



DRIVERS OF FINTECH ADOPTION IN BUSINESS OPERATIONS: EVIDENCE FROM MICRO-ENTREPRENEURS IN VILLUPURAM DISTRICT, TAMIL NADU

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ABSTRACT

Financial Technology (FinTech) has transformed the financial services sector through innovations such as digital payments, mobile banking, internet banking and so on. Micro-level entrepreneurs increasingly depend on FinTech services for various activities of their business. However, the adoption of FinTech is influenced by factors such as awareness, perceived benefits, technological infrastructure, security concerns, and business needs. The present study examines the factors influencing the adoption and usage of FinTech services among micro-level entrepreneurs in Villupuram District, Tamil Nadu. The researchers selected a total of 450 entrepreneurs as sample and collected primary data through a well-structured questionnaire. The researchers applied the statistical tools of Cronbach Alpha, Factor Analysis, Descriptive statistics, Mann Whitney U Test and Kruskal Wallis Test. The study found that entrepreneurs have a moderate level of awareness of FinTech services and generally hold a positive perception towards their usage. Among the influencing factors, Convenience and Efficiency Factors emerged as the most important determinants of FinTech adoption, followed by Business and Customer-Oriented Factors and Economic Benefit Factors. The study also found that FinTech services help entrepreneurs improve business operations, financial transactions, and decision-making processes. The study concludes that FinTech plays a vital role in enhancing business efficiency and financial management among micro-level entrepreneurs. Therefore, improving awareness, digital infrastructure, security measures, and user support can further promote FinTech adoption and contribute to the growth and sustainability of micro-enterprises.

Key Words: Financial Management Excellence, FinTech, Digital wallets, digital literacy and entrepreneurs.

Introduction

Financial Technology (FinTech) has emerged as a revolutionary force in the financial services sector by integrating innovative technologies with financial activities. The rapid growth of digital payment systems, mobile banking, internet banking, digital wallets, online lending platforms, and other FinTech solutions has transformed the way businesses conduct financial transactions. FinTech offers convenience, speed, accessibility, and cost efficiency, making financial services more accessible to businesses of all sizes. Micro-level entrepreneurs play a significant role in economic development by generating employment opportunities, promoting local production, and contributing to income generation. In the current digital era, these entrepreneurs increasingly rely on FinTech services to manage their business transactions, improve operational efficiency, and enhance customer satisfaction. FinTech services enable them to perform financial activities quickly, securely, and conveniently, thereby supporting business growth and competitiveness. Despite the growing availability of FinTech services, the

level of adoption among micro-level entrepreneurs depends on several factors such as awareness, perceived benefits, technological infrastructure, security concerns, and business requirements. Understanding these factors is essential for promoting the effective utilization of FinTech services and ensuring that entrepreneurs derive maximum benefits from digital financial technologies. Against this background, the present study aims to examine the factors influencing the adoption and usage of FinTech services among micro-level entrepreneurs in Villupuram District, Tamil Nadu. The study seeks to assess their awareness, identify the factors influencing FinTech usage, analyze their perceptions towards FinTech services, and understand the role of FinTech in supporting business operations and financial management. The findings of the study are expected to provide valuable insights for entrepreneurs, financial institutions, FinTech service providers, and policymakers in promoting greater adoption of digital financial technologies.

Literature Review

Meher et al (2021) in their study made in Katihar District in Bihar. evidenced that digital banking positively contributed to MSME growth by facilitating easier acceptance of payments from customers, easier payments to suppliers, effective expenditure management, time savings, and better control over cash-related risks. The study further found that the most significant factors influencing MSME growth were the ease of accepting payments and the ease of making payments through digital banking. Gupta U., Agarwal B., and Nautiyal N. (2022) examined the adoption of FinTech among MSMEs in India. The study identified that the factors of perceived usefulness, perceived ease of use, trust, satisfaction, brand familiarity, government support, and prior experience significantly influenced FinTech adoption among MSMEs. The study also found that FinTech services supported MSMEs through lower transaction costs, simplified processes, improved accessibility, and better financial management. Gupta U. (2023) in a study found that FinTech adoption among MSMEs was considerably high, with many respondents identified themselves as early adopters in India. The study noted that the factors such as perceived ease of use, perceived usefulness, trust, satisfaction, and government support significantly influenced FinTech adoption. FinTech adoption had positive and significant impact on firm growth in terms of turnover, profitability, market share, and productivity.

