

Examining the Role of Fintech in Financial Inclusion and its Impact on Financial Services to Underbanked Population in India

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Abstract

This study explores the changing "landscape of financial inclusion in India", concentrating on the role of Fintech as an initiator and its effects on the unbanked population. The intriguing setting for this study is India's diversified socioeconomic structure paired with a developing Fintech environment. The goal of the study is to find out how much technological advances in finance have advanced financial inclusion, affordability, and accessibility, particularly in marginalized populations.

Descriptive statistics, two-sample t-tests, regression, ANOVA, correlation, and two-sample z-tests were used in statistical analyses to find trends, causal connections, and correlations using a large dataset of secondary data sources and Fintech stock values. The results highlight Fintech's ability to solve issues with financial inclusion while outlining differences in its effects on various demographic groups.

To maximize the benefits of Fintech, suggestions for policy emphasize the necessity for stakeholder cooperation and ongoing regulatory support. To ensure that no part of the underbanked population remains behind, initiatives to improve knowledge of finances and equally distribute the benefits of Fintech are essential.

In summary, this study offers important new perspectives on the complex interactions in India between Fintech, the underbanked, and financial inclusion. India may direct itself toward more equitable and sustainable financial systems, promoting economic expansion and bettering the well-being of millions by utilizing the revolutionary capabilities of Fintech while solving related concerns.

Keywords: Financial inclusion, Fintech, Statistical Analysis

1. Introduction

The necessity of inclusion of finance, which desires to deliver unbanked and underbanked individuals' entrance to reasonable and reliable banking benefits, is to stimulate economic development and relieve destitution. The inclusion of finance has evolved into a powerful worldwide schedule object. Also, the importance of Fintech has thoroughly altered the financial terrain by delivering ground-breaking resolutions that complete the gap between underserved areas and traditional financial services. With its massive and diversified inhabitants, India creates a unique study for investigating the revolutionary chances of Fintech in promoting the inclusion of finance. With a focus on its results on the "underbanked population", this research analyses the problematic position of "Fintech in India's objective of inclusion of finance". This study plans to formulate how Fintech is altering the affordability, inclusivity, and accessibility of banking benefits for the "underbanked population in India" via an in-

depth examination of the current environment, case studies, and regulatory framework. This research strives to supply helpful knowledge for Fintech entrepreneurs, policymakers, and financial institutions examining to advance unbiased growth in the dynamic Indian financial industry by examining both possibilities and complications.

1.1 Description of Study Area

The focus of this study is India, a large and diverse country in South Asia. It examines how Fintech might improve the inclusion of finance, especially for the underbanked people. India is a perfect case study for this research because of its distinctive socioeconomic climate, legal framework, and technological breakthroughs.

Geographic Overview:

With an entire region of around 3.30 million square kilometers, India is the 7th-most crowded nation in the globe. Pakistan begins its northwest edge, Myanmar in the southeast, observed by Nepal and China in the north, Bhutan in the northeast, and Bangladesh in the east [1]. The "Indian Ocean" encircles it to the south. India's enormous physical diversity includes the mountain range of the Himalayas, and the Thar Desert, which is composed of lush forests, a long coastline, and fertile plains, making it an ideal location to study the benefits and problems of inclusion of finance.

Population and Diversity:

More than 1.30 billion residuals call India houses, conveying a wide scope of races, faiths, civilizations, and languages. With a sizable province of the population present in rustic areas with short directions to financial benefits, this multiplicity additionally contributes to financial inequities [2]. The study region encompasses rural as well as urban environments, recognizing the differences in the difficulties associated with the inclusion of finance and the implementation of Fintech in these situations.

Financial Landscape:

Traditional banking organizations and a quickly growing Fintech ecosystem combine to build up India's financial sector. Many private and public banks, insurance companies, NBFCs, and microfinance organizations have their headquarters there. The principal regulatory body in charge of policing the financial industry is the RBI.

Fintech Growth:

India has had an enormous increase in Fintech firms and developments over the last ten years. These include peer-to-peer financing websites including Kiva, digital banking apps including Groww, and mobile payment systems including Paytm and PhonePe [3]. The country's dynamic Fintech scene has been supported by favorable government laws supporting digital finance, improved access to the internet, and expanding smartphone adoption.

Regulatory Environment:

Fintech regulation in India is changing quickly to keep up with the sector's expansion and protect the interests of customers. For Fintech companies, the "Aadhar" system, a "biometric identification project," has been crucial in streamlining the consumer onboarding process [4]. The study area includes a review

of various rules, particularly those that are unique to initiatives such as "Pradhan Mantri Jan-Dhan Yojana" that enrich the inclusion of finance.

