

Unveiling the patterns of Fintech Services Adoption: A Study in the Rural Area of Tirupati

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Abstract:

Purpose: The research aim is disruptive innovation within financial technology (FinTech), the research paper delves into its impact on various financial services such as payments, investment, insurance, and banking. The study aim is to understand the current landscape of FinTech adoption in India and to uncover the perceptions held by individuals towards FinTech, ultimately striving to enhance the FinTech space for future improvements.

Methodology: The research, "Unveiling the Patterns of FinTech Services Adoption through questionnaire surveys. The research paper engaged with participants from rural areas, particularly Tirupati, to empower them in managing financial services effectively through FinTech solutions. Over a period of six months, the individuals in Tirupati and received responses from 217 participants. The sampling method employed was judgmental, focusing on users across various FinTech platforms. The data collection utilized quantitative research methods, employing tools such as simple percentage analysis, Chi-square, T-tests, and ANOVA.

Results: The research paper findings shed light on the awareness and adoption levels of various FinTech products among Tirupati respondents. It became evident that FinTech services have been enabled by technological infrastructure, including internet connectivity and smartphone penetration. Furthermore, the adoption of FinTech and financial inclusion initiatives have been supported by favorable government policies and regulatory environments. Through this empirical analysis, we unearthed several key factors influencing FinTech adoption and perception among individuals.

Keywords: Fintech Services, Rural Ares, Technology.

1. Introduction:

Fintech, a blend of "finance" or "financial service" and "technology," lacks a single, definitive definition in economic and scientific literature. Nevertheless, its widespread usage is evident, having secured a place in numerous dictionaries. For instance, the Cambridge Dictionary broadly defines fintech as "the utilization of technology to enhance financial services," while the Oxford Dictionary specifies it as "computer programs and other technological innovations employed in providing banking and financial services." Schueffel (2016, p. 32) characterizes fintech as "a burgeoning financial sector leveraging technology to enhance financial operations," whereas Nicoletti (2017, p. 3) identifies fintechs as "entities, primarily startups, revolutionizing the financial landscape." Regardless of whether fintech is perceived as a business, a software application, a startup, or an entire industry, these definitions underscore its dynamic nature, highlighting how technology can catalyze innovation and

improvement within the realm of finance. Fintech leverages technology to streamline financial services, making them more efficient and accessible. It involves the integration of information technology into finance, enabling services such as mobile banking, internet banking, instant payment applications, plastic money, and cryptocurrency, all geared toward enhancing financial accessibility for the general public.

In India, FinTech innovations are aligned with the government's aim of financial inclusion, assisting in reaching underserved populations. Traditional banking methods are being supplanted by innovative approaches, offering a diverse range of services including payments banking, wealth management, bill payments, crowdfunding, and insurance. The advent of FinTech has fundamentally altered the landscape of banking services, opening up new avenues for growth and development. The Indian government's support for FinTech ventures through initiatives like Jan Dhan Yojana, India Stack, and UPI underscores its commitment to fostering innovation and inclusivity in the financial sector. The digital shift in banking is anticipated to experience exponential growth, driven by collaborative efforts between FinTech service providers and government initiatives. This partnership holds significant potential for driving further advancements and enhancing financial accessibility for all.

According to **Leong (2018)**, fintech is a multidisciplinary field that merges finance, technology management, and innovation management. To understand how fintech adds value to businesses, we can categorize various fintech applications into four main areas: payment systems, advisory services, financing solutions, and compliance tools. In essence, fintech encompasses innovative solutions that enhance financial service processes by tailoring technology to different business needs, potentially leading to the creation of new business models or ventures. Blockchain technology has been extensively researched as a subset of payment systems, with numerous techniques and applications proposed by various scholars. Fintech has facilitated the disruption of financial services by non-financial enterprises, leading to innovation and technological advancements. This has enabled customers to engage in a wide range of mobile services, including online payments, fund transfers, loan applications, insurance purchases, asset management, stock investments, mobile payments, peer-to-peer lending, crowdfunding, and cryptocurrency transactions (**Ryu, H.-S., 2020**). Digital transformation entails organizations or countries adopting new digital technologies to significantly enhance their performance. These technologies include social media, mobile applications, big data, cloud computing, Internet of Things (IoT), artificial intelligence (AI), fintech, blockchain, virtual reality, and augmented reality. To successfully navigate this transformation, a well-defined strategy, appropriate organizational structure, digital capabilities, supportive culture, and effective governance are crucial (**Naimi-Sadigh, A.; Asgari, T.; Rabiei, M., 2022**). The widespread adoption of digital technologies in banking operations and services incorporates a variety of digital tools such as computers, computer networks, digital communication, the internet, and information and communication technologies, supported by appropriate software. This integration leads to increased speed, security, and efficiency, delivering numerous benefits to both banks and their clients. Additionally, there is a proposed method for transitioning a traditional financial data bank into a digital counterpart, illustrated through the example of a typical commercial or retail bank (**Sajic, M.; Bundalo, D.; Bundalo, Z.; Pasalic, D., 2017**). Analyzing the digitization of banks necessitates a perspective centered on the industry's evolving management practices, influenced by new worldviews

emerging in the digital era. This perspective encompasses changes in technologies, processes, and tools employed within the banking sector **(Evdokimova, Y.; Shinkareva, O.; Bondarenko, 2018)**. The global financial sector is currently undergoing a profound transformation, with FinTech emerging as a key driver reshaping the way banking and financial services operate. FinTech, short for financial technology, encompasses advanced technologies such as blockchain, big data, and intelligent investment consulting. This technological intervention has revolutionized the delivery of financial services, making them faster, more cost-effective, and of higher quality.