Husnayetti, Astuti, and Junarti (2024) found that financial literacy and financial inclusion were the most influential factors in determining the successful adoption of FinTech. It also found that digital lending platforms, digital payment systems, and financial management applications helped SMEs overcome financial constraints and improve business performance. John, Vanitha, and Jisham (2024) in their study made in Tamilnadu found that attitude towards fintech entrepreneurship, perceived behavioural control, innovativeness, self-efficacy, and fintech awareness significantly and positively influenced fintech entrepreneurial intention. Among these factors, perceived behavioural control and fintech awareness emerged as important determinants of entrepreneurial aspirations in the fintech sector. Innovativeness positively influenced both attitude and perceived behavioural control, while self-efficacy enhanced perceived behavioural control. Johri A., et al (2024) investigated the determinants of digital financial inclusion (DFI) and its impact on the ease of doing business among micro-enterprises in India. The study found that internet access, educational attainment, firm age, owner characteristics, and managerial experience as key determinants of digital financial inclusion.

Husnayetti, Astuti, and Junarti (2024) made a bibliometric study and found that financial literacy and financial inclusion were the most influential factors in determining the successful adoption of FinTech. It also found that digital lending platforms, digital payment systems, and financial management applications helped SMEs overcome financial constraints and improve business performance. Chandrasena, Sdevin, and Priyadarshani (2025) in their study made in Srilanka found that the variables perceived ease of use, perceived usefulness, perceived security, and trust significantly and positively influenced financial inclusion among the SMEs. Among these factors, perceived security emerged as the strongest predictor of financial inclusion. Ediri (2025) made a study FinTech effects in Enugu State, Nigeria. The study evidenced a high level of FinTech adoption among SMEs in the study area. FinTech usage had a significant positive effect on profitability, business performance, and sales. Adaba G.B., et al (2026) in their study perceived ease of use was the strongest determinant of FinTech adoption, whereas perceived usefulness did not have a significant direct influence. The study also found that deeper integration of FinTech into business operations significantly enhanced competitive advantage through improved cost efficiency, operational agility, and service differentiation.

Objectives

- To identify the factors influencing micro-entrepreneurs in adopting FinTech in their businesses in Villupuram district and
- To study the relationship between demographic variables, business profiles and FinTech usage related variables and the factors influencing micro-entrepreneurs in adopting FinTech.

Methodology

The study has been undertaken to analyse the factors influencing micro level entrepreneurs in adopting FinTech in their businesses. For this purpose, the researchers selected Villupuram district as study area. There are 9 taluks in the district, the researcher selected 50 micro level entrepreneurs from each taluk and selected a total of 450 entrepreneurs as sample of the study. The researchers framed a well-structured questionnaire and collected primary data using such questionnaire. The researchers applied the statistical tools of Cronbach Alpha test to test reliability of questionnaire, Factor Analysis to reduce number of factors, Descriptive statistics to know combined effects of factors, Mann Whitney U Test and Kruskal Wallis Test to know the association between factors influencing in adoption of FinTech in business and demographical, business and FinTech usage related variables.

Results and Discussion

The study has been undertaken to analyse the factors influencing the sample micro-level entrepreneurs in Villupuram district in adopting FinTech technology in their businesses. For this purpose, the researcher identified a total of 28 factors probably influence entrepreneurs in adopting FinTech for various business operations. The researcher studied this aspect in this paper. The researcher wanted to reduce the vast number of variables using Factor Analysis, after reducing and grouping these numbers of factors the researcher applied the statistical tools of descriptive analysis, Mann Whitney U Test and Kruskal Wallis Test for further analysis. These results are presented in this section.