Challenges and Opportunities:

India has many obstacles on its path to inclusion in finance, including income disparity, infrastructure shortages, and low financial literacy. Fintech offers a chance to tackle these problems with creative, technologically advanced solutions. This study investigates how Fintech efforts overcome these obstacles and how they have an impact on underbanked individuals' capacity to acquire and pay for financial products and services.

1.2 Research Aim and Objective

Research Aim:

The proper goal of this paper is to thoroughly analyze and evaluate how Fintech is increasing the "inclusion of finance in India" while concentrating on its effects on the unbanked people. In an extensive and changing Indian environment, this study seeks to get a detailed knowledge of how Fintech innovations are transforming the inclusivity, accessibility, and affordability of economical products and services. This research seeks to explain the possibilities and difficulties faced by Fintech for advancing the inclusion of finance, delivering useful insights for policymakers, Fintech practitioners, and financial institutions via an in-depth investigation of empirical evidence, regulatory dynamics, and the current landscape.

Research Objectives:

- Identifying gaps and obstacles that prohibit the utilization of financial services, estimating the level of "inclusion of finance in India", and comprehending the socioeconomic circumstances of the underbanked population are all necessary for analyzing the present condition of inclusion of finance in India.
- Investigating the function of Fintech in improving the "inclusion of finance" entails a detailed analysis of different Fintech innovations, their effect, and their adoption rates on improving the inclusion of finance between communities and underbanked individuals.
- To assess Policy Initiatives focuses and Regulatory Frameworks on investigating the regulatory climate in which Fintech functions in India, with explicit awareness of policies and endeavors desired at advancing inclusion of finance.

Estimating the Result of "Fintech on the Underbanked Population" affects assessing the real-world effect of Fintech resolutions on the underbanked, assuming factors like a key to banking services, economic empowerment, and financial literacy.

Through these objectives, this research aims to deliver a wide and holistic knowledge of the intricate interplay between "Fintech" and "inclusion of finance in India", delivering perspicuity that can broadcast strategies for promoting more prominent inclusion of finance and access between the underbanked population.

2. Literature Review

According to the author Asif, et al., 2023, the percentage of Indians who now have bank accounts has increased in recent years and is thought to be close to 80%. India's Fintech businesses are becoming more well-known as the "Government of India" picks up the effort to give the "underbanked segment of the population" accessibility to finance usefulness. To service the "underbanked segments of the population" and deliver sturdy operating conditions for fintech businesses, India must strive to improve the inclusion of finance [5]. This study sought to examine the impact of fintech and digital financial services on the inclusion of finance in India. The middle class in particular has benefited greatly from fintech enterprises' contributions to the inclusion of finance in this country.

According to Pandey, et al. 2022, state that there is a greater emphasis on FI throughout the world, particularly in emerging nations, to boost financial development and reduce deprivation. However, there are significant differences in access to financial services that persist globally. The goal of the current study is to ascertain how successful normal, everyday people are at obtaining financial inclusiveness. It does this by looking at the effects of financial efforts, financial literacy, and drivers of inclusion of finance [6] on sustainable growth. As FI drivers, utilization, digitalization, and technology are all taken into consideration. This study adopts a new strategy and examines how economic literacy mediates the factors of sustainable growth. The authors agreed that there was a strong correlation between credit and deposit penetration in Indian FI. Financial efforts aid FI in growing. The analysis emphasizes the beneficial influence of financial efforts on long-term growth.

According to the author Goswami, et al. 2022, India is one of the biggest nations in the world, rich in resources, marble, and tourism. However, a well-known tribal and rural region has weak financial development, destitution, and exclusion from mainstream banking institutions. The metamorphosis of financial technology opens up opportunities for growth across the whole economy. Economic technology and mobile money benefits have grown rapidly in emerging developing economies [7]. The expansion of digital transformation has undoubtedly also been a driving force behind FinTech projects, as evidenced by the fact that FinTech mobile money and digital wallets fill the gap in the financial infrastructure by using cutting-edge technology and allow users to conduct financial transactions reliably and affordably by removing physical barriers.

Author Ozili, 2022, claims that fintech, "central bank digital currency", and cryptocurrencies will boost the inclusion of finance by giving unbanked individuals another way to access formal financial services. "CBDC" and Fintech services can ensure liquidity even if Bitcoin introduces risks that might be mitigated by adequate regulation. This article discusses the significance of cryptocurrencies, fintech, and "central bank digital currency" in fostering the inclusion of finance and financial stability [8]. It also describes a number of problems with "CBDC", fintech, and cryptocurrencies in these areas. Although "CBDC", Fintech, or cryptocurrencies can affordably assist unbanked individuals and expand financial services to them, there are risk factors that have to be taken into account when employing them to promote the inclusion of finance and hold the stability of the economy.