2. Literature review

According to the technology acceptance theory, factors such as enjoyment and flow play crucial roles in shaping an individual's experiences with technology. When it comes to e-commerce adoption, an analysis highlights external pressures, perceived benefits, and readiness as the most significant factors **(Chwelos, P.; Benbasat, I.; Dexter, 2001)**. Interestingly, despite substantial investments in new information technologies, the United States has often overlooked fundamental elements of technology adoption such as planned change, internalization, trust, and adoption dynamics. Innovators, typically characterized by high wealth, education, active social participation, and leadership, are often the first to embrace new services or goods like internet banking **(Lippert, S.K.; Davis, M. A, 2006)**. The perceived benefits, which significantly influence service acceptance, are pivotal in individual decision-making regarding technology adoption **(Lassar, W.M.; Manolis, C.; Lassar, S.S., 2005)**. Apart from personal preferences, factors such as consumer demand, market competition, technology accessibility, and overall market forces also influence the adoption of online banking services among banks **(Bradley, L.; Stewart, K, 2003)**. Montazemi and Qahri-Saremi (2015) utilized a grounded theory approach and the two-stage random effects MASEM procedure to identify factors influencing preadoption and postadoption of online banking. Similarly, a study on internet banking adoption in China emphasized security as the most critical determinant of user adoption, with perceived ease of use and privacy policies also exerting significant influence **(Hua, G , 2023)**.

Another study conducted between 2003 and 2006 in the United States, focusing on a panel of commercial banks, investigated the factors influencing banks' adoption of transactional websites, the predecessors to modern online banking platforms. The findings revealed that while individual bank characteristics, such as reputation and public trust, are significant, the banking sector itself is the primary area of focus for banks. Moreover, competition emerged as a crucial factor influencing banks' decisions in this regard **(Hernández-Murillo, R.; Llobet, G.; Fuentes, R, 2010)**. Comparative studies analyzing the adoption of digital banking across different economies, including the United States, Russia, and China, indicate that the US banking system maintains a distinct advantage in this domain **(Simpson, J 2002)**. Factors such as economic value, ease of use, social influence, company reputation, features, and rewards significantly influence customers' preference for using e-banking services exclusively. These findings have been observed across different generations, including Generations Y and Z in Indonesia **(Windasari, N.A.; Kusumawati, N.; Larasati, N.; Amelia, R.P 2022)**. Another study explores whether the adoption of digital payment methods, like mobile payments, increases the risks of financial vulnerability. This study extends its analysis beyond the United States, examining the willingness of populations to utilize social media platforms for money transfers and share account information with third-party financial services. The research draws on data from a

sample of Norwegian adults ($n = 2202$) (Seldal, M.M.N.; Nyhus, E.K 2022). Defining the fintech framework, along with identifying the most suitable business models for each country, emerges as a central challenge in this field. It serves as a crucial step in formulating regulations that can effectively keep pace with technological advancements. Cybersecurity and information infrastructure must continually evolve to support the vast amounts of data, including sensitive personal information, utilized in fintech operations. Emerging technologies like robot advisors, big data, and AI are bolstered by advancements in internet connectivity and smartphone capabilities (Suryono, R.R.; Budi, I.; Purwandari, B 2020). A study conducted in Malaysia, as detailed by Abdul-Rahim, R.; Bohari, S.A.; Aman, A. (2022), highlights the role of fintech in promoting financial inclusion. Fintech initiatives facilitate access to affordable and convenient financing for unbanked and underbanked consumers, particularly low-income households and minority groups, thus enhancing their economic opportunities. These services contribute to cost reduction, enhance the quality of financial services, boost employment rates, and alleviate poverty by lowering transaction costs. This, in turn, fosters growth in both personal and professional spheres, providing financial access through avenues such as microfinance and crowdfunding.

3. Research Methodology:

This study employs a descriptive research approach to explore the patterns of Fintech service adoption within rural populations in Tirupati. The research model aims to investigate the correlation between Fintech service adoption and rural residents' characteristics.

3.1 Research Gap

Identified research gaps indicate the necessity for further exploration into the accessibility, awareness, and impact of Fintech services on financial behaviors, transaction trends, and overall financial well-being within rural communities.

3.2 Research Design

Sampling: The sample will comprise residents from diverse rural areas within Tirupati district, ensuring representation across various socio-economic backgrounds, age groups, and occupations. Primary data collection will involve administering structured questionnaires to 217 rural women in Tirupati District.

3.3 Sampling Technique:

Random sampling techniques will be utilized to select participants from different villages or localities within the district, ensuring impartial representation.

3.3.1 Data Collection: Surveys: Structured questionnaires will be crafted to gather quantitative data on Fintech service adoption, usage patterns, preferences, and perceptions among rural residents.

3.3.2 Interviews/Focus Group Discussions: Qualitative data will be collected through interviews or focus group discussions to delve into the factors influencing Fintech adoption and usage behaviors in depth.

3.4 Objectives of Study:

- a) To analyse the demographic profile of rural respondents.
- b) To assess the adoption of Fintech among rural residents of Tirupati.
- c) To identify the challenges faced by FinTech users in rural Tirupati.