Reliability of questionnaire in the dimension of factors influencing sample micro-level entrepreneurs to determine the usage of FinTech services for their business processes, the researcher applied Cronbach's Alpha test. The researcher found that the computed value of

Cronbach's Alpha test of the questionnaire in the aspect stood at 0.876 for 28 items. The calculated value of Cronbach's Alpha value exceeded the standard of 0.8, it shows that the questionnaire in the aspect of testing influence of factors on entrepreneurs in usage of FinTech services is good and can be used for further analysis.

Table 1 presents the results of communalities of factors influencing the sample entrepreneurs on usage of FinTech services in the study area. The table presents the results of initial value of correlation and correlation after extraction.

Table 1: Communalities - Factors Influencing FinTech Adoption

SN	Variables	Initial	Extraction
1	Saving time	1.000	0.604
2	Ease of use	1.000	0.594
3	Reduction of cost of financial transactions	1.000	0.624
4	Availability of internet facilities	1.000	0.590
5	Well awareness about Fin Tech	1.000	0.594
6	Converge with latest technology	1.000	0.571
7	Feel that it is highly secured	1.000	0.681
8	Trust on financial institutions	1.000	0.628
9	Round the clock services	1.000	0.581
10	Reduction of paper-work	1.000	0.674
11	Availability of smart phones / laptops etc.	1.000	0.534
12	Well technical support	1.000	0.709
13	Support and encouragement of governments	1.000	0.657
14	Business competition	1.000	0.607
15	Reliability of Fin Tech services	1.000	0.659
16	Less efforts for financial transactions	1.000	0.524
17	Customers' preferences	1.000	0.585
18	Customers' satisfaction	1.000	0.617
19	Lower risk in financial transactions	1.000	0.743
20	Remarkable performance of the technology	1.000	0.777
21	Could be used anywhere (payments, receipts, etc.)	1.000	0.566
22	Digital literacy level.	1.000	0.621
23	Encouragement of co-businesspersons.	1.000	0.596
24	Strong regulatory environment	1.000	0.542
25	Speed of transactions	1.000	0.524
26	Can obtain data of past transactions	1.000	0.573
27	Immediate confirmation after transaction	1.000	0.657
28	Less cost of initiation/establishment	1.000	0.545

Source: Primary Data

Table 1 reveals that all the factors selected for the study had extraction values above 0.50. They ranged from 0.524 to 0.777. It indicated that each variable adequately contributed for the factor structure. So, no elimination of factors was made for the aspect. Some variable recorded lower

values, but these values were lower relative to other variables, they still exceeded the acceptable threshold of 0.50. It let the researcher to include all the variables for further analysis.

Table 2 presents the results of the Total Variance Explained obtained through factor analysis for the factors influencing the usage of FinTech services among sample micro-level entrepreneurs. The table provides information on the total variance, percentage of variance, and cumulative percentage of variance associated with the initial eigenvalues and extraction sums of squared loadings.

Table 2: Total Variance Explained - Factors Influencing FinTech Adoption

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.546	12.664	12.664	3.546	12.664	12.664
2	3.125	11.161	23.825	3.125	11.161	23.825
3	2.846	10.164	33.989	2.846	10.164	33.989
4	2.728	9.743	43.732	2.728	9.743	43.732
5	1.968	7.029	50.761	1.968	7.029	50.761
6	1.845	6.589	57.350	1.845	6.589	57.350
7	0.976	3.486	60.836	0.976		
8	0.955	3.411	64.246	0.955		
9	0.861	3.075	67.321	0.861		
10	0.831	2.968	70.289	0.831		
11	0.756	2.700	72.989	0.756		
12	0.725	2.589	75.579	0.725		
13	0.692	2.471	78.050	0.692		
14	0.653	2.332	80.382	0.653		
15	0.627	2.239	82.621	0.627		
16	0.598	2.136	84.757	0.598		
17	0.542	1.936	86.693	0.542		
18	0.515	1.839	88.532	0.515		
19	0.467	1.668	90.200	0.467		
20	0.443	1.582	91.782	0.443		
21	0.402	1.436	93.218	0.402		
22	0.354	1.264	94.482	0.354		
23	0.340	1.214	95.696	0.340		
24	0.324	1.157	96.854	0.324		
25	0.275	0.982	97.836	0.275		
26	0.222	0.793	98.629	0.222		
27	0.196	0.700	99.329	0.196		
28	0.188	0.671	100.000	0.188		

Extraction Method: Principal Component Analysis.

