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Fintech-driven startup finance ecosystem for sustainable MSMEs in Thoothukudi District

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Abstract
Financial technology (FinTech) has emerged as an important component of the modern financial ecosystem by enabling technology-based financial services and improving access to finance. Micro, Small and Medium Enterprises (MSMEs) contribute significantly to employment generation, entrepreneurship and regional economic development, but many enterprises continue to experience difficulties in obtaining timely and adequate financial support. In this context, the present study examines the FinTech-driven startup finance ecosystem for sustainable MSMEs in Thoothukudi district. The study aims to assess the awareness and adoption of FinTech services among MSME entrepreneurs, identify the financial challenges associated with digital finance, and examine the contribution of FinTech-enabled financial services to sustainable MSME development. Primary data was collected from 150 MSME entrepreneurs in Thoothukudi district through a structured questionnaire, while secondary information was obtained from relevant RBI publications, Ministry of MSME reports, journals and other published sources. The study uses appropriate statistical techniques to analyse the responses and understand the relationship between FinTech adoption and MSME sustainability. The findings indicate that FinTech awareness is developing among MSME entrepreneurs, although concerns relating to digital literacy, trust, cybersecurity and access to suitable financial services continue to influence adoption. The study suggests strengthening digital financial literacy, awareness programmes, institutional support and user-friendly FinTech services to facilitate sustainable MSME development in Thoothukudi district.

Keywords: FinTech, startup finance, msmes, digital finance, sustainability, Thoothukudi District

Introduction

Financial Technology (FinTech) is transforming the financial services landscape by integrating technological innovations with financial activities. Digital payments, online lending, mobile-based financial services, automated credit assessment and other technology-enabled solutions have created new ways of accessing and managing finance. In India, the expansion of digital financial infrastructure and initiatives such as the Unified Payments Interface (UPI), Digital India and financial inclusion programmes has contributed to the wider use of technology-based financial services.

Micro, Small and Medium Enterprises (MSMEs) play an important role in employment generation, entrepreneurship, income creation and regional economic development. Despite their economic significance, MSMEs often encounter difficulties in obtaining adequate and timely finance because of limited collateral, documentation requirements, insufficient credit history and other financial constraints. These challenges can affect their ability to maintain operations, invest in innovation and achieve long-term sustainability.

The emergence of FinTech startups has created new possibilities within the MSME finance ecosystem. Digital lending platforms, online payment systems, invoice financing, alternative credit assessment and cash-flow-based financial solutions can provide MSMEs with more convenient channels for accessing financial services. Such technology-enabled solutions may help enterprises improve financial efficiency, manage working capital and strengthen their capacity for sustainable growth.

Thoothukudi district has a diverse entrepreneurial and industrial environment, with MSMEs operating across sectors such as manufacturing, trading, marine-related activities, salt production and services. In this context, understanding the availability, awareness and adoption of FinTech-based financial services among local MSMEs is important. Therefore, the present study focuses on the FinTech-Driven Startup Finance Ecosystem for Sustainable MSMEs in Thoothukudi District, with particular attention to FinTech adoption, financial accessibility and factors influencing sustainable MSME development.

Review of literature

1. Jamal, Pham, Sultana and Bhandari (2025) [2] examined FinTech adoption and regulatory barriers among MSMEs in the Guindy Thiru Vi Ka Industrial Estate, Chennai, Tamil Nadu. The study collected data from 128 MSMEs and found that awareness, digital literacy, infrastructure, trust and regulatory complexity influence the adoption of FinTech services. The study recommended targeted policy support and infrastructure development to promote wider digital financial inclusion among MSMEs.
2. Safira, Agustina, Hidayanti and Mukhlishin (2025) examined the impact of FinTech and risk management on MSME sustainability performance. The study emphasized that digital financial literacy and appropriate risk management are important for improving business sustainability and recommended greater digital financial literacy support for MSMEs.

Objectives of the Study

- To study the socio-economic profile of MSME entrepreneurs in Thoothukudi district.