3.5 Hypothesis

H1: The rural Respondents of demographical factors such as Age, Gender, Educational status, Economic Status and annual Income on usage of FinTech Services.

H2: The rural Respondents of demographical factors such as Age, Gender, Educational status, Economic Status and annual Income influence Factors on of FinTech Services.

H3: The rural Respondents of demographical factors such as Age, Gender, Educational status, Economic Status and annual Income on risk of the using FinTech Services

4. Results

Table No. 4.1 Demographical Profile of the Respondents

Age		
	Frequency	Percent
<20	44	20.3
21-30	58	26.7
31-40	43	19.8
>41	72	33.2
Total	217	100
Gender		
	Frequency	Percent
Male	107	49.3
Female	110	50.7
Total	217	100
Education Level		
	Frequency	Percent
illiterate	36	16.6
Matric	48	22.1
Intermediate	22	10.1
graduation	89	41
Post-Graduation	22	10.1
Total	217	100
Employment Status		
	Frequency	Percent
student	57	26.3
wage workers	52	24
salary Person	23	10.6
Business Owner	73	33.6
Agriculture	12	5.5
Total	217	100
Annual Income		

	Frequency	Percent
Below -1,00,000	40	18.4
1,00,000- 2,00,000	77	35.5
2,00,000 - 3,00,000	48	22.1
Above 3,00,000	52	24
Total	217	100

Source: primary Data

The table No. 4.1 shows that ,Firstly, in terms of age distribution, the majority of the surveyed population falls within the older age brackets, with 33.2% being over the age of 41. This suggests that the population sample is relatively mature, potentially indicating a higher level of life experience and possibly differing needs compared to younger demographics. Gender distribution appears to be almost evenly split, with a slight skew towards females comprising 50.7% of the sample. This balanced gender representation indicates that the study captures insights from both male and female perspectives, ensuring a more comprehensive analysis of the demographic. Education levels within the sample vary, with a significant portion having completed graduation (41%), followed by matric (22.1%) and post-graduation (10.1%). The presence of illiterate individuals at 16.6% highlights the diversity within the sample, potentially reflecting varying socioeconomic backgrounds and access to education. Regarding employment status, a substantial proportion of respondents identify as business owners (33.6%) followed by students (26.3%) and wage workers (24%). This suggests a mixed economic landscape within the surveyed population, with a significant entrepreneurial presence alongside individuals in traditional employment roles.

Finally, annual income distribution showcases a relatively even spread across different income brackets, with a notable portion falling within the range of 1,00,000 to 2,00,000 (35.5%).

Table No.4.2 Fintech usage

aware of Fintech services		
	Frequency	Percent
Yes	217	100
Fintech services have you used or are currently using.		
	Frequency	Percent
Paytm	24	11.1
Mobiwik	25	11.5
Airtel Payment	21	9.7
BHIM UPI	21	9.7
SBI Yono	28	12.9
Phone Pe	34	15.7
Google Pay	36	16.6
Amazon pay	28	12.9
Total	217	100
frequently use Fintech services		
	Frequency	Percent
Daily	55	25.3
Weekly	73	33.6
Monthly	59	27.2
Rarely	24	11.1

Never	6	2.8
Total	217	100

Source: primary Data

Table No. 4.2 describe that Firstly, all respondents (100%) are aware of Fintech services, indicating a widespread knowledge and recognition of these digital financial technologies within the demographic. Among the various Fintech services listed, it's observed that a considerable portion of respondents have used or are currently using multiple platforms. The most popular platforms include Phone Pe (15.7%), Google Pay (16.6%), and Paytm (11.1%), with each attracting a significant user base. Other services such as Amazon Pay, SBI Yono, and Mobiwik also show notable usage percentages, highlighting the diverse range of Fintech options embraced by the population. In terms of usage frequency, the data suggests that Fintech services are integrated into the daily financial activities of a substantial portion of the respondents (25.3%). Additionally, a significant number of individuals utilize these services on a weekly (33.6%) or monthly (27.2%) basis, emphasizing their frequent incorporation into routine transactions. A smaller percentage of respondents use Fintech services rarely (11.1%), while only a negligible proportion (2.8%) report never using them.

Table No. 4.3 Distribution of age wise sample respondents over their usage of Fintech

Distribution of age wise sample respondents over their usage of Fintech						
AGE	N	Mean	Std. Deviation	Mean Square	F	Sig.
paytm	24	2.83	0.917	9.246	8.945	0
Mobiwik	25	1.72	0.458			
Airtel Payment	21	1.76	0.436			
BHIM upi	21	2.52	0.873			
SBI Yono	28	2.82	1.416			
Phone Pe	34	2.65	1.433			
Google Pay	36	3.42	0.874			
Amazon pay	28	3	0.943			
Total	217	2.66	1.14			

The table No. 4. 3 reveals that ,Paytm has the highest mean usage score of 2.83, followed closely by Google Pay at 3.42 and SBI Yono at 2.82. This indicates that, on average, respondents reported higher usage of these services compared to others. Mobiwik has the lowest mean usage score at 1.72, indicating comparatively lower usage among respondents. Google Pay also has the lowest standard deviation at 0.874, suggesting less variability in reported usage levels among respondents.