Table 2 shows that out of the 28 factors considered for analyzing the influence on entrepreneurs' usage of FinTech services, six factors recorded eigenvalues greater than 1.00 and were therefore retained for further analysis. The six factors explained individual variances of 12.664%, 11.161%, 10.164%, 9.743%, 7.029%, and 6.589% respectively. Together, these six factors accounted for a cumulative variance of 57.350%, indicating satisfactory explanatory power. Since the remaining factors had eigenvalues below 1.00 and contributed relatively less to the total variance, they were excluded. Hence, the 28 variables were successfully reduced to six meaningful dimensions.

According to the results presented in the above table, the 28 variables were grouped into six underlying factors through factor analysis. The individual variables associated with each factor, along with their corresponding factor loadings, are presented in Table 4.31. These factor loadings indicate the strength of association between the variables and their respective dimensions.

Table 3: Factors Influencing FinTech Adoption - (Rotated Component Matrix^a)

SN	Variables	Component						Factor Name
		1	2	3	4	5	6	
1	1	0.884						Convenience and Efficiency Factors
2	2	0.856						
3	9	0.837						
4	16	0.831						
5	21	0.822						
6	25	0.809						
7	26	0.796						
8	27	0.788						
9	3		0.871					Economic Benefit Factors
10	10		0.859					
11	28		0.830					
12	4			0.865				Technology and Infrastructure Factors
13	6			0.842				
14	11			0.834				
15	20			0.818				
16	22			0.780				
17	7				0.877			Security and Trust Factors
18	8				0.856			
19	15				0.841			
20	19				0.835			
21	24				0.811			
22	5					0.860		Awareness and Support Factors
23	12					0.844		
24	13					0.832		
25	23					0.815		
26	14						0.874	

27	17					0.863	Business and Customer-oriented Factors
28	18					0.829	

Table 3 presents the results of the Rotated Component Matrix obtained through factor analysis for the factors influencing entrepreneurs' usage of FinTech services in the study area. Based on the factor loadings, the variables were grouped into six distinct dimensions. Factor 1 comprised variables 1, 2, 9, 16, 21, 25, 26, and 27, which exhibited high loadings and were collectively labelled as “Convenience and Efficiency Factors.” Factor 2 included variables 3, 10, and 28, and was named “Economic Benefit Factors” due to their strong association with economic advantages derived from FinTech usage. Factor 3 consisted of variables 4, 6, 11, 20, and 22, which were grouped under “Technology and Infrastructure Factors.” Factor 4 included variables 7, 8, 15, 19, and 24 and was designated as “Security and Trust Factors” because of their relevance to safety and reliability concerns associated with FinTech services. Further, Factor 5 comprised variables 5, 12, 13, and 23, which were grouped and labelled as “Awareness and Support Factors.” Finally, Factor 6 included variables 14, 17, and 18, and was named “Business and Customer-Oriented Factors.” Thus, the factor analysis successfully reduced the 28 variables into six meaningful dimensions representing the major factors influencing entrepreneurs in the usage of FinTech services.

By applying factor analysis, the researcher reduced and grouped 28 factors into six. In order to know which factors were highly influenced the entrepreneurs on usage of FinTech services for their business and which factors were recorded least influence, the researcher applied descriptive analysis such as, mean, standard deviation and coefficient of variation. These factors were ranked based on their respective mean values and their results in table 4.32.

Table 4: Descriptive Statistics of Factors Influencing on Usage of FinTech

Sl. No.	Factors	Mean	SD	CV	Rank
1	Convenience and Efficiency Factors	4.01	1.11	27.67	I
2	Economic Benefit Factors	3.69	1.21	32.74	III
3	Technology and Infrastructure Factors	3.35	1.26	37.62	IV
4	Security and Trust Factors	2.94	1.26	43.08	VI
5	Awareness and Support Factors	3.09	1.24	40.00	V
6	Business and Customer-oriented Factors	3.88	1.16	29.87	II
	Overall Mean	3.49			

