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Financial Technology Adoption – A Case of Indian MSMEs

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ABSTRACT

Micro, small, and medium enterprises (MSME) are the backbone of every economy. Financial inclusion of MSMEs is essential for any country aspiring to economic development. Innovative solutions offered by fintech companies can support the financial inclusion of MSMEs. Digital payments, alternative loans, insurance, investments, regulatory, and robo-advisory services are just a few of the services that fintech companies provide to MSMEs. The **purpose** of this study is to examine the role of financial technology on registered micro, small, and medium enterprises in India. The **objective** of the study is to reveal the behaviour of MSMEs towards financial technology acceptance and show how various demographic variables of owners/managers influence the acceptance of financial technology in the case of MSMEs. The **methodological basis** of the study is a management survey of 117 MSMEs in India. The questionnaire had 25 questions; measurement items used in the questionnaire were derived from previous studies carried out in developing countries. The results were processed and tested for significance using modern econometric methods such as the Kruskal-Wallis H test, and the Mann-Whitney U test. The **result** of the study indicates that the financial technology acceptance rate among the MSME sector is high as maximum MSMEs consider themselves moderate financial technology adopters. MSMEs have a high understanding of different financial services provided by fintech companies. Prior Experience of the owner/manager, brand familiarity, government support, and behavioural variables such as perceived ease of use, perceived usefulness, trust, and satisfaction was proved to be effective while adopting financial technology services whereas, demographic variables such as gender, age, education level of owner/manager was found to be ineffective. The study **concludes** that fintech companies are providing quality services by acting as a single window, supporting the financial needs of MSMEs at low interest rates, simplified processes and lower transaction costs. MSMEs are using fintech products and services as a key part of their financial management, with increasing adoption there is a growing opportunity for fintech companies, incumbents, and non-financial organisations. The result of the study contributes to the novel understanding of the acceptance and preference of the MSME sector towards financial technology.

Keywords: financial management by small businesses; financial technology; Indian MSMEs; fintech companies; fintech products; financial technology adoption; behavioural factors

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INTRODUCTION

Financial technology, often known as “Fintech”, has revolutionized the banking industry’s ecosystem around the world [1]. The global FinTech market value is estimated to be approximately 7301.78 billion US\$ as of 2020 and projected to grow at a CAGR of 26.87%, as per Statista Research Department.¹ India’s FinTech sector is expected to reach from US\$ 50 billion in 2021 to US\$ 150 billion by 2025. Fintech service providers have aided in the unbundling of banking into core activities such as payment settlement, maturity transformation, risk-sharing, and capital allocation [2].

According to the RBI bulletin,² roughly 19% of Fintech companies in India were in the digital payments area as of August 2020. Digital lending came in second with 17 percent, and WealthTech came in third with 14 percent. In 2020, India has about 2,200 Fintech enterprises and start-ups, making it the world’s second largest Fintech hub behind the United States.

There is no global definition for the term “Fintech”, as definitions of Fintech vary widely across the globe. Depending on which side of the industry you come from, Fintech means quite different things to different people. Fintech is defined as an industry that uses

¹ Statista Research Department Report on Fintech Jun 7, 2022. URL: <https://www.statista.com/topics/2404/fintech/> (accessed on 10.03.2022).

² RBI Bulletin: FinTech: The Force of Creative Disruption dated: 11.11.2020. URL: <https://rbidocs.rbi.org.in/rdocs/Bulletin/PDFs/7FINTECHEED4C43FC31D43C9B9D7F8F31D01B08E.PDF> (accessed on 02.10.2021).

technology to make financial institutions and the delivery of financial services more efficient, although there is no universally agreed-upon definition. Fintech is a process that combines “finance and technology together”. Internet banking, mobile payments, crowdfunding, peer-to-peer financing, Robo-Advisory, online identity, and other incremental and disruptive advances are examples [3]. There are many financial needs of customers that can be fulfilled using Fintech services.

FINANCIAL TECHNOLOGY PROVIDES BASIC FORMS OF FINANCIAL SERVICES

- **Banking and Payment:** This includes online foreign exchange, digital banking, payment processors, and mobile point of sale (mPOS) payment machines and readers.
- **Financial Management:** This includes online billing and invoice management tools, online cash flow and liquidity management tool, and Online bookkeeping and payroll tools.
- **Financing:** This includes online lending platforms, online marketplaces, aggregators, and brokers. Online equity (including equity crowdfunding), debt securities, online invoice financing, and dynamic discounting.
- **Insurance:** This comprises peer-to-peer insurance, usage-based insurance, and insurance premium comparison sites.