According to the author Datta, 2023, one of the major challenges faced by communities during times of uncertainty and catastrophe is gaining access to proper financial services. Applying technical advancements in the finance sector, such as mobile banking and digital currency transfers, at the side organization help and administrative frameworks, has the capacity to reach out to those who don't as of now have access to principal budgetary needs. In many respects, fintech is essential to improving India's level of inclusion in finance [9]. FinTech can only successfully leverage the advantages of inclusion of

finance if the potential hazards are also taken into consideration. There is no question that without coordinated efforts between traditional financial institutions and other FinTech organizations, attempts to achieve universal inclusion of finance in India would not be productive.

3. Methodology

3.1 Data Sources

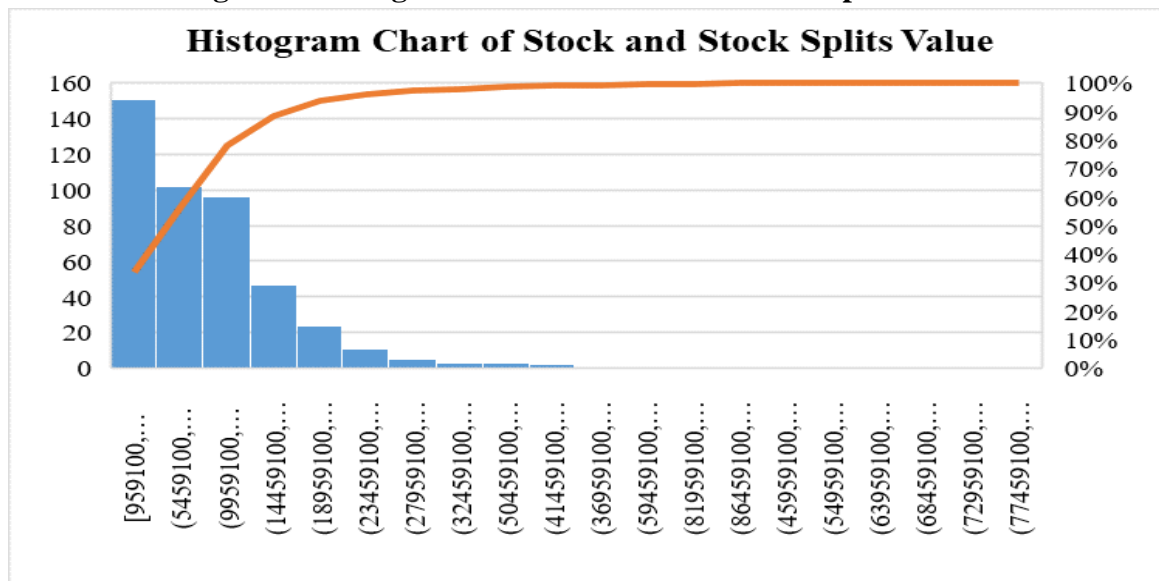
For the study of the part of “Fintech in the inclusion of finance” and its effect on financial benefits to the “underbanked population in India”, secondary data correlated to the stock values of Fintech companies can deliver useful understanding. Stock market exchanges like the BSE and NSE in India can be reached directly for information on the stock values of fintech businesses [10]. Frequently, these exchanges release historical stock price information for corporations that are publicly traded, particularly Fintech companies. Accessibility to historical stock price information, performance measures, and financial reports of Indian Fintech companies may frequently be found on financial information platforms including Reuters, Bloomberg, or financial parts of news portals. Detailed statistics, comprising financial performance and historical stock price measures for Fintech companies, are available from professional financial data suppliers including Thomson Reuters Eikon, Bloomberg Terminal, or FactSet. Datasets relating to the stock prices and regulatory applications of Fintech companies may be made available by regulatory organizations like the NASDAQ and SEBI. Also, some research platforms and academic databases deliver the key to historical stock price data for research goals.

To understand volatility, patterns, and the general success of Fintech firms in India, it is necessary to study the secondary statistics on Fintech stock values when it has been received [11]. To evaluate the effects of Fintech on financial access and amenities for the underbanked population in India, this data can be combined with secondary data sources from the academic sectors, businesses, and government.

3.2 Statistical Analysis

The study on the "role of Fintech in the inclusion of finance and its impact on financial services to the underbanked population in India" heavily relies on statistical analysis. Metrics of the primary tendency (mean, mode, and median), variability (standard deviation, variance), and data pattern (kurtosis, skewness) are all included in descriptive statistics, which give a succinct overview of the dataset. These statistics make it simpler to recognize trends, anomalies, and patterns by assisting academics in understanding the peculiarities of Fintech data [12]. Hypothesis testing requires the use of statistical tests such as ANOVA, t-tests, and z-tests. These tests can be used by researchers to determine whether there exist substantial variations between groups (such as non-users and users of fintech) or situations (such as before and after integrating fintech).