The F-value and significance value (Sig.) suggest that there are significant differences in the mean usage levels among the various age group of respondents and Fintech services, given the low p-value (0) and high F-value (8.945).

Table No. 4.4 Distribution of Gender wise sample respondents over their usage of Fintech

Distribution of Gender wise sample respondents over their usage of Fintech						
Gender	N	Mean	Std. Deviation	Mean Square	F	Sig.
paytm	24	1.38	0.495	2.158	11.523	0
Mobiwik	25	2	0			
Airtel Payment	21	2	0			
BHIM upi	21	1.24	0.436			
SBI Yono	28	1.43	0.504			
Phone Pe	34	1.35	0.485			
Google Pay	36	1.47	0.506			
Amazon pay	28	1.32	0.476			
Total	217	1.51	0.501			

The table No. 4.4 describe that Paytm has the lowest mean usage score among the specified gender at 1.38, indicating relatively lower usage compared to other services. Mobiwik, Airtel Payment, and Google Pay have the highest mean usage score of 2.0, suggesting relatively higher usage among the specified gender.

The F-value and significance value (Sig.) suggest that there are significant differences in the mean usage levels of different Fintech services among the specified gender, given the low p-value (0) and high F-value (11.523).

Table No. 4.5 Distribution of Educational level wise sample respondents over their usage of Fintech

Distribution of Educational level wise sample respondents over their usage of Fintech						
Education Level	N	Mean	Std. Deviation	Mean Square	F	Sig.
paytm	24	3.29	1.706	20.723	19.408	0
Mobiwik	25	2.96	0.79			
Airtel Payment	21	2	0			
BHIM upi	21	1.24	0.436			
SBI Yono	28	4.21	0.63			
Phone Pe	34	3.03	1.291			
Google Pay	36	3.31	1.091			
Amazon pay	28	3.68	1.056			
Total	217	3.06	1.306			

The table 4.5 shows that ,SBI Yono has the highest mean usage score among individuals with the specified education level at 4.21, indicating relatively higher usage compared to other services. BHIM UPI has the lowest mean usage score at 1.24, suggesting comparatively lower usage among individuals with the specified education level. The F-value and significance value (Sig.) suggest that there are significant differences in the mean usage levels of different Fintech services among individuals with the specified education level, given the low p-value (0) and high F-value (19.408).

Table No. 4.6 Distribution of Employment status sample respondents over their usage of Fintech

Distribution of Employment status sample respondents over their usage of Fintech						
Employment Status	N	Mean	Std. Deviation	Mean Square	F	Sig.
paytm	24	1.38	0.495	25.166	25.923	0
Mobiwik	25	1.6	0.5			
Airtel Payment	21	3.76	0.436			
BHIM upi	21	4	0			
SBI Yono	28	3.79	0.63			
Phone Pe	34	2.5	1.523			
Google Pay	36	2.17	1.298			
Amazon pay	28	2.75	1.236			
Total	217	2.68	1.325			

The table No.4.6 BHIM UPI has the highest mean usage score among individuals with the specified employment status at 4.0, indicating relatively higher usage compared to other services. Paytm has the lowest mean usage score at 1.38, suggesting comparatively lower usage among individuals with the specified employment status. The F-value and significance value (Sig.) suggest that there are significant differences in the mean usage levels of different Fintech services among individuals with the specified employment status, given the low p-value (0) and high F-value (25.923).

Table No. 4.7 Distribution of annual income wise sample respondents over their usage of Fintech

Distribution of annual income wise sample respondents over their usage of Fintech						
Annual Income	N	Mean	Std. Deviation	Mean Square	F	Sig.
paytm	24	3	0.933	5.209	5.397	0
Mobiwik	25	3.08	1.382			
Airtel Payment	21	2.24	0.436			
BHIM upi	21	2.48	0.873			
SBI Yono	28	2.86	1.008			
Phone Pe	34	1.79	0.88			
Google Pay	36	2.44	0.969			
Amazon pay	28	2.46	1.071			
Total	217	2.52	1.05			

Table No.4.7 reveals that Paytm has the highest mean usage score among individuals with the specified annual income at 3.0, indicating relatively higher usage compared to other services. Phone Pe has the lowest mean usage score at 1.79, suggesting comparatively lower usage among individuals with the specified annual income.

The F-value and significance value (Sig.) suggest that there are significant differences in the mean usage levels of different Fintech services among individuals with the specified annual income, given the low p-value (0) and high F-value (5.397).

Table No. 4.8 Distribution of Demographical Profile of the sample respondents over their influencing factors of the Fintech Services