According to the EY global Fintech adoption index, India's fintech adoption has increased to 87% in 2019 from 52% in 2017. Fintech aims to improve the accessibility of financial services for both individuals and enterprises. Fintech improves clients' experiences by connecting them to the digital world, making them more efficient, cost-effective, and seamless. Fintech has changed the ecosystems of all businesses. Today, all banking transactions are usually digital, Banks, financial institutions, and lenders can provide loans and advances easily and quickly using just their mobile phones because of Fintech [3]. Today, Fintech is used in all sectors of the economy, which includes the MSME sector also. The definition of the MSME sector is also different in different nations. In India, MSME is defined as per (MSMED) Act, 2006 where a micro-enterprise, where the investment in plant and machinery or equipment

does not exceed one crore rupees³ and turnover does not exceed five crore rupees, a small enterprise, where the investment in plant and machinery or equipment does not exceed ten crore rupees and turnover does not exceed fifty crore rupees; and a medium enterprise, where the investment in plant and machinery or equipment does not exceed fifty crore rupees and turnover does not exceed two hundred and fifty crore rupees.⁴ Micro, Small, and medium-sized enterprises (MSMEs) are increasingly using Fintech services across the globe. The Global SME adoption rate is 25%. In India, Fintech Services are adopted by the MSME sector at a very fast pace. MSME firms are a distinct customer category, with requirements that differ from those of consumers and major organizations.

The study involves understanding the knowledge of MSMEs about Financial Technology and ascertaining the MSME behavior towards Financial Technology acceptance as the needs and working of this sector are very different. The study will also ascertain the impact of different demographic variables such as Age, Education, Experience, and Gender of Owners/Managers on Financial Technology acceptance. According to [4], the human capital of an MSME i.e., owner/manager is a significant determinant in predicting the financing preferences of MSMEs. Also, human capital can be measured using three variables, namely age, education, and experience [5] The significance of personal features of MSME owners/managers has also been explained by [6]. They realized that gender, education, and ethnicity are the most important factors influencing MSME financial decisions.

These days, the MSME sector is spending a huge amount on technology development and up-gradation. Given the growing importance of these recent changes in India's MSMEs, the current study poses the following research questions:

- Identifying MSMEs' knowledge of financial technology.
- To ascertain the MSMEs' behavior towards financial technology acceptance.

³ 1 INR = 0.760 RUBLES. 1 CRORE = 7,602,470 RUBLES URL: <https://www.xe.com/currencyconverter/> (accessed on 10.08.2021).

⁴ MSME. Annual Report 2020–21. Ministry of Micro, Small, and Medium Enterprises; 2021 URL: <https://msme.gov.in/sites/default/files/MSME-ANNUAL-REPORT-ENGLISH%202020-21.pdf> (accessed on 03.02.2022).

- To analyze the impact of different demographic variables on the behavior of MSMEs towards acceptance of financial technology.

This research will not only add to the scientific community's body of knowledge, but it will also be significant for the following reasons: First, this study adds to the limited research on India's MSMEs. Second, this study will demonstrate the MSME sector's preference for and acceptance of financial technology. Third, this is one of the first studies to examine MSME attitudes about financial technology acceptance by incorporating different factors influencing the attitudes of individuals and organizations.

We believe that this study can significantly advance knowledge on financial technology and small company technology adoption in general by examining the most important elements influencing MSMEs' willingness to use financial technology services. The role of financial technology is discussed in recent literature (*Table 1*), but the adoption of financial technology services has received less academic attention because it is new in context, which is another way that this study makes progress. This study is the first step in creating an all-encompassing, integrated plan to explain why Indian MSMEs are adopting fintech services. This study is one of a kind since it blends MSMEs with fintech, despite the fact that earlier research has stressed the significance and function of fintech.

The next section contains a summary of the relevant research. The third section provides an overview of the variables, developed instruments, and procedures used for the study. The study's analysis and findings are detailed in section four. The conclusion and implications of the outcome were presented in the concluding part.

LITERATURE REVIEW

Micro, small, and medium enterprise of India

Micro, small, and medium enterprises (MSMEs) are a critical part of an economy given their significant contributions towards the gross domestic product, tax revenue, and employment [7, 8] but access to external finance is difficult for them [9]. Unlike major firms, which can raise funds through global financial markets, most MSMEs must rely entirely on domestic banking institutions to obtain credit. This is because huge corporations have greater

financial and technical resources than micro, small, and medium enterprises (MSMEs) [10], which results in MSMEs seeking alternative financing channels outside the traditional banking industry and capital markets to satisfy their increasing financing needs [11]. Further, the small business sector continues to suffer from acute skills shortages, which makes the process of obtaining finance more difficult. Also, access to finance is frequently identified as a critical barrier to growth for MSMEs [12]. A growing body of literature has highlighted the extent to which MSMEs are credit constrained across developing countries, emphasizing the importance of relieving this constraint to achieve higher growth. Creating opportunities for MSMEs in emerging markets is also a critical step toward economic development and poverty reduction. Also, sophisticated technology and innovation are highly important for private firms [13].

Fintech

FinTech, which stands for financial technology, generally refers to financial innovations made possible by technology. All the major companies are utilising this technology edge, from "start-ups" to "big techs" to established financial institutions. Financial technology (Fintech) and innovations in traditional business models can take advantage of the credit gap [14]. The services offered by Fintech to micro, small, and medium-sized enterprises (MSMEs) give them new perspectives and opportunities for company financing [15]. If MSMEs adopt financial technology-driven solutions in their day-to-day work, then it will accelerate their growth rapidly. Financial technology can be used in many ways, not just for accessing finance. Financial activities such as taking insurance, doing financial planning, making invoices and investments, etc. are way easier with financial technology. Fintech companies offered various types of services such as digital payments, alternate lending, insurance, investments, regulatory and robo-advisory [15]. As seen in (*Table 2*), fintech is currently active in several financial areas. Also, technology-driven changes in business models will accelerate the growth of Asia's MSMEs [15]. By modernizing inefficient processes and reducing the role of costly intermediaries, financial