Figure 1: Histogram Chart of Stock and Stock Splits Value



Drawing relevant findings and validating research hypotheses are both enhanced by this. The direction and strength of correlations between variables are assessed by correlation analysis. It can be utilized in this situation to evaluate the relationship between the inclusion of finance measures and Fintech acceptance, offering insights into the strength of the relationship between these variables. Researchers can investigate the causal connections between variables by using regression modelling [13]. The X-axis values are interims that appearance the measure of values which the dimensions fall under. Also, the Y-axis demonstrates the number of periods that the values arisen within the interims set by the X-axis. For example, it can assist in figuring out whether financial technology adoption significantly predicts better inclusion of finance amongst the general population of unbanked. Additionally, it can aid in determining the variables that affect how Fintech affects the inclusion of finance. When evaluating means between two groups, including users and non-users of Fintech or other demographic categories, two-sample z-tests and t-tests are useful.

Figure 2: Fluctuation of Dividends in Feb 2021



These tests can show how Fintech affects distinct populations differently, assisting in the development of tailored policy suggestions [14]. Via numerical measures or effect sizes, statistical analysis helps

researchers to consider the level of Fintech's influence on the inclusion of finance. This offers a thorough foundation for evaluating the relevance of findings in real-world situations.

4. Findings and Analysis

4.1 Analysis of Descriptive Statistics

Figure 3: Descriptive Statistical Analysis of Fintech Stock Price

<i>Share price</i>		<i>High Price</i>		<i>Low Price</i>		<i>Medium Price</i>		<i>Stock</i>		<i>Dividends</i>		<i>Stock Splits</i>	
Mean	66.5	Mean	69.2	Mean	63.7	Mean	66.4	Mean	10468097.3	Mean	5.4	Mean	59812810.0
Standard Error	1.9	Standard Error	1.9	Standard Error	1.8	Standard Error	1.9	Standard Error	469822.2	Standard Error	0.1	Standard Error	3036113.7
Median	63.0	Median	65.1	Median	60.2	Median	62.9	Median	9017500.0	Median	6.0	Median	41844400.0
Mode	68.0	Mode	101.0	Mode	65.7	Mode	99.6	Mode	#N/A	Mode	7.0	Mode	9807000.0
Standard Deviation	39.5	Standard Deviation	40.9	Standard Deviation	37.9	Standard Deviation	39.4	Standard Deviation	9944261.4	Standard Deviation	1.9	Standard Deviation	64262414.2
Sample Variance	1559.7	Sample Variance	1675.6	Sample Variance	1439.4	Sample Variance	1549.3	Sample Variance	98888335131939.1	Sample Variance	3.6	Sample Variance	4129657872725740.0
Kurtosis	-0.4	Kurtosis	-0.5	Kurtosis	-0.4	Kurtosis	-0.4	Kurtosis	17.7	Kurtosis	-0.7	Kurtosis	25.3
Skewness	0.7	Skewness	0.7	Skewness	0.7	Skewness	0.7	Skewness	3.3	Skewness	-0.4	Skewness	3.8
Range	151.5	Range	159.0	Range	147.9	Range	153.9	Range	85981300.0	Range	8.0	Range	607619000.0
Minimum	14.1	Minimum	17.7	Minimum	13.6	Minimum	14.6	Minimum	959100.0	Minimum	1.0	Minimum	963800.0
Maximum	165.7	Maximum	176.6	Maximum	161.5	Maximum	168.5	Maximum	86940400.0	Maximum	9.0	Maximum	608582800.0
Sum	29809.2	Sum	31007.3	Sum	28525.7	Sum	29727.8	Sum	4689707600.0	Sum	2423.0	Sum	26796138900.0
Count	448.0	Count	448.0	Count	448.0	Count	448.0	Count	448.0	Count	448.0	Count	448.0
Confidence Level(95.0%)	3.7	Confidence Level(95.0%)	3.8	Confidence Level(95.0%)	3.5	Confidence Level(95.0%)	3.7	Confidence Level(95.0%)	923334.6	Confidence Level(95.0%)	0.2	Confidence Level(95.0%)	5966829.4

This descriptive analysis suggests understanding the general details about the variables of Fintech Stock Price. Also, this denotes the conceivable association between the variables [15]. Here 95% confidence level is taken to perform this analysis and it can be observed that the median values of the share price and the medium price are approximately nearer.