Table 4 reveals that “Convenience and Efficiency Factors” are the most influential factors affecting the usage of FinTech services among micro-level entrepreneurs in Villupuram district, as evidenced by the highest mean score of 4.01 and the first rank. The low values of standard deviation (1.11) and coefficient of variation (27.67%) indicate a high level of agreement among respondents. This suggests that factors such as ease of use, time savings, 24/7 availability, faster transactions, accessibility from anywhere, transaction history, and instant confirmation strongly motivate entrepreneurs to adopt FinTech services. “Business and Customer-Oriented Factors” ranked second with a mean score of 3.88, indicating that business competition, customer preferences, and customer satisfaction significantly encourage FinTech usage. “Economic

Benefit Factors” secured the third rank with a mean score of 3.69, highlighting the importance of reduced transaction costs, lower paperwork, and reduced implementation costs in influencing adoption. “Technology and Infrastructure Factors” recorded a moderate influence (Mean = 3.35), suggesting that internet availability, digital devices, technological advancements, and digital literacy play a supportive role in FinTech adoption. In contrast, “Awareness and Support Factors” (Mean = 3.09) and “Security and Trust Factors” (Mean = 2.94) were the least influential factors. The relatively higher SD and CV values for these factors indicate greater variation in respondents’ opinions. Overall, convenience, efficiency, and business-related benefits emerge as the primary drivers of FinTech usage among micro-level entrepreneurs.

Association between Influencing Factors and Demographical Variables

The level of influence of various factors may vary among the respondents between their demographical profile such as their gender, marital status, age, educational level, family type and family size. The non-parametric statistical tools of Mann-Whitney U test and Kruskal Wallies Z test were applied to find the result.

H₀: There were no significant differences in influence level of various factors on sample entrepreneurs based on their demographical profile.

Table 5: Mann-Whitney Test - Influencing Factors and Demographical Variables

SN	Factors	Gender	Marital Status	Family Type
1	Convenience and Efficiency Factors	14380.500 2.150* (0.032)	18120.500 1.806 (0.071)	20442.500 2.078* (0.038)
2	Economic Benefit Factors	14930.000 1.666 (0.096)	18572.500 1.369 (0.171)	20453.000 2.059* (0.039)
3	Technology and Infrastructure Factors	14283.500 2.332* (0.020)	18223.000 1.679 (0.093)	20968.000 1.705 (0.088)
4	Security and Trust Factors	14546.000 2.007* (0.045)	17008.000 2.787* (0.005)	21985.000 0.847 (0.397)
5	Awareness and Support Factors	15157.500 1.461 (0.144)	18932.500 1.122 (0.262)	18809.000 1.217 (0.223)
6	Business and Customer-oriented Factors	14271.500 2.401* (0.019)	18702.000 1.268 (0.205)	18924.000 1.076 (0.282)

Values: Mann Whitney U, Z (P)

Table 5 reports that the male and female entrepreneurs had different opinion regarding influence level of Convenience and Efficiency Factors, Technology and Infrastructure Factors, Security and Trust Factors and Business and Customer-oriented Factors, (Z = 2.150, 2.332, 2.007 & 2.401; P = 0.032, 0.020, 0.045 and 0.019). It let the researcher to reject the H₀. No significant differences made by Gender with other factors. Marital status of sample

entrepreneurs made significant differences influence level of Security and Trust Factors, since its calculated Z values under Mann-Whitney U test stood at 2.787, it was statistically significant at 5% level as per the result of p value (0.005). It resulted for rejection of H_0 for this case. Family type of entrepreneurs made significant differences on influence level of Convenience and efficiency factors and Economic benefit factors, , since their calculated Z values under Mann-Whitney U test (2.078 and 2.059), were statistically significant at 5% level as per the result of p value (0.038 and 0.039). It resulted for rejection of H_0 for these cases.

Table 4.34 presents the results of Kruskal Wallis Test between factors influencing the sample entrepreneurs in using FinTech services and demographical variables namely, age, education and family size of respondents.