Table 1

Summary of Prior Studies discussing Role of Financial Technology

Organization	Discussion
World Bank Group ^a	This report highlights the consumer risk associated with the use of Fintech Services
T&A ^b	Different business models of Fintech are discussed which is feasible as per the Indian Market.
Esya Centre ^c	Digital Infrastructure of India is discussed along Skills, Awareness, Literacy level of consumer is also highlighted. Trust & Privacy concerns of using Fintech are highlighted.
ADBI ^d	This report discusses how digitalization increases access to finance in India
RBSA Advisory ^e	Current and Future Landscape of Fintech sector in India; factors impacting Fintech sector of India

Source: compiled by the authors.

Notes: ^a World Bank. Consumer Risks in Fintech: New Manifestations of Consumer Risks and Emerging Regulatory Approaches. World Bank; 2021 Apr. URL: <https://documents1.worldbank.org/curated/en/515771621921739154/pdf/Consumer-Risks-in-Fintech-New-Manifestations-of-Consumer-Risks-and-Emerging-Regulatory-Approaches-Policy-Research-Paper.pdf> (accessed on 15.01.2022);

^b T&A Consulting. Opportunities for Swiss Fintech In India – Executive Summary. 2021. URL: <https://www.s-ge.com/en/publication/guide/20213-c5-india-fintech-fint1> (accessed on 15.01.2022);

^c ESYA Centre. Digitalising Indian Retail capacity building for a global context. ESYA Centre. 2021. URL: <https://www.esyacentre.org/documents/2021/2/12/digitalising-indian-retail-capacity-building-for-a-global-context> (accessed on 15.01.2022);

^d Nemoto N., Yoshino N. Fintech for Asian SMEs. URL: <https://www.adb.org/sites/default/files/publication/502781/adbi-fintech-smes.pdf> (accessed on 10.01.2022).

^e RBSA Advisors. Fintech Industry in India Future of Financial Services. 2021. URL: <https://rbsa.in/wp-content/uploads/reports/research-reports/RBSA-Advisors-Presents-FinTech-Industry-in-India-February2021.pdf> (accessed on 10.02.2022).

products are more fairly priced and traded in the market. Also, the working capital requirement [16], which is the biggest obstacle to survival in the early stages of the business, can be unlocked with financial technology. SMEs can benefit from financial technology in a variety of ways, including safer and faster payments, improved customer experience, increased transparency, well-managed bookkeeping, and delivering a competitive advantage.

The Indian Fintech sectors

India's FinTech industry may be nascent, but it is expanding quickly especially to a substantial market because of the innovative startup ecosystem, and supportive government policies and regulations. The fintech sector in India has experienced rapid expansion in recent years as shown in (Fig. 1). Paytm, Pine Labs, PayU, and Faircent are some of the well-known names on the list of the many Fintech businesses that are increasingly based in India. SoftBank has been making active investments in numerous promising

fintech businesses. As per Invest India,⁵ the value of fintech transactions in India is expected to increase from US\$ 66 billion in 2019 to US\$ 138 billion in 2023 at a CAGR of 20%. \$ 8.53 billion (in 278 deals) was invested in India's Fintech industry in FY 22, 323 banks participated in India's Unified Payments Interface (UPI) as of May 2022, and the system recorded 5.9 billion monthly transactions totaling more than \$ 130 billion. Payments, Lending, Wealth Technology (WealthTech), Personal Finance Management, Insurance Technology (InsurTech), and Regulation Technology (RegTech) are sectors that make up the Indian Fintech business ecosystem. According to the Medici India Fintech report,⁶ there are 2,174 active fintech start-ups in India, 405 of them are companies that offer digital payment services,

⁵ BFSI – Fintech & Financial Services. URL: <https://www.investindia.gov.in/sector/bfsi-fintech-financial-services> (accessed on 17.01.2022).

⁶ India FinTech Report 2020 by Medici. URL: <https://www.fintechcouncil.in/pdf/India-Fintech-Report-2020-Executive-Summary.pdf> (accessed on 15.08.2021).

Table 2

Different areas of financial technology

Areas	Fintech segment	Brief Description
Credit, Lending, and Deposits	Peer-to-Peer lending Marketplace for loans Crowdfunding Digital currencies	This subset of Fintech encompasses entire lending markets, including peer-to-peer lenders and marketplaces that connect borrowers with both private and institutional lenders. Platforms for crowdfunding and equity financing is covered as well
Payments	M-wallets Merchant payments International remittances Digital currencies	P2P (person-to-person), P2M (person-to-merchant), and G2P (government-to-person) transactions are examples of services that allow money to flow from one person to another. It also covers payment services provided using mobile or other technologies
Investment Management	Robo advisors, Smart contracts	This segment pertains to technology-assisted wealth advisory services
Personal Finance Management	Tax filing/processing, Credit scoring services Financial planning	With the help of technical tools and services, individual financial profiles can be actively managed
Market provision	Smart contracts, E-Aggregators, Cloud computing	It comprises services that facilitate the provision of information and services of the market in a more timely and cost-effective manner
InsurTech	Insurance aggregator	This covers small business insurance and Usage-based insurance

Source: Report of the Working Group on Digital Lending including Lending through Online Platforms and Mobile. URL: <https://rbidocs.rbi.org.in/rdocs/PublicationReport/Pdfs/DIGITALLENDINGF6A90CA76A9B4B3E84AA0EBD24B307F1.PDF> (accessed on 18.11.2021).