	age			gender			Education Level			Employment Status			Annual Income		
	Pearson Chi-Square Tests			Pearson Chi-Square Tests			Pearson Chi-Square Tests			Pearson Chi-Square Tests			Pearson Chi-Square Tests		
	Value	df	Asymptotic Significance (2-sided)	Value	df	Asymptotic Significance (2-sided)	Value	df	Asymptotic Significance (2-sided)	Value	df	Asymptotic Significance (2-sided)	Value	df	Asymptotic Significance (2-sided)
Regular Environment	67.527 ^a	12	0	21.968 ^a	4	0	112.049 ^a	16	0	78.493 ^a	16	0	53.125 ^a	12	0
Social Influence	24.572 ^a	9	0.003	12.446 ^a	3	0.006	47.517 ^a	12	0	87.345 ^a	12	0	19.767 ^a	9	0.019
cash back	56.842 ^a	9	0	17.380 ^a	3	0.001	64.943 ^a	12	0	78.214 ^a	12	0	33.274 ^a	9	0
Rewards	16.408 ^a	9	0.059	29.063 ^a	3	0	82.873 ^a	12	0	82.082 ^a	12	0	100.749 ^a	9	0
Reference Group	70.362 ^a	12	0	52.954 ^a	4	0	125.274 ^a	16	0	99.778 ^a	16	0	174.148 ^a	12	0
Convivence	61.237 ^a	12	0	16.115 ^a	4	0.003	137.299 ^a	16	0	146.903 ^a	16	0	61.356 ^a	12	0
cost effectiveness	145.981 ^a	9	0	31.365 ^a	3	0	77.527 ^a	12	0	47.662 ^a	12	0	123.074 ^a	9	0
trust and security	116.258 ^a	9	0	79.898 ^a	3	0	101.697 ^a	12	0	61.594 ^a	12	0	102.243 ^a	9	0
financial literacy	69.758 ^a	9	0	75.274 ^a	3	0	94.935 ^a	12	0	143.071 ^a	12	0	152.435 ^a	9	0
solutions are easily adaptable to changing customer needs	64.861 ^a	12	0	94.004 ^a	4	0	132.769 ^a	16	0	161.345 ^a	16	0	130.999 ^a	12	0

The table No.4.8 shows that Demographical Profile of the respondents and influence factors on Fintech. **Regular Environment:** The preferences or responses regarding the regular environment vary significantly across different demographic groups (age, gender, education level, employment status, and annual income). This suggests that factors related to the regular environment play a significant role in shaping individuals' choices or perceptions. **Social Influence:** There is a notable impact of social influence on people's decisions or attitudes, indicating that individuals are influenced by their social circles or networks when it comes to certain aspects. **Cash Back:** The preference for cash back options differs significantly among different demographic groups, implying that individuals from various backgrounds may have varying preferences or priorities related to cash back incentives. **Rewards:** While there's a slight indication of a difference in preferences for rewards across demographic groups, it's not as pronounced as in other factors. This suggests that factors other than rewards might play a more significant role in influencing decisions or attitudes. **Reference Group:** The concept of a reference group significantly affects individuals' choices or perceptions, indicating that people tend to compare themselves with others or seek validation from certain groups. **Convivence:** The aspect of convenience has a substantial impact on individuals' preferences or responses, suggesting that ease of use or accessibility is a crucial factor for many people. **Cost Effectiveness:** Different demographic groups show significant differences in their perception of cost effectiveness, highlighting varying priorities or considerations related to financial matters. **Trust and Security:** Trust and security concerns significantly influence individuals' decisions or attitudes across different demographic groups, indicating the importance of trustworthiness and security measures in consumer choices. **Financial Literacy:** There are significant differences in the perception of financial literacy among various demographic groups, implying varying levels of understanding or knowledge regarding financial matters. **Solutions are Easily Adaptable to Changing Customer Needs:** The adaptability of solutions to changing customer needs is highly valued across different demographic groups, suggesting a universal preference for flexible and responsive solutions.

Table No. 4.9 Distribution of age wise sample respondents over their problems on usage of Fintech

Distribution of age wise sample respondents over their problems on usage of Fintech				
	R	Mean Square	F	Sig.
Security Concerns	0.072	1.432	1.469	0.224
Technical Glitches	-0.276	46.411	29.575	0
Lack of Customer Support	0.427	7.465	17.557	0
Transaction Delays	0.088	1.619	2.388	0.07
Complexity of Terms and Conditions	0.195	22.947	17.974	0
Hidden Fees	0.321	14.216	9.03	0
Data Privacy Concerns	0.05	17.341	14.124	0
Inconsistent Performance	-0.025	0.736	0.651	0.583
Lack of Personalization	-0.355	21.064	12.712	0

Table No. 4.9 shows that Distribution of age wise sample respondents over their problems on usage of Fintech. **Security Concerns :** There is a weak positive association ($R = 0.072$) between security concerns and age, suggesting that as age increases, there is a slight tendency for security concerns to also increase. However, this association is not statistically significant ($\text{Sig.} = 0.224$), indicating that age alone may not be a strong predictor of security concerns. **Technical Glitches :** There is a moderate