- To assess FinTech awareness and adoption among MSMEs.
- To identify challenges in accessing FinTech-based finance.
- To examine the role of FinTech in MSME sustainability.
- To suggest measures to strengthen the FinTech finance ecosystem.

Statement of the Problem

MSMEs in Thoothukudi district face difficulties in accessing timely and adequate finance through traditional banking channels. Although FinTech provides convenient and technology-based financial solutions, its awareness and adoption among local MSMEs remain limited. Therefore, this study examines the role of the FinTech-driven finance ecosystem in promoting sustainable MSME development in Thoothukudi district.

Research Methodology

The present study adopts a descriptive and analytical research design and is confined to Thoothukudi district. Primary data were collected from 150 MSME entrepreneurs through a structured questionnaire. Secondary data were collected from journals, RBI reports and Ministry of MSME publications. The data were analysed using Percentage Analysis, Chi-square Test, One-way ANOVA and Correlation Analysis with SPSS software.

Data analysis and interpretation

Table 1: Level of Fintech Awareness Among Msme Entrepreneurs

Awareness of level	No. of Respondents	Percentage (%)
Highly Aware	42	28%
Aware	68	45%
Low Aware	40	27%
Total	150	100%

Interpretation: The table shows that 45% of the MSME entrepreneurs are aware of FinTech services, while 28% are highly aware and 27% have low awareness.

Table 2: Association Between Selected Profile Variables and Fintech Adoption

Personal factors	Degrees of freedom	Calculated value	Table vale	Inference
Age	2	3.85	5.99	NS
Educational qualification	2	2.92	5.99	NS
Type of enterprise	2	1.74	5.99	NS
Invesment level	2	4.15	5.99	NS

NS - Not Significant

Interpretation: Since the p-values are greater than 0.05, there is no significant association between the selected profile variables and FinTech adoption among MSME entrepreneurs.

H_0: There is no significant association between the selected profile variables and FinTech adoption among MSME entrepreneurs.

H_1: There is a significant association between the selected profile variables and FinTech adoption among MSME entrepreneurs.

Table 3: Difference in Sustainable Msme Performance Based on Education/Al Qualification

Source of variation	Sum of sqares	df	Mean sqare	F - value	P-vale
Between groups	4.12	2	2.06	1.24	0.292
Within groups	244.50	147	1.66		
Total	248.62	149			

Interpretation: Since the p-value (0.292) is greater than 0.05, there is no significant difference in sustainable MSME performance based on educational qualification. Hence, H_0 is accepted and H_1 is rejected.

Table 4: Correlation Between Fintech Adoption and Sustainable Msme Performance

Variables	FinTech Adoption	Sustainable MSME performance
Fin Tech Adoption	1	0.112
Sustainable MSME performance	0.112	1
P-value		0.174

Interpretation: The correlation coefficient (r = 0.112) indicates a weak positive relationship between FinTech adoption and sustainable MSME performance. Since the p-value (0.174) is greater than 0.05, the relationship is not statistically significant. Hence, H_0 is accepted and H_1 is rejected.

Findings

- Most MSME entrepreneurs (45%) are aware of FinTech services.
- Chi-square test shows no significant association between profile variables and FinTech adoption.
- One-way ANOVA shows no significant difference in sustainable MSME performance based on educational qualification.
- Correlation analysis shows a weak positive but non-significant relationship between FinTech adoption and sustainable MSME performance (r = 0.112, p = 0.174).

Suggestions

- Conduct FinTech awareness programmes for MSME entrepreneurs.
- Provide digital financial literacy and training.
- Improve easy and affordable FinTech-based finance options.
- Strengthen cybersecurity, trust and transparency in digital finance.
- Promote collaboration between FinTech firms, banks and MSMEs.

Conclusions

FinTech has the potential to improve financial access and support sustainable MSME development. The study found that FinTech awareness among MSME entrepreneurs is developing, but adoption remains limited. Therefore, greater awareness, digital financial literacy, secure services and institutional support are needed to strengthen the FinTech-driven finance ecosystem for sustainable MSMEs in Thoothukudi district.

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