365 are digital lending businesses, 486 are involved in wealth management and personal finance, and 111 are involved in the insurtech sector.

Most people in India are cash driven. A step toward establishing a cashless society has been made with the help of Fintech innovations. The use of fintech has significantly changed how people manage their finances and conduct daily business. As per McKinsey Digital Report 2019⁷ digital payments market in India is predicted to

more than triple from \$ 3 trillion now to \$ 10 trillion by 2026. Digital payments (non-cash) will account for roughly 65 percent of all payments by 2026 which means 2 out of 3 transactions will be through digital modes. There is a significant increase in UPI transactions from 2018 to 2020 (Fig. 2). Fintech services are also economical since they combined streamlined products with cutting-edge technology. Financial services that were previously

⁷ Kaka N. Digital India: Technology to transform a connected nation. 2019. URL: <https://www.mckinsey.com/~/media/mckinsey/business%20functions/mckinsey%20digital/our%20insights/digital%20india%20technology%20to%20transform%20a%20connected%20nation/digital-india-technology-to-transform-a-connected-nation-full-report.pdf> (accessed on 20.08.2021).

our%20insights/digital%20india%20technology%20to%20transform%20a%20connected%20nation/digital-india-technology-to-transform-a-connected-nation-full-report.pdf (accessed on 20.08.2021).

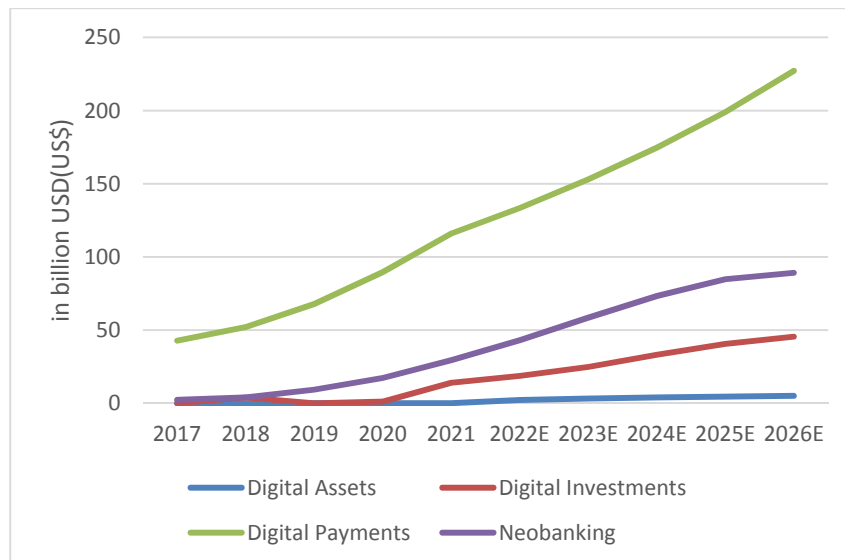


Fig. 1. Increase in different Fintech sectors in India

Source: Statista Research Department. URL: <https://www.statista.com/topics/8077/digital-lending-industry-in-india/> (accessed on 17.01.2022).

provided by salespeople, desktop computers, and branches are now mobile because of these technologies and can move around freely on laptops and mobile phones. By learning about user habits, technologies like machine learning and predictive behaviour analytics enable users to make educated decisions about their savings and spending.

The digital payment spaces have witnessed a significant push due to mobile wallets, smart phones, near-field communications, and QR codes as described in Table 3 where the volume of digital transactions has increased from 1695.2 to 43711.8 in a span of nine years (2012–2021). MSMEs, which are significant players in the global economy, have embraced mobile money. MSMEs are currently utilising mobile money for financial services like insurance, savings, and credit. They have begun receiving payment via mobile money (for their labour or for the sale of goods or services).

MSME strategies to adopt Fintech

Financial technology is required not only for the growth of micro, small and medium enterprises but also for the growth of the Indian economy. Also, high technological skills provide strategic advantages to businesses [17]. As per NSSO,⁸ Indian

medium and large enterprises are embracing financial technology in significant ways, even ahead of their Western counterparts, especially when it comes to mobile technology. Despite India's great performance in the adoption of mobile technology, today's small businesses in India are not realizing their full potential. MSME owners and managers may be apprehensive about innovations due to the financial costs involved in adopting innovative technologies [18] and/or because of the uncertainty revolving around new technologies [19].

The processes of financing activities in MSMEs are very different from those of large firms. Also, acceptance of any kind of technology for MSMEs is highly complicated in nature as not only firm-level variables but also owner-specific variables influence the level of acceptance. The financial behavior of the owner-manager is influenced by the entrepreneur dimension and entrepreneur cognition such as age, experience, education, and ownership structure. It has also been found that MSMEs are adopting fintech through mobile phones. Also, entrepreneurial experience and prior family business have a positive impact on entrepreneurial goals [20]. The more a person is inclined to adopt technology or gain technological knowledge, the more interested they will be in the adoption of Fintech Services.