4.2 ANOVA Analysis

Figure 4: ANOVA Analysis of Fintech Stock Price

SUMMARY						
<i>Groups</i>	<i>Count</i>	<i>Sum</i>	<i>Average</i>	<i>Variance</i>		
25159000	447	4664548600	10435231.77	9.86251E+13		
5	447	2418	5.409395973	3.565202998		
ANOVA						
<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
Between Groups	2.434E+16	1	2.43378E+16	493.5418167	2.24015E-87	3.851904868
Within Groups	4.399E+16	892	4.93125E+13			
Total	6.832E+16	893				

This figure denotes the ANOVA analysis of the Fintech company where the F value is 493.5418167 and the total “df” is 893 [16]. Here also seemed that the F crit value is 3.851904868. By analysing an ANOVA test it can be defined the quantity of variability in the sets of data and also the ANOVA test help to observe if the variability is bigger between groups than within groups.

4.3 Correlation Analysis

Figure 5: Correlation Analysis of Fintech Stock Price

	<i>Share price</i>	<i>High Price</i>	<i>Low Price</i>	<i>Medium Price</i>	<i>Stock</i>	<i>Dividends</i>	<i>Stock Splits</i>
Share price	1						
High Price	0.997	1					
Low Price	0.997	0.996	1				
Medium Price	0.995	0.998	0.998	1			
Stock	-0.107	-0.082	-0.126	-0.103	1		
Dividends	-0.512	-0.508	-0.512	-0.510	0.171	1	
Stock Splits	-0.303	-0.283	-0.322	-0.304	0.942	0.384	1

The above figure denotes the correlation analysis of Fintech Stock Price. A correlation analysis is mainly used to assist an organization in choosing the variables that need to be explored additionally by the management of the company and also it authorizes instantaneous supposition testing. Here in this figure, the positive values [17] denote that both the variables rise in relation to each other, on another hand the negative correlation indicates that the two variables remain opposite in relation, that is if one grows other drops.

4.4 Regression Analysis

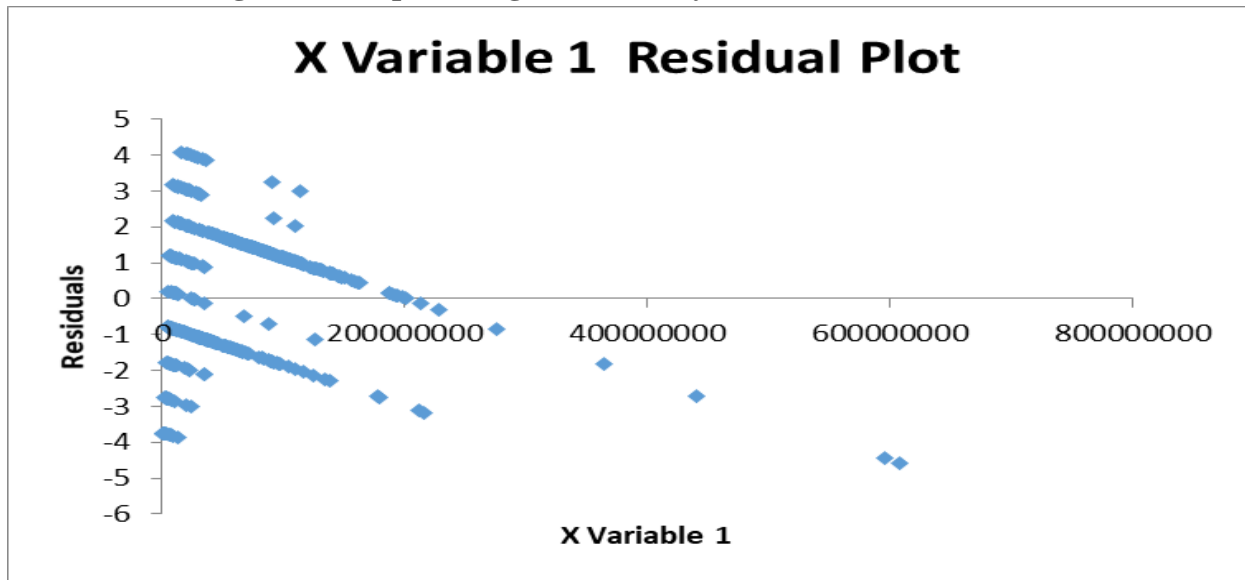
Figure 6: Regression Analysis of Fintech Stock Price

SUMMARY OUTPUT								
<i>Regression Statistics</i>								
Multiple R	0.384							
R Square	0.147							
Adjusted R Square	0.146							
Standard Error	1.744							
Observations	448							
<i>ANOVA</i>								
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>			
Regression	1	234.423482	234.423482	77.11388123	3.48365E-17			
Residual	446	1355.824286	3.039964767					
Total	447	1590.247768						
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	4.73444479	0.112593358	42.04905927	2.8009E-157	4.513165379	4.955724201	4.513165379	4.955724201
X Variable 1	1.12691E-08	1.28329E-09	8.781450975	3.48365E-17	8.74708E-09	1.37912E-08	8.74708E-09	1.37912E-08

By analyzing the image of regression analysis, it can be stated that all the values of the dependent variable mean are increasing because all information emanates out with a positive figure, which always

denotes that the dependent variable mean tends to rise when the independent value rises and the negative variables usually decrease as the independent variable's value rises.