Table 6: Kruskal Wallis Test - Influencing Factors and Demographical Variables

SN	Factors	Age χ^2 (p)	Education χ^2 (p)	Family Size χ^2 (p)
1	Convenience and Efficiency Factors	13.541* (0.009)	11.846* (0.021)	7.889* (0.019)
2	Economic Benefit Factors	8.638 (0.071)	8.244 (0.083)	8.155* (0.017)
3	Technology and Infrastructure Factors	10.709* (0.030)	12.653* (0.013)	5.007 (0.082)
4	Security and Trust Factors	11.155* (0.025)	6.473 (0.166)	5.816 (0.055)
5	Awareness and Support Factors	14.005* (0.006)	9.549* (0.049)	4.057 (0.132)
6	Business and Customer-oriented Factors	8.466 (0.076)	8.087 (0.088)	3.814 (0.149)

Table 6 reveals that the calculated chi-square value under Kruskal Wallis Test between age of the respondents and factors influencing entrepreneurs in using FinTech services in the dimensions of convenience and efficiency, technology and infrastructure, security and trust and awareness and support stood at 13.541, 10.709, 11.155 and 14.005 respectively, their respective p values stood at 0.009, 0.030, 0.025 and 0.006 respectively, so they were significant at 5% level, it let to reject the H_0 . Educational level of the respondents made significant differences in opinion of sample entrepreneurs regarding influence of the factors related to convenience and efficiency, technology and infrastructure and awareness and support in using FinTech services in business ($\chi^2 = 11.846, 12.653$ and 9.549 ; $P = 0.021, 0.013$ and 0.049), it resulted rejection of null hypothesis. The demographical variable family size made significant differences on level of influence of Convenience and Efficiency Factors and Economic Benefit Factors on sample entrepreneurs in using FinTech services in the study area ($\chi^2 = 7.889$ and 8.155 ; $P = 0.019$ and 0.017). These results were significant at 5% level and the H_0 was rejected.

Association between Influencing Factors and Business-Related Variables

Business related variables such as business type, income, initial investment, turnover, experience in doing business, area of business, number of workers working, legal form and source of investment may make significant difference in level of influence of various factors

on entrepreneurs in using FinTech services. For this purpose the following null hypothesis was framed.

Ho: There were no significant differences in influence level of various factors on sample entrepreneurs based on their business-related variables.

Table 7: Kruskal Wallis Test-Influencing Factors and Business-Related Variables

SN	Variables	C&E	EB	T&I	S&T	A&S	B&C
1	Business Type	11.747* 0.038	9.046 0.107	11.167* 0.048	12.043* 0.034	10.207 0.028	13.543* 0.022
2	Income	8.294 0.081	13.478* 0.009	9.102 0.059	10.386* 0.034	7.305 0.121	8.176 0.085
3	Investment	7.15 0.128	9.850* 0.043	6.398 0.171	10.379 0.035	8.098 0.088	11.226* 0.024
4	Turnover	10.793* 0.029	12.965* 0.009	8.08 0.089	11.568* 0.022	6.338 0.175	15.645* 0.000
5	Experience	8.899* 0.031	6.624 0.085	9.489* 0.023	8.331* 0.04	11.084* 0.011	10.550* 0.014
6	Area of Business	6.647* 0.036	4.349 0.114	8.126* 0.017	5.342 0.069	8.126* 0.017	3.808 0.149
7	No. of Workers	9.463 0.051	6.911 0.141	9.221 0.056	15.486* 0.004	10.928* 0.027	11.236* 0.024
8	Legal Form	6.297 0.098	4.746 0.191	3.830 0.280	14.132* 0.003	3.540 0.316	5.130 0.163
9	Investment Source	4.641 0.098	6.685* 0.035	4.889 0.087	7.513* 0.023	5.493 0.064	4.764 0.092

Values: Chi-Square & P; C&E – Convenient and Efficiency Factors; EB – Economic Benefit Factors; T&I – Technology and Infrastructure Factors; S&T – Security and Trust Factors; A&S – Awareness and Support Factors; B&C – Business and Consumer-oriented Factors.