⁸ NSSO. Operational characteristics of unorganized manufacturing enterprises in India. 2007. URL: <http://doc.inflibnet.ac.in/datarepository/index.php/catalog/79> (accessed on 01.02.2022).

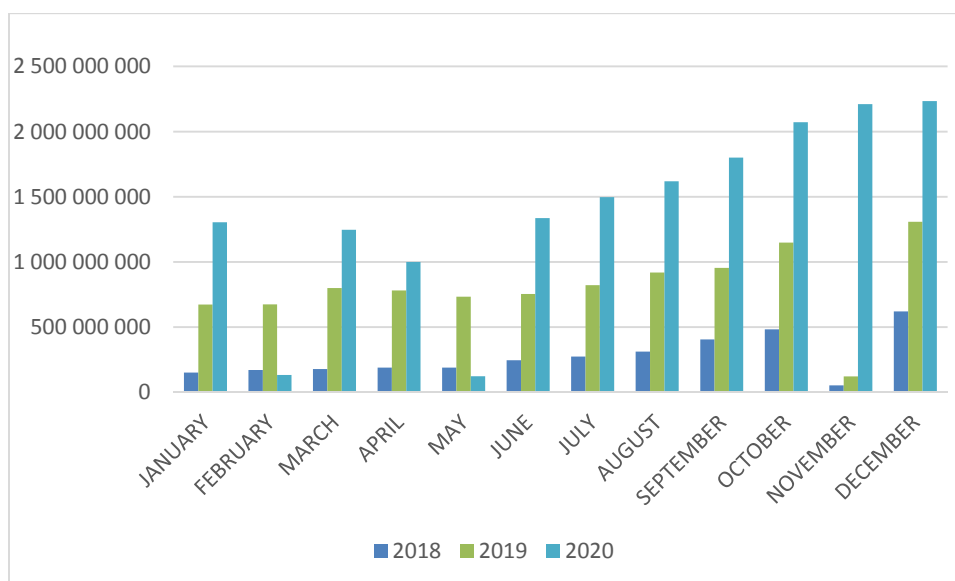


Fig. 2. Volume of UPI Transactions in India

Source: compiled by the authors. URL: <https://www.npci.org.in/> (accessed on 17.10.2021).

Individuals' and organizations' adoption behavior towards technology acceptance is defined by a variety of models that have been studied in earlier research. The Technology Acceptance Model (TAM) is one of the most common models used by researchers in the study of individual and organizational technology adoption [21]. TAM proposed that perceived usefulness and perceived ease of use have a direct impact on behavioral intention to use the actual system [21, 22]. Various extensions to the TAM were also conducted, which included trust [23], satisfaction [24], government support [25], and brand [26]. In this study, various factors are considered that could impact the intention of MSMEs which has been derived from past literature (Table 4).

RESEARCH METHODOLOGY

Instrument development

The researchers employed a modified questionnaire for data collection. The measurement items used in the questionnaire were derived from previous studies carried out in developing countries.

The questionnaire consists of 25 questions, which are divided into three parts. The first part covers demographic and socioeconomic variables such as age, gender, education level, and experience in current business. The second part identifies questions related to the understanding of MSMEs related to financial technology. The third part is devoted to the questions related to the behavioural factors that could impact the

Table 3

Volume of Total Digital Transactions

YEAR	VOLUME	VALUE
2012–2013	1695.2	710 774.2
2013–2014	2451.2	784 684.1
2014–2015	3517.9	822 722.4
2015–2016	5947.1	920 469
2016–2017	9780.8	1 121 649
2017–2018	14 714.4	1 370 844
2018–2019	23 260.2	1 637 134.25
2019–2020	34 124	1 620 894.13
2020–2021	43 711.8	1 414 851.73

Source: compiled by the authors. URL: <https://www.npci.org.in/> (accessed on 17.10.2021).

attitude of respondents towards financial technology acceptance, using a five-point Likert scale ranging from 1 (Strongly Disagreed) to 5 (Strongly Agreed) for specific activities in business (Table 5).

Validity and reliability of the questionnaire

The validity of the questionnaire was determined by consulting subject experts and conducting a pilot study