Figure 7: Graph of Regression Analysis of Fintech Stock Price



According to this graph of regression analysis, the regression line, which depicts how a response variable changes when an explanatory variable changes, is a straight line [18]. The esteem of y may be anticipated by employing a regression line given the esteem of x. A regression line is found utilizing regression analysis.

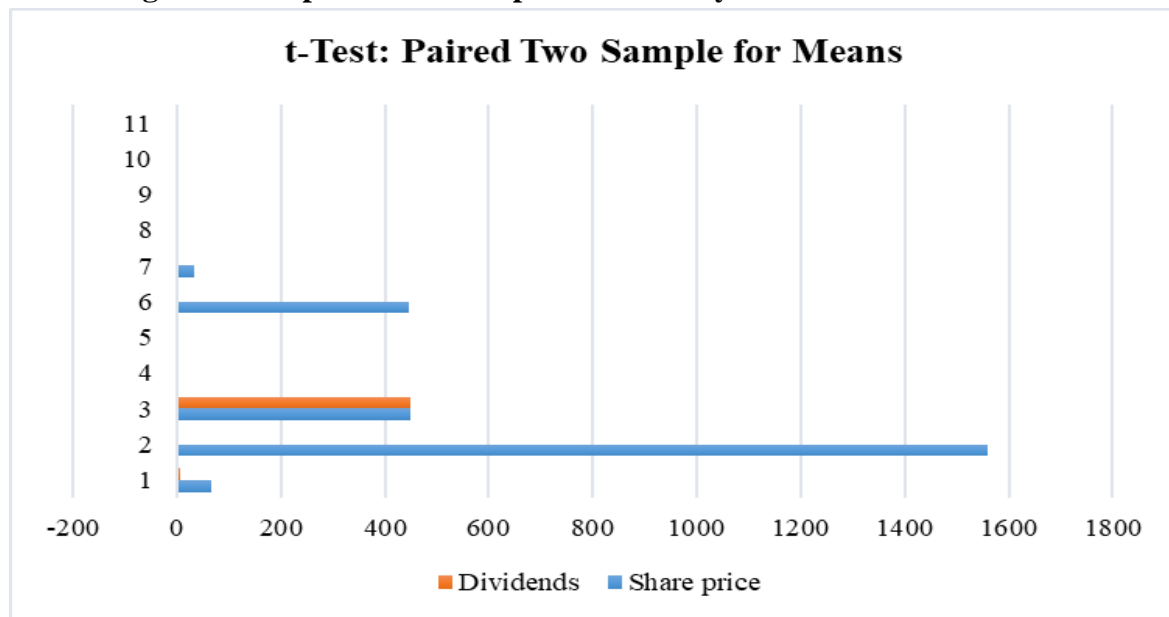
4.5 Two Sample t-Test Analysis

Figure 8: Two-Sample t-Test Analysis of Fintech Stock Price

t-Test: Paired Two Sample for Means		
	<i>Share price</i>	<i>Dividends</i>
Mean	66.53830365	5.408482143
Variance	1559.722934	3.55760127
Observations	448	448
Pearson Correlation	-0.511931583	
Hypothesized Mean Difference	0.3	
df	447	
t Stat	31.79752852	
P(T<=t) one-tail	3.9174E-117	
t Critical one-tail	1.648269625	
P(T<=t) two-tail	7.8348E-117	
t Critical two-tail	1.965285234	

By comprehending this figure, it can be said that the “df” value is 447 and the hypothesized mean difference of the paired two-sample test is 0.3. Performing this test, the sample means may be compared with test statistics and p-value, and it can be decided whether there is sufficient evidence to establish a difference between the two populations' means [19].

Figure 9: Graph of Two-Sample t-Test Analysis of Fintech Stock Price



Here from this graph, it can be said that the share price value of 2 is the maximum rather than the other dividends' and share price's values. Also, the minimum value seen from the graph is in the share price value of 7.