Table 7 shows that significant differences were found between type of business and influence level of Convenience and Efficiency Factors, Technology and Infrastructure Factors, Security and Trust Factors, and Business and Customer-oriented Factors ($\chi^2 = 11.747, 11.167, 12.043$ & 13.543 ; $P = 0.038, 0.048, 0.034$ and 0.022). Income of respondents made differences in influence level of Economic benefit factors, and Security and Trust Factors ($\chi^2 = 13.478$ & 10.386 ; $P = 0.009$ & 0.034), it let to reject the Ho. Initial investment in business made significant differences in influence level of Economic benefit factors, and Business and customer-oriented factors ($\chi^2 = 9.850$ & 11.226 ; $P = 0.043$ & 0.024). Turnover of business made significant differences in level of influence of Convenience and Efficiency Factors, Economic Benefit Factors, Security and Trust Factors, and Business and Customer-oriented Factors ($\chi^2 = 10.793, 12.965, 11.568$ & 15.645 ; $P = 0.029, 0.009, 0.022$ & 0.000). Experience in business made significant differences in level of influence of Convenience and Efficiency Factors, Technology and Infrastructure Factors, Security and Trust Factors, Awareness and Support Factors and Business and Customer-oriented Factors ($\chi^2 = 8.899, 9.489, 8.331, 11.084$ & 10.550 ; $P = 0.031, 0.023, 0.040, 0.011$ and 0.014).

Level of influence of Convenience and Efficiency Factors, Technology and Infrastructure Factors, and Awareness and Support Factors and area of business operated had significant differences ($\chi^2 = 6.647, 8.126 \& 8.126$; $P = 0.036, 0.017, \& 0.017$). Significant differences were identified between number of workers working in their business concern and level of influence of Security and Trust Factors, Awareness and Support Factors and Business and Customer-oriented Factors ($\chi^2 = 15.486, 10.928 \& 11.236$; $P = 0.004, 0.027 \& 0.024$). There were significant differences between legal form of business and influence level of security and trust factors ($\chi^2 = 14.132$; $P = 0.003$). Level of influence of Economic Benefit Factors, and Security and Trust Factors, and source of investments had significant differences ($\chi^2 = 6.685 \& 7.513$; $P = 0.035 \& 0.023$). All the above results were statistically significant, therefore the H_0 was rejected.

Association between Influencing Factors and Bank-Related Variables

FinTech usage related variables (type of bank, primary source of awareness about FinTech, frequency of usage of FinTech, experience in using FinTech and average number of digital transactions per day) may also influence the opinion of sample entrepreneurs regarding level of influence of various factors in using FinTech services. This aspect also studied and the results are presented in table 8 and 9.

H_0 : There were no significant differences in influence level of various factors on sample entrepreneurs based on their FinTech usage-related variables.

Table 8: Mann Whitney Test - Influencing Factors and Type of Bank

SN	Factors	Mann-Whitney U	Z & p Value
1	Convenience and Efficiency Factors	21430.000	2.437* (0.015)
2	Economic Benefit Factors	22092.500	2.011 (0.044)
3	Technology and Infrastructure Factors	21924.000	2.056* (0.040)
4	Security and Trust Factors	22716.000	1.510 (0.131)
5	Awareness and Support Factors	21253.000	2.585* (0.010)
6	Business and Customer-oriented Factors	22266.000	1.789 (0.074)

Table 8 reveals that the type of bank in which respondents maintain their accounts significantly influences their opinion regarding the impact of Convenience and Efficiency Factors, Technology and Infrastructure Factors, and Awareness and Support Factors. The calculated Z-values under the Mann–Whitney U Test were 2.437, 2.056, and 2.585 respectively, with corresponding p-values of 0.015, 0.040, and 0.010, all of which are less than 0.05. Therefore, the null hypothesis was rejected, indicating significant differences in respondents' opinions based on the type of bank where they hold their accounts.

Table 9 shows the results of Kruskal Wallis Test between opinion of the respondents regarding influence level of various factors in FinTech adoption and FinTech usage related variables.