Table 4

Summary of Prior Studies using TAM Model

Author	Variables Involved	Data Source	Implication
Y. Wang et al. [27]	Perceived Ease for Use, Perceived Trust, Perceived Usefulness, Perceived Privacy, User attitude, User acceptance	A paper-based questionnaire was used to poll 361 people	Voice recognition scored the highest in the PU scenario, according to the findings
D. Folkinshteyn and Lennon [28]	Perceived Ease for Use, Perceived Risk, Perceived Usefulness	Secondary data source	Bitcoin the money has several key favorable factors in PEU and PU for both developers and end-users, arising from its free open-source nature, putting the user in control, and greater transaction efficiency
R. Lindsay et al. [29]	Perceived ease of use, Perceived usefulness, Attitude, External variables as local supervision, the influence of peers Behavioural Intention and Actual Usage	43UK police force	The influence of local supervision, fit of technology, and influence of peer external variable is the most influential factors
G. Mortimer et al. [30]	Need for interaction, Social influence, Perceived risk, Perceived ease of use, Perceived usefulness	Intentions of consumers to adopt mobile banking	Apart from TAM model culture is the important factor for the adoption of m-banking
B. Marakarkandy et al. [31]	Perceived ease of use, Perceived usefulness, Attitude, subjective norm, image, banks initiative, internet banking self-efficacy, internet usage efficacy, trust, perceived risk, trialability, and government support	300 responses were collected	The study's findings corroborate the suggested model to a great extent, allowing researchers to better understand the impact of subjective norms, image, banks' initiatives, internet banking self-efficacy, internet usage efficacy, trust, perceived risk, and government backing on online banking adoption
J.L.M. Tam [32]	Perceived ease of use, Perceived usefulness, Attitude, Brand Familiarity	366 responses were collected in the Korean market	The findings revealed that buyers with varying levels of brand familiarity have certain similarities. Customers should be familiarised with a service while marketers capture opportunities to offer a favorable experience to gain future purchases
Z. Irani et al. [33]	Resources, Social Influence, Self-Efficiency, Utilitarian outcomes	358 responses were collected	Consumers' Behaviour Intention was highly influenced by utilitarian outcomes, self-efficacy, perceived resources, and social influence, according to the findings

Source: author compilation.

with 50 participants. The participants were asked to rate the questionnaire and express their thoughts on whether the questions were appropriate. Experts were also asked to provide additional information to make the questions more understandable. The experts were also asked if any more beneficial questions could be added, as well as whether any extraneous ones might be removed. The questionnaire has been modified to the best extent possible before conducting the survey. The questionnaire was also tested for reliability using Cronbach's alpha. The results of Cronbach's alpha indicate an instrument is reliable if alpha values are above 0.70. There are 25 items in the questionnaire to analyze the motives, preferences, and acceptance of financial technology. The alpha value of 21 items (excluding demographic questions) is .891, which indicates that the instrument is reliable.

Sampling and data collection

The snowball sampling approach, a non-random sample technique, has been used to acquire data. The original respondents introduced additional key informants who participated and were introduced to other respondents, leading to the usage of snowball sampling. A total of 150 questionnaires were shared with owners/managers of the firm operating in the Shahdara industrial area, situated in Delhi in North India. Shahdara industrial areas are covered under 24 approved industrial areas by the Labour commissioner of Delhi. The time period for the collection of responses was from December 2020 to February 2021. Out of the total questionnaires distributed, 117 responses were considered for the analysis, the response rate being 78%.

Data analysis

The data was recorded, coded, and analyzed using statistical software via SPSS (version 21). The data collected from the questionnaire is analyzed statistically with the help of frequency distribution, percentage analysis, mean scores, the Kruskal-Wallis H test, and the Mann-Whitney U test. The Kruskal-Wallis H and Mann-Whitney U tests were applied, and the assumptions made about the data were verified.

The Kruskal-Wallis H test is a rank-based non-parametric test that may be used to decide if there are statistically substantial variations among two or more groups of an independent variable on a continuous or ordinal dependent variable. It is viewed as a non-

parametric substitute for the one-way ANOVA and an extension of the Mann-Whitney U test. The second assumption is that the independent variable must contain two or more categorical, independent groups. The third assumption is that data must be independent of observations. The fourth assumption is that distributions in every group should have the same distribution curve (which also means the same variability). After examining the data, this statistical test was used to generate reliable and legitimate results for analyzing the significant difference in the Fintech Service acceptance based on respondents' age, education, and experience.

The Mann-Whitney U test has similar assumptions to the Kruskal-Wallis H test except for the second assumption. For example, the Mann-Whitney U test is used when an independent variable contains only two categorical, independent groups [39]. Therefore, to analyze the significant difference in the Fintech Service acceptance based on respondents' gender, the Mann-Whitney U test is used.

RESULTS AND DISCUSSION

Analysis of knowledge of MSMEs towards Financial Technology

We obtained information by asking the respondents questions about their understanding of financial technology, what kind of technology behaviour they have for adopting any new technology, and the reasons for adopting Fintech services.

Table 6 reveals the behavior of the respondents while adopting any new technology in business. 37.6% of respondents consider themselves early adopters, which means that the MSME sector is making its way toward technology in their business. 45.3% of respondents are moderate adopters, who reflect the characteristics of the MSME sector and have previously adopted success stories. The remaining respondents are non-adopters who are not willing to adopt new technology in their business.

Table 7 discloses the understanding of financial technology among respondents. It reveals that the maximum respondent has a basic understanding of financial technology (40.2%). 35% of the respondents have a high awareness of financial technology services. Results show that only 12% of respondents have a low understanding, and 6.8% have very low knowledge of financial technology.

Table 5

Source of the questionnaire

CONSTRUCT	ITEM	SOURCE
Knowledge of Financial Technology	3	GPFI*
Perceived ease for Use	4	F.D. Davis [34]
Perceived Usefulness	3	
Trust	4	G. Kim et al. [35]
Satisfaction	3	Ngubelanga et al. [36]
Brand	2	Setiawan [37]
Government Support	2	L.-C. Hiew et al. [38]

Source: author compilation.

Note: GPFI. (2020). Promoting digital and innovative SME financing. World Bank Group. URL: https://www.gpfi.org/sites/gpfi/files/saudi_digitalSME.pdf (accessed on 01.07.2021).