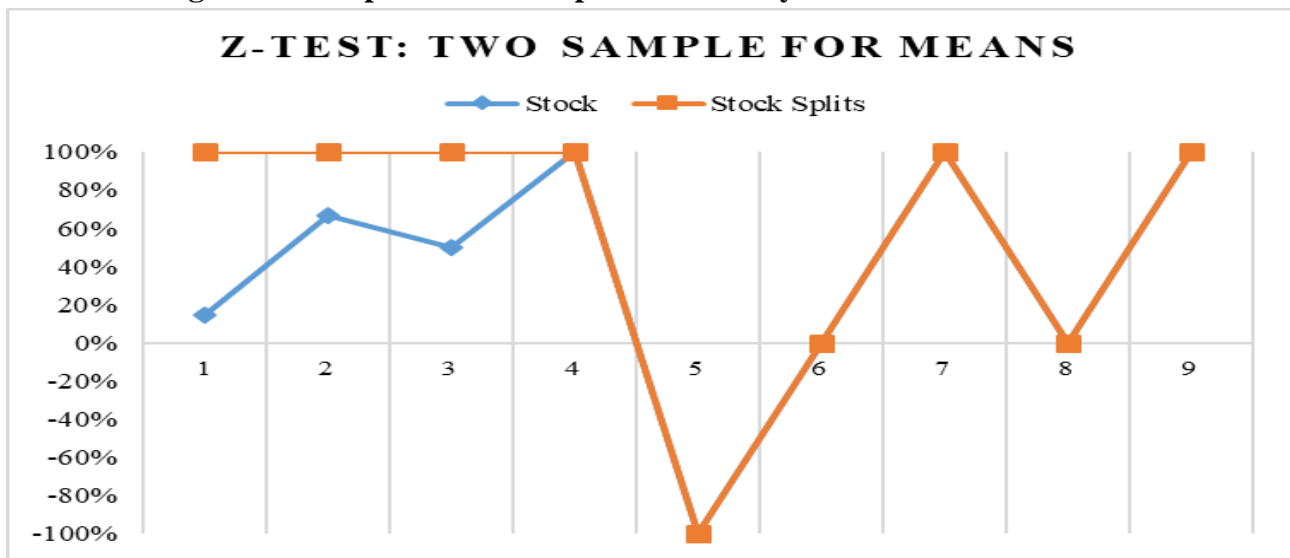
4.6 Two Sample z-Test Analysis

Figure 10: Two-Sample z-Test Analysis of Fintech Stock Price

z-Test: Two Sample for Means		
	<i>Stock</i>	<i>Stock Splits</i>
Mean	10468097.32	59812810.04
Known Variance	2	1
Observations	448	448
Hypothesized Mean Difference	0.3	
z	-603002353.5	
P(Z<=z) one-tail	0	
z Critical one-tail	1.644853627	
P(Z<=z) two-tail	0	
z Critical two-tail	1.959963985	

A parametric test called the two-sample Z hypothesis test compares the means of two separate sets of samples taken from a normal population. Here from this figure, it can be discussed that the z-critical two-tail value of this analysis is 1.959963985 and the z-value is -603002353.5 [20]. In other words, it is a test that determines whether or not the means of two populations are the same.

Figure 11: Graph of Two-Sample z-Test Analysis of Fintech Stock Price



Understanding this graph, it needs to explain that at the start of the graph, the stock splits remain the same in the first four values, but after that a sudden decrease is observed and it can be said that the stock values are growing rapidly day by day.

Financial services for India's underbanked population have seen a radical change because of fintech. Fintech has come in to fill the void left by a sizable portion of the country's population not having access to traditional banking. Financial transactions have been more easily available thanks to mobile wallets and digital payment systems like Paytm, PhonePe, and Google Pay, which let users send and receive money, pay bills, and even access credit services straight from their smartphones. Fintech has also been utilized by microfinance organizations and peer-to-peer loaning stages to supply credit to those who were already closed out of the official budgetary framework [21]. By using alternative information sources to assess financial soundness, such as computerized exchange histories and versatile utilization patterns, these stages increment back for both individuals and little ventures. Furthermore, fintech-driven financial education initiatives have improved the understanding of money among the underbanked, giving them the ability to make better financial decisions. In general, fintech has made accessible the economy in India, providing banking and inclusion of finance to millions who were previously neglected. It has increased access while simultaneously lowering costs associated with transactions, promoting development in the economy and enabling people to take part more actively in the nation's economy.

5. Recommendation

It recommends that policymakers give top priority to initiatives that make use of technological advances in Fintech to increase financial access in accordance with the thorough research on the function of Fintech in the inclusion of finance and its impact on banking services to the "underbanked population in India". Measures to improve understanding of finances should be considered along with additional governmental assistance and incentives for Fintech businesses. To ensure the efficacy and fair distribution of advantages, periodic monitoring and assessment of Fintech interventions should be developed. To fully utilize digital finance's chances of promoting the inclusion of finance in India, cooperation between the government, banking institutions, and Fintech firms is necessary.

6. Conclusion

The study has highlighted the potential for the revolution of fintech in promoting the inclusion of finance across India's underbanked population. Financial technology developments have shown they can improve affordability, close accessibility gaps, and give underprivileged people more power. Nevertheless, problems still exist, such as the necessity for ongoing technical adaptation and difficult regulatory issues. It will take coordinated efforts from governments, banks, and financial technology companies to fully fulfill the potential of Fintech. Fintech has the potential to significantly alter India's financial environment with the correct tactics, ultimately promoting inclusive growth in the economy and enhancing the financial security of the unbanked.