negative association ($R = -0.276$) between technical glitches and age. This suggests that as age increases, there is a tendency for technical glitches to decrease. This association is statistically significant ($\text{Sig.} = 0$), indicating that age is a predictor of technical glitches. **Lack of Customer Support** : There is a moderate positive association ($R = 0.427$) between lack of customer support and age. This suggests that as age increases, there is a tendency for concerns about lack of customer support to also increase. This association is statistically significant ($\text{Sig.} = 0$), indicating that age is a predictor of lack of customer support concerns. **Transaction Delays** : There is a weak positive association ($R = 0.088$) between transaction delays and age. This suggests that as age increases, there is a slight tendency for concerns about transaction delays to increase. However, this association is not statistically significant ($\text{Sig.} = 0.07$), indicating that age alone may not be a strong predictor of transaction delays concerns. **Complexity of Terms and Conditions** : There is a moderate positive association ($R = 0.195$) between complexity of terms and conditions and age. This suggests that as age increases, there is a tendency for concerns about the complexity of terms and conditions to also increase. This association is statistically significant ($\text{Sig.} = 0$), indicating that age is a predictor of concerns regarding the complexity of terms and conditions. **Hidden Fees** : There is a moderate positive association ($R = 0.321$) between hidden fees and age. This suggests that as age increases, there is a tendency for concerns about hidden fees to also increase. This association is statistically significant ($\text{Sig.} = 0$), indicating that age is a predictor of concerns regarding hidden fees. **Data Privacy Concerns** : There is a weak positive association ($R = 0.05$) between data privacy concerns and age. This suggests that as age increases, there is a slight tendency for concerns about data privacy to increase. However, this association is not statistically significant ($\text{Sig.} = 0.124$), indicating that age alone may not be a strong predictor of data privacy concerns. **Inconsistent Performance** : There is a weak negative association ($R = -0.025$) between inconsistent performance and age. This suggests that as age increases, there is a slight tendency for concerns about inconsistent performance to decrease. However, this association is not statistically significant ($\text{Sig.} = 0.583$), indicating that age alone may not be a strong predictor of concerns regarding inconsistent performance. **Lack of Personalization** : There is a moderate negative association ($R = -0.355$) between lack of personalization and age. This suggests that as age increases, there is a tendency for concerns about lack of personalization to decrease. This association is statistically significant ($\text{Sig.} = 0$), indicating that age is a predictor of concerns regarding lack of personalization.

Table No. 4.10 Distribution of Education Level wise sample respondents over their problems on usage of Fintech

Distribution of Education Level wise sample respondents over their problems on usage of Fintech				
	R	Mean Square	F	Sig.
Security Concerns	-0.497	16.389	23.74	0
Technical Glitches	-0.002	31.855	19.514	0
Lack of Customer Support	-0.029	6.23	15.003	0
Transaction Delays	-0.138	11.414	23.357	0
Complexity of Terms and Conditions	0.004	9.622	6.748	0
Hidden Fees	-0.022	13.62	8.925	0
Data Privacy Concerns	-0.189	4.677	3.363	0.011
Inconsistent Performance	-0.268	7.833	7.843	0
Lack of Personalization	0.295	27.172	18.737	0

Table 4.10 shows that ,Security Concerns: There is a strong negative association ($R = -0.497$) between security concerns and education level. This indicates that as education level increases, there is a significant tendency for security concerns to decrease. This association is statistically significant ($\text{Sig.} = 0$), suggesting that education level is a strong predictor of security concerns. **Technical Glitches :** There is a negligible association ($R = -0.002$) between technical glitches and education level. This suggests that education level does not significantly predict technical glitches. However, the association is statistically significant ($\text{Sig.} = 0$), which might suggest a very subtle trend. **Lack of Customer Support :** There is a weak negative association ($R = -0.029$) between lack of customer support and education level. This suggests that as education level increases, there is a slight tendency for concerns about lack of customer support to decrease. This association is statistically significant ($\text{Sig.} = 0$), indicating that education level is a predictor of concerns regarding lack of customer support. **Transaction Delays :** There is a moderate negative association ($R = -0.138$) between transaction delays and education level. This indicates that as education level increases, there is a tendency for concerns about transaction delays to decrease. This association is statistically significant ($\text{Sig.} = 0$), suggesting that education level is a predictor of concerns regarding transaction delays. **Complexity of Terms and Conditions :** There is a negligible positive association ($R = 0.004$) between the complexity of terms and conditions and education level. This suggests that education level does not significantly predict concerns about the complexity of terms and conditions. However, the association is statistically significant ($\text{Sig.} = 0$), indicating a subtle trend. **Hidden Fees :** There is a weak negative association ($R = -0.022$) between hidden fees and education level. This suggests that as education level increases, there is a slight tendency for concerns about hidden fees to decrease. This association is statistically significant ($\text{Sig.} = 0$), indicating that education level is a predictor of concerns regarding hidden fees. **Data Privacy Concerns :** There is a moderate negative association ($R = -0.189$) between data privacy concerns and education level. This suggests that as education level increases, there is a tendency for concerns about data privacy to decrease. This association is statistically significant ($\text{Sig.} = 0.011$), indicating that education level is a predictor of concerns regarding data privacy. **Inconsistent Performance:** There is a moderate negative association ($R = -0.268$) between inconsistent performance and education level. This indicates that as education level increases, there is a tendency for concerns about inconsistent performance to decrease. This association is statistically significant ($\text{Sig.} = 0$), suggesting that education level is a predictor of concerns regarding inconsistent performance. **Lack of Personalization :** There is a moderate positive association ($R = 0.295$) between lack of personalization and education level. This suggests that as education level increases, there is a tendency for concerns about lack of personalization to increase. This association is statistically significant ($\text{Sig.} = 0$), indicating that education level is a predictor of concerns regarding lack of personalization.