Table 6

Behaviour for Adopting Technology

Types of Adopters	Number	%
Non- Adopter	20	17.1
Moderate Adopter	53	45.3
Early Adopter	44	37.6

Source: author compilation.

Table 8 discloses the key purpose for adopting Fintech services. 49% of respondents consider time savings as one of the important features for the adoption of Fintech services. 40% of respondents consider anywhere access an important reason for the adoption of Fintech services. IT security concerns could be the cause of this [40].

Analysis of MSMEs behaviour towards Financial Technology Acceptance

Statements were considered to measure (using a 5-point Likert scale) the impact of MSMEs preference towards Fintech Services. To record the MSME preference, logical statements are recorded and tabulated using percentage and mean rating evaluation. These statements were formed based on the Technology Acceptance Model [41, 42]. To better fit the present study perspective, some of the statements have been modified. The amplitude of consistency towards statements is denoted from 1 to 5 (five denotes strongly agreeing, while one strongly

Table 7

Understanding of Financial Technology among MSME Sector

Understanding of Financial Technology	Number	%
Very low	8	6.8
Low	14	12
Basic	47	40.2
High	41	35
Very high	7	6

Source: author compilation.

Table 8

Key Purpose for adopting Financial Technology

Motives for Adoption	Number	%
Anywhere access	40	34.2
Quick and easy implementation	21	17.9
Timesaving	49	41.9
Transparency in services	7	6
Total	117	100

Source: author compilation.

Table 9

Percentage of Respondents, Mean Score, Interpretation, and Recommendation

Construct	Items	Statement	1	2	3	4	5	Mean	Recommendations
Perceived Ease for use	PE 1	Using Fintech Services, I can meet my Business needs easily	0	0	5.1	82.1	12.8	4.08	Respondents agreed with the statement, implying that Fintech can bridge the credit gap that MSMEs currently face
	PE 2	It is easy to use Fintech Services	0	0	3.4	78.6	17.9	4.15	Respondents agreed with the statement, demonstrating the MSME sector's willingness to accept new technologies
	PE 3	Using Fintech Services improves the efficiency of Business, as accessing information about different platforms is faster	0	0	3.4	73.5	23.1	4.20	Respondent agreed with the statement which shows that Fintech providers are playing an efficient role in providing services
	PE 4	Fintech Services reduces the time of transaction	0	0	2.6	60.7	36.8	4.34	Respondent agreed with the statement which highlights one of the biggest advantages of Fintech i.e. It saves a lot of time
Perceived Usefulness	PU 1	Fintech Financial Products has Lower Transaction fees	.9	0	5.1	59.8	34.2	4.26	Respondent agreed with the statement which shows that Financial Product available digitally is causing less burden to MSMEs financially
	PU 2	Fintech Financial Products has a faster rate of Approval	0	0	5.1	57.5	37.6	4.32	Respondents agreed with the statement which highlights the efficiency of doing transactions digitally rather than in traditional mode
	PU 3	Fintech Financial Products has less Paperwork	0	0	3.4	69.2	27.4	4.24	Respondent agreed with the statement which highlights the ease of doing business with less paperwork
Trust	TR 1	Though I prefer Fintech services there is a minimum risk involved while making my queries and/or making banking transactions through Fintech Services Providers	3.4	.9	0	77.8	17.9	3.10	Respondents agreed with the statement which shows that MSMEs identify the risk related to digital transactions
	TR 2	I believe using Fintech Services my Business/ Personal information is safe	.9	0	17.1	48.7	33.3	4.14	Respondent agreed with the statement which shows that the MSME sector trust the Fintech sector for their business and personal information
	TR 3	I believe my money is safe in E-wallets/ Mobile apps	0	0	9.4	63.2	27.4	4.18	Respondent agreed with the statement which shows that users are trusting the Financial provider/ companies they are using
	TR 4	In general, I believe, I trust Fintech Services	0	0	8.5	59	32.5	4.24	Respondent agreed with the statement which can be interpreted as an acceptance of doing business Digitally

Table 9 (continued)

Construct	Items	Statement	1	2	3	4	5	Mean	Recommendations
Satisfaction	ST1	Fintech Services platforms provide fair/ reasonable services and products	0	0	6.8	70.9	22.2	4.15	Respondents agreed with the statement as many attractive financial products are offered on different platforms by Fintech Service providers
	ST2	I believe Fintech Services facilitate better decision making	.9	0	7.7	62.4	29.1	4.19	Respondents agreed with the statement as respondents can compare different products across different platforms and facilitate decision-making
	ST3	I get my refunds quickly while doing any transaction through Fintech Service Providers	0	0	4.5	60.7	35.0	4.31	Respondents agreed with the statement as the maximum time for any refund is within 48 hours
Brand	BR 1	I prefer to accept the services provided by familiar brands of Fintech Services platforms	0	0	6.0	54.7	39.3	4.33	Respondent agreed with the statement which shows that only established Financial service Provider products are accepted in the market. It also highlights one of the features of small businesses i.e., trust in previously used products by peers or used by them earlier
	BR 2	I do not use any new app for my banking transaction	.9	0	6.0	57.3	35.9	4.27	Respondent agreed with the statement which shows that customers do not rely on any new service provider. Brand Familiarity plays an important to respondents
Government Support	GS 1	I believe the government has introduced favorable legislation and regulations for Fintech Services in recent years	0	0	9.4	58.1	32.5	4.23	Respondent agreed with the statement which shows that respondents are aware of government initiatives and policies
	GS 2	I believe the government is active in setting new infrastructure such as the infrastructure telecom network, which has a positive role in promoting Fintech Services	0	0	11.1	53.8	35.0	4.24	Respondent agreed with the statement which shows that the Government is also inclined toward Financial Technology development