7. Acknowledgement

Put applicable sponsors acknowledgements in this section; do not place them on the first page of your paper or as a foot-note. Guide's name may be put either here or on the first page. Other supportive people's names can be mentioned in this section.

8. References

1. Raju, S. and Satish, M., 1989. The challenge of feminist geography: Gender and geography: an overview from India. *Journal of Geography in Higher Education*, 13(1), pp.102-104.
2. Davis, K., 1951. *The population of India and Pakistan* (Vol. 113, No. 2943, p. 611). Princeton, NJ: Princeton University Press.
3. Vijai, C., 2019. FinTech in India—opportunities and challenges. *SAARJ Journal on Banking & Insurance Research (SJBIR) Vol, 8*.
4. Prasad, P.M., 2006. Environment protection: role of regulatory system in India. *Economic and Political Weekly*, pp.1278-1288.
5. Asif, M., Khan, M.N., Tiwari, S., Wani, S.K. and Alam, F., 2023. The impact of fintech and digital financial services on financial inclusion in india. *Journal of Risk and Financial Management*, 16(2), p.122.
6. Pandey, A., Kiran, R. and Sharma, R.K., 2022. Investigating the impact of financial inclusion drivers, financial literacy and financial initiatives in fostering sustainable growth in North India. *Sustainability*, 14(17), p.11061.
7. Goswami, S., Sharma, R.B. and Chouhan, V., 2022. Impact of financial technology (Fintech) on financial inclusion (FI) in Rural India. *Universal Journal of Accounting and Finance*, 10(2), pp.483-497
8. Ozili, P.K., 2021. Big data and artificial intelligence for financial inclusion: benefits and issues. *Artificial Intelligence Fintech, and Financial Inclusion*
9. Datta, D., 2023. THE FUTURE OF FINANCIAL INCLUSION THROUGH FINTECH: A CONCEPTUAL STUDY IN POST PANDEMIC INDIA. *Sachetas*, 2(1), pp.11-17.
10. Adam, H., 2021. Fintech and entrepreneurship boosting in developing countries: A comparative study of India and Egypt. In *The Big Data-Driven Digital Economy: Artificial and Computational Intelligence* (pp. 141-156). Cham: Springer International Publishing
11. Gupta, M. and Verma, S., 2022. Impact Of Covid-19 Pandemic On Fintech And Financial Inclusion In India. *Indian Journal of Finance and Banking*, 11(1), pp.1-14.

12. Ifediora, C., Offor, K.O., Eze, E.F., Takon, S.M., Ageme, A.E., Ibe, G.I. and Onwumere, J.U., 2022. Financial inclusion and its impact on economic growth: Empirical evidence from sub-Saharan Africa. *Cogent Economics & Finance*, 10(1), p.2060551
13. Kaur, R. and Dharmadhikari, S.P., 2023. Artificial Intelligence Applied in Banking for Inclusion of Unbanked Population. *International Management Review*, 19(1)
14. Mhlanga, D., 2022. COVID-19 and digital financial inclusion: Policies and innovation that can accelerate financial inclusion in a post-COVID world through fintech. *African Journal of Development Studies*, 2022(si2), p.79
15. Noreen, M., Mia, M.S., Ghazali, Z. and Ahmed, F., 2022. Role of government policies to fintech adoption and financial inclusion: A study in Pakistan. *Universal Journal of Accounting and Finance*, 10(1), pp.37-46
16. Ozili, P.K., 2022. CBDC, Fintech and cryptocurrency for financial inclusion and financial stability. *Digital Policy, Regulation and Governance*, 25(1), pp.40-57
17. Pal, S., Chronicles Of a Digital Renaissance: Financial Inclusivity in The Indian Matrix. *IJFMR-International Journal For Multidisciplinary Research*, 5(3)
18. Senyo, P.K. and Karanasios, S., 2020, November. How do fintech firms address financial inclusion?. Association for Information Systems
19. Senyo, P.K. and Osabutey, E.L., 2020. Unearthing antecedents to financial inclusion through FinTech innovations. *Technovation*, 98, p.102155
20. SUNITA, R. and Siddik, M.M., 2023. A Study on Fintech and the Future of Financial Services with Reference to Chennai. *Journal of Survey in Fisheries Sciences*, 10(3S), pp.6550-6557
21. Zaidi, S.A.M. and Shah, S.A.A., 2023. Fintech contribution towards economic prosperity in Pakistan. *Pakistan Review of Social Sciences (PRSS)*, 4(1), pp.1-14