Role of Technology Options for Financial Inclusion: Case Study in India. In book: Technological Solutions for Sustainable Business Practice in Asia (pp.1-18). 10.4018/978-1-4666-8462-1.ch001 https://www.igi-global.com/chapter/role-of-technology-options-for-financial-inclusion/132315
5. Gupta, P., & Singh, B. (2023). Role of literacy level in financial inclusion in India: Empirical evidence. Europe, 89, 10-4. http://www.joebm.com/papers/59-X10007.pdf
6. Kanjo, C. Phiri, Y. Mtumbuka, F, & Manda, T. (2017). ICT solutions for financial inclusion: Reaching out to the unbanked in low resource settings. IST-Africa Week Conference (IST-Africa). 1-11. https://ieeexplore.ieee.org/abstract/document/8102408/
7. Montfaucon, A. (2015). Financial Inclusion and the Impact of ICT: An Overview. American Journal of Economics. 5. 495-500. 10.5923/j.economics.20150505.09 https://www.researchgate.net/profile/Angella-Montfaucon/publication/282019621_Financial_Inclusion_and_the_Impact_of_ICT_An_Overview/links/56fe325a08aea6b774686b4d/Financial-Inclusion-and-the-Impact-of-ICT-An-Overview.pdf
8. Pradhan, R. P., Arvin, M. B., Nair, M. S., Hall, J. H., & Bennett, S. E. (2021). Sustainable economic development in India: The dynamics between financial inclusion, ICT development, and economic growth. Technological

Forecasting and Social Change, 169, 120758. https://www.sciencedirect.com/science/article/pii/S0040162521001906

9. Ramnath P and Garg, A. (2020). Financial Inclusion - Viable Opportunities in India, 4-39. Retrieved from: http://books.google.co.in/books?id=WcCXBT4AQeIC
10. Sahyaja, C., & Rao, K. S. (2021). The role of information and communication technology (ICT) in financial inclusion. IOSR Journal of Business and Management (IOSR-JBM), Volume(Issue), Page range. DOI/Publisher information PP 15-20. https://www.iosrjournals.org/iosr-jbm/papers/Conf.17037-2017/Volume-4/3.%2015-%2020.pdf
11. Sharma, A.M. (2016). Vital role of ICT in Financial Inclusion: An embodying opportunity for India. IISUniv.J.Com.Mgt. Vol.5(1), ISSN 2320-4907, 85-95 (2016). https://iisjcm.org/sites/default/files/IISJCM/2016/9.%20Asha%20Mamraj%20Sharma.pdf
12. Tandon, D. and Sood, D. (2023). ICT's Critical Role in Financial Inclusion: An Opportunity for India. Grima, S., Sood, K. and Özen, E. (Ed.) Contemporary Studies of Risks in Emerging Technology, Part B (Emerald Studies in Finance, Insurance, and Risk Management), Emerald Publishing Limited, Leeds, pp. 231-241. https://doi.org/10.1108/978-1-80455-566-820231012
13. Wellalage, N.H. Hunjra, A.I. et al. (2021). Information communication technology and financial inclusion of innovative entrepreneurs. Technological Forecasting and Social Change, Volume 163, 2021, 120416, ISSN 0040-1625, https://doi.org/10.1016/j.techfore.2020.120416.
14. World Bank. (2014). Global Findex Database 2014: Measuring Financial Inclusion around the World. https://elibrary.worldbank.org/doi/10.1596/1813-9450-7255
15. Zhenghui L., Bin C. and Siting L. (2022). The impact of information and communication technology on financial inclusion—based on a global perspective. AIMS Mathematics, 7(12): 20930–20961. DOI: 10.3934/math.20221147 https://www.researchgate.net/profile/Zhenghui-Li-2/publication/366487690_The_impact_of_information_and_communication_technology_on_financial_inclusion-based_on_a_global_perspective/links/63a3cd31c3c9bb1647fc636d/The-impact-of-information-and-communication-technology-on-financial-inclusion-based-on-a-global-perspective.pdf