Source: author compilation.

disagrees). In addition, the following criteria are used for the analysis:

- A mean score of 1.00 to 1.80 indicates strong disagreement.
- A mean score of 1.80 to 2.60 indicates disagreement.
- The mean score between 2.60 and 3.40 means neutrality.
- The mean score between 3.40 and 4.20 means “agree”.
- A mean score of 4.20 to 5.00 indicates that the authors strongly agree [43, 44].

Table 10

Demographic Profile of Respondents

Characteristics	Value	Frequency	Percentage (%)
Gender	Female	25	21.4
	Male	92	78.6
Age	20–30 Years	5	4.3
	31–40 Years	43	36.8
	41–50 Years	43	36.8
	51–60 Years	15	12.8
	61 or More	11	9.4
Education level	No Formal Education	14	12
	Senior secondary Graduate	43	36.8
	Vocational Diploma	16	13.6
	Postgraduate	41	35
	Ph.D.	3	2.6
Experience	Less than 3 years	8	6.8
	3–6 Years	13	11.1
	6–9 Years	34	29.1
	9–12 Years	34	29.1
	12 or More	28	23.9

Source: author compilation.

Analysing the impact of Fintech service acceptance based on different demographic variables

Acceptance of Fintech services (a dependent variable) is measured by using 20 statements in Table 9. Each statement is tested for a significant value of 0.05 and 0.10. Also, the Kruskal-Wallis H test was conducted to analyze the impact of age, education, experience, and gender on the respondents (independent variables). The demographic profile of respondents is discussed in Table 10. It has also been used to test the hypotheses formulated. As in the paper, we have questioned Likert statements that are ordinal in nature, so the most appropriate test when the dependent variable is rank-based, that is, ordinal in nature, is the Kruskal-Wallis H test. The significance value is either higher or lower than 0.05 and 0.10, which is used to accept or reject the hypothesis.

As shown in Table 10, the demographics of the respondents are comprised of gender, age, education, and experience in current business. Of the total respondents, 78.6% were men and 21.4% were women. The majority of the respondents were in the age groups of 31–40 years and 41–50 years (36.8% each). The majority of the respondents held education up to senior secondary (36.8%), 13.6% of the respondents held vocational diplomas, 35% were post-graduates, 12% of the respondents did not hold any formal education, and the remaining were Ph. Ds. After the computation of the 20 statements related to Fintech service acceptance, these statements were then combined, and a scale score was formed to accept or reject the null hypothesis. The results of the Kruskal-Wallis H test are given in Table 11 and Table 12. The following hypotheses were formed to find out the significant differences in the acceptance of Fintech services.

Table 11

Kruskal-Wallis H Test

Items	Age		Education		Experience	
	Chi-Square	Sig.	Chi-Square	Sig.	Chi-Square	Sig.
PE 1	15.620	.004	8.524	.074	30.023	.000
PE 2	19.208	.001	10.393	.034	22.523	.000
PE 3	14.447	.006	4.733	.316	20.839	.000
PE 4	16.599	.002	12.154	.016	18.083	.001
PU 1	11.542	.021	9.906	.042	10.868	.028
PU 2	8.505	.075	8.436	.077	9.539	.049
PU 3	6.6166	.187	10.596	.031	9.866	.043
TR 1	10.212	.037	3.188	.527	8.815	.066
TR 2	11.402	.022	3.870	.424	19.379	.001
TR 3	8.615	.071	9.687	.046	11.866	.018
TR 4	15.401	.004	7.433	.115	10.504	.033
ST1	8.427	.077	6.646	.156	10.707	.030
ST2	15.067	.005	9.147	.058	16.495	.002
ST3	8.352	.080	10.698	.030	6.695	.153
BR 1	9.837	.043	10.290	.036	16.631	.002
BR 2	12.418	.015	5.677	.225	19.347	.001
GS 1	14.788	.005	3.641	.457	9.209	.056
GS 2	11.502	.021	3.605	.462	11.486	.022

Source: author compilation.

Ha1: There is a significant difference in the acceptance of the Fintech Service based on respondents' age.

Ha2: There is a significant difference in the Fintech Service acceptance based on respondents' educational qualifications.

Ha3: There is a significant difference in the acceptance of the Fintech Service based on respondents' experience in the business.

Ha4: There is a significant difference in the acceptance of the Fintech Service based on respondents' gender.

Kruskal-Wallis H test and Mann-Witney U test have been used to find significant differences in the Fintech Service acceptance based on different demographic factors (Table 13) and (Table 14).

The significance value of either higher or lower than 0.05 and 0.10 is used either to accept or reject

the alternate hypothesis. Based on Age, we reject the alternative hypothesis (Ha1) as the significance level (0.140) is more than 0.10, which means that there is no significant difference in the Fintech Service acceptance based on respondents' Age. Based on