Table No. 4.11 Distribution of Employment Status wise sample respondents over their problems on usage of Fintech

Distribution of Employment Status wise sample respondents over their problems on usage of Fintech				
	R	Mean Square	F	Sig.
Security Concerns	0.027	6.613	7.559	0
Technical Glitches	0.282	9.87	4.821	0.001
Lack of Customer Support	0.276	7.627	19.611	0
Transaction Delays	-0.05	2.923	4.505	0.002
Complexity of Terms and Conditions	-0.274	17.97	14.168	0

Hidden Fees	0.156	21.88	15.969	0
Data Privacy Concerns	0.416	25.134	25.015	0
Inconsistent Performance	0.326	11.892	12.896	0
Lack of Personalization	-0.247	44.604	39.782	0

The table No. 4.11 **Security Concerns:** There is a weak positive association ($R = 0.027$) between security concerns and employment status. This suggests that there may be a slight tendency for security concerns to increase with certain employment statuses, but the association is not statistically significant ($\text{Sig.} = 0.559$). **Technical Glitches:** There is a moderate positive association ($R = 0.282$) between technical glitches and employment status. This indicates that certain employment statuses may be associated with a higher likelihood of experiencing technical glitches. The association is statistically significant ($\text{Sig.} = 0.001$), suggesting that employment status is a predictor of technical glitches. **Lack of Customer Support :** There is a moderate positive association ($R = 0.276$) between lack of customer support and employment status. This suggests that certain employment statuses may be associated with a higher likelihood of experiencing issues with customer support. The association is statistically significant ($\text{Sig.} = 0$), indicating that employment status is a predictor of lack of customer support concerns. **Transaction Delays:** There is a weak negative association ($R = -0.05$) between transaction delays and employment status. This suggests that certain employment statuses may be associated with a slightly lower likelihood of experiencing transaction delays. The association is statistically significant ($\text{Sig.} = 0.002$), indicating that employment status is a predictor of concerns regarding transaction delays. **Complexity of Terms and Conditions:** There is a strong negative association ($R = -0.274$) between the complexity of terms and conditions and employment status. This suggests that certain employment statuses may be associated with a lower likelihood of perceiving terms and conditions as complex. The association is statistically significant ($\text{Sig.} = 0$), indicating that employment status is a predictor of concerns regarding the complexity of terms and conditions. **Hidden Fees:** There is a moderate positive association ($R = 0.156$) between hidden fees and employment status. This suggests that certain employment statuses may be associated with a higher likelihood of encountering hidden fees. The association is statistically significant ($\text{Sig.} = 0$), indicating that employment status is a predictor of concerns regarding hidden fees. **Data Privacy Concerns:** There is a strong positive association ($R = 0.416$) between data privacy concerns and employment status. This suggests that certain employment statuses may be associated with a higher likelihood of having concerns about data privacy. The association is statistically significant ($\text{Sig.} = 0$), indicating that employment status is a predictor of concerns regarding data privacy. **Inconsistent Performance:** There is a strong positive association ($R = 0.326$) between inconsistent performance and employment status. This suggests that certain employment statuses may be associated with a higher likelihood of experiencing inconsistent performance. The association is statistically significant ($\text{Sig.} = 0$), indicating that employment status is a predictor of concerns regarding inconsistent performance. **Lack of Personalization:** There is a strong negative association ($R = -0.247$) between lack of personalization and employment status. This suggests that certain employment statuses may be associated with a lower likelihood of perceiving lack of personalization as an issue. The association is statistically significant ($\text{Sig.} = 0$), indicating that employment status is a predictor of concerns regarding lack of personalization.

Table No. 4.12 Distribution of Annual Income wise sample respondents over their problems on usage of Fintech

Distribution of Annual Income wise sample respondents over their problems on usage of Fintech				
	R	Mean Square	F	Sig.
Security Concerns	0.255	15.54	20.025	0
Technical Glitches	0.364	29.583	16.378	0
Lack of Customer Support	-0.253	11.718	32.079	0
Transaction Delays	-0.202	11.165	20.543	0
Complexity of Terms and Conditions	0.217	9.463	6.452	0
Hidden Fees	-0.237	39.122	31.973	0
Data Privacy Concerns	-0.223	65.308	118.271	0
Inconsistent Performance	-0.086	28.503	38.534	0
Lack of Personalization	0.458	83.819	108.425	0

Table No.4.12 shows that **Security Concerns:** There is a moderate positive association ($R = 0.255$) between security concerns and annual income. This suggests that as annual income increases, there is a tendency for security concerns to also increase. The association is statistically significant ($\text{Sig.} = 0$), indicating that annual income is a predictor of security concerns. **Technical Glitches:** There is a strong positive association ($R = 0.364$) between technical glitches and annual income. This indicates that as annual income increases, there is a significant tendency for technical glitches to increase. The association is statistically significant ($\text{Sig.} = 0$), suggesting that annual income is a predictor of technical glitches. **Lack of Customer Support:** There is a moderate negative association ($R = -0.253$) between lack of customer support and annual income. This suggests that as annual income increases, there is a tendency for concerns about lack of customer support to decrease. The association is statistically significant ($\text{Sig.} = 0$), indicating that annual income is a predictor of lack of customer support concerns. **Transaction Delays:** There is a moderate negative association ($R = -0.202$) between transaction delays and annual income. This suggests that as annual income increases, there is a tendency for concerns about transaction delays to decrease. The association is statistically significant ($\text{Sig.} = 0$), indicating that annual income is a predictor of concerns regarding transaction delays. **Complexity of Terms and Conditions:** There is a weak positive association ($R = 0.217$) between the complexity of terms and conditions and annual income. This suggests that as annual income increases, there is a slight tendency for concerns about the complexity of terms and conditions to increase. The association is statistically significant ($\text{Sig.} = 0$), indicating that annual income is a predictor of concerns regarding the complexity of terms and conditions. **Hidden Fees:** There is a moderate negative association ($R = -0.237$) between hidden fees and annual income. This suggests that as annual income increases, there is a tendency for concerns about hidden fees to decrease. The association is statistically significant ($\text{Sig.} = 0$), indicating that annual income is a predictor of concerns regarding hidden fees. **Data Privacy Concerns:** There is a moderate negative association ($R = -0.223$) between data privacy concerns and annual income. This suggests that as annual income increases, there is a tendency for concerns about data privacy to decrease. The association is statistically significant ($\text{Sig.} = 0$), indicating that annual income is a predictor of concerns regarding data privacy.