Table 9: Kruskal Wallis Test - Influencing Factors and FinTech Usage-Related Variables

S N	Factors	Awareness χ^2 (p)	Frequency χ^2 (p)	FinTech Type χ^2 (p)	Experience χ^2 (p)	Digital Transactions
1	Convenience and Efficiency Factors	11.399* (0.044)	11.079* (0.050)	17.102* (0.049)	12.427* (0.006)	8.493* (0.037)
2	Economic Benefit Factors	12.484* (0.029)	19.667* (0.001)	20.020* (0.018)	7.056 (0.070)	10.465* (0.015)
3	Technology and Infrastructure Factors	17.244* (0.004)	8.184* (0.042)	17.900* (0.036)	8.278* (0.041)	9.068* (0.028)
4	Security and Trust Factors	12.406* (0.030)	8.806* (0.032)	16.998* (0.050)	15.465* (0.001)	10.513* (0.014)
5	Awareness and Support Factors	13.339* (0.020)	8.421* (0.038)	21.246* (0.013)	7.795* (0.050)	8.168* (0.040)
6	Business and Customer-oriented Factors	13.938* (0.016)	10.040 (0.074)	18.672* (0.021)	10.828* (0.013)	9.864* (0.019)

Table 9 reveals that source of awareness about FinTech services made significant differences in opinion of the respondents regarding all the factors influencing them in using FinTech services such as Convenience and Efficiency Factors, Economic Benefit Factors, Technology and Infrastructure Factors, Security and Trust Factors, Awareness and Support Factors, and Business and Customer-oriented Factors ($\chi^2 = 11.399, 12.484, 17.244, 12.406, 13.339$ & 13.938 ; $P = 0.044, 0.029, 0.004, 0.030, 0.020$ and 0.016). There were significant differences between frequency of usage of FinTech services and level of influence of Convenience and Efficiency Factors, Economic Benefit Factors, Technology and Infrastructure Factors, Security and Trust Factors, and Awareness and Support Factors ($\chi^2 = 11.079, 19.667, 8.184, 8.806$ & 8.421 ; $P = 0.050, 0.001, 0.042, 0.032$ & 0.038). Type of FinTech services used by sample entrepreneurs caused significant differences in opinion related to influence level of all the factors namely, Convenience and Efficiency Factors, Economic Benefit Factors, Technology and Infrastructure Factors, Security and Trust Factors, Awareness and Support Factors, and Business and Customer-oriented Factors ($\chi^2 = 17.102, 20.020, 17.900, 16.998, 21.246$ & 18.672 ; $P = 0.049, 0.018, 0.036, 0.050, 0.013$ & 0.021).

Experience of sample entrepreneurs in using FinTech created significant differences in opinion regarding level of influence Convenience and Efficiency Factors, Technology and Infrastructure Factors, Security and Trust Factors, Awareness and Support Factors, and Business and Customer-oriented Factors ($\chi^2 = 12.427, 8.278, 15.465, 7.795$ & 10.828 ; $P = 0.006, 0.041, 0.001, 0.050$ & 0.013). Number of digital transactions per day caused significant differences in opinion related to influence level of all the factors namely, Convenience and Efficiency Factors, Economic Benefit Factors, Technology and Infrastructure Factors, Security and Trust Factors, Awareness and Support Factors, and Business and Customer-oriented Factors ($\chi^2 = 8.493,$

10.465, 9.068, 10.513, 8.168 & 9.864; $P = 0.037, 0.015, 0.028, 0.014, 0.040 \text{ \& } 0.019$). The above results were statistically significant at 5% level, therefore the H_0 was rejected.

Conclusion

The study examined the factors influencing the adoption and usage of FinTech services among micro-level entrepreneurs in Villupuram District, Tamil Nadu. The findings reveal that entrepreneurs have a moderate level of awareness of FinTech services and generally hold a positive perception towards their usage. Among the influencing factors, Convenience and Efficiency Factors emerged as the most important determinants of FinTech adoption, followed by Business and Customer-Oriented Factors and Economic Benefit Factors. The study also found that FinTech services help entrepreneurs improve business operations, financial transactions, and decision-making processes. The study concludes that FinTech plays a vital role in enhancing business efficiency and financial management among micro-level entrepreneurs. Therefore, improving awareness, digital infrastructure, security measures, and user support can further promote FinTech adoption and contribute to the growth and sustainability of micro-enterprises.

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