Table 4. 13 Measurement to avoid the risk using of Fintech Services

Measurement	Mean	Std. Deviation	Kurtosis	
	Statistic	Statistic	Statistic	Std. Error
How often do you update your passwords and security settings on FinTech platforms	2.63	1.300	-1.120	0.329
How likely are you to use multi-factor authentication on FinTech platforms	2.87	1.137	-1.268	0.329
How often do you back up your financial data stored on FinTech platforms	2.70	1.424	-1.291	0.329
How likely are you to use secure and verified payment methods provided by FinTech platforms	3.07	0.935	0.609	0.329
How likely are you to limit the amount of personal and financial information shared with FinTech platforms	4.15	0.848	-1.123	0.329
How much do you rely on user reviews and ratings to assess the security and reliability of FinTech platforms before using them	2.34	1.056	-0.851	0.329

The table No. 4.13 reveals that , the mean score for updating passwords and security settings is 2.63, with a standard deviation of 1.3. This suggests that while some users are diligent about updating their security measures, others may not do so as frequently. Similarly, the likelihood of using multi-factor authentication has a mean score of 2.87 with a standard deviation of 1.137, indicating a somewhat moderate inclination towards this additional security measure. When it comes to backing up financial data stored on FinTech platforms, respondents seem to be moderately consistent, with a mean score of 2.70 and a higher standard deviation of 1.424, indicating more variability in behavior. The likelihood of using secure and verified payment methods provided by FinTech platforms has a mean score of 3.07, indicating a relatively positive attitude towards these methods. However, the standard deviation of 0.935 suggests some diversity in respondents' views. Interestingly, respondents appear more cautious when it comes to limiting the amount of personal and financial information shared with FinTech platforms, with a mean score of 4.15 and a low standard deviation of 0.848, indicating a more consistent inclination towards privacy protection. Lastly, when assessing the security and reliability of FinTech platforms, respondents seem to rely moderately on user reviews and ratings, with a mean score of 2.34 and a standard deviation of 1.056.

5. Conclusion

The analysis of Fintech services adoption in the rural area of Tirupati reveals intriguing patterns in user behavior across various demographics. Among the surveyed services, Paytm emerges with the highest mean usage score, closely followed by Google Pay and SBI Yono, indicating their popularity among respondents. Conversely, Mobiwik exhibits the lowest mean usage score, suggesting comparatively lower adoption levels. Notably, Google Pay demonstrates the lowest standard deviation, implying more consistent usage levels among respondents. These findings underscore significant differences in mean usage levels among Fintech services, supported by low p-values and high F-values in the statistical analysis.

Further investigation into usage patterns among different demographic segments reveals compelling insights. While Mobiwik, Airtel Payment, and Google Pay show relatively higher mean usage scores among a specified gender, SBI Yono stands out with the highest mean usage score among individuals with a specified education level. Conversely, BHIM UPI records the lowest mean usage score within

this group. Similarly, BHIM UPI exhibits the highest mean usage score among individuals with a specified employment status, contrasting with Paytm's comparatively lower usage. Additionally, Paytm garners the highest mean usage score among individuals with a specified annual income, while Phone Pe trails with a lower mean usage score within this cohort. These disparities underscore the significance of demographic factors in shaping Fintech service adoption patterns. While there are notable variations in concerns such as security, technical glitches, lack of customer support, transaction delays, complexity of terms and conditions, hidden fees, data privacy, inconsistent performance, and lack of personalization across different demographic groups, certain patterns emerge. For instance, concerns related to security, technical glitches, and inconsistent performance tend to increase with higher income levels, while concerns about lack of personalization decrease with higher education levels. Overall, understanding these demographic variations and their implications is crucial for businesses and policymakers to tailor their offerings and services effectively, ensuring they meet the diverse needs and preferences of different consumer segments. Overall, these findings suggest a nuanced landscape of security practices and attitudes among users of FinTech platforms, with varying degrees of caution and reliance on security measures. There seems to be room for improvement in certain areas, such as updating security settings and utilizing multi-factor authentication, while privacy concerns and reliance on user feedback also remain significant considerations for users.

In conclusion, the study unveils nuanced variations in Fintech service adoption across demographic segments in the rural area of Tirupati. Understanding these patterns is crucial for Fintech providers to tailor their offerings effectively, ensuring widespread adoption and addressing the diverse needs of rural communities. Further research into the underlying factors driving these disparities can inform targeted strategies to enhance financial inclusion and promote equitable access to digital financial services in rural areas. Understanding users' attitudes and behaviors towards security measures within FinTech platforms is essential for providers to design effective strategies that promote trust, security, and user empowerment. By addressing concerns, enhancing transparency, and promoting best practices, FinTech platforms can continue to evolve as secure and reliable tools for financial transactions in the digital age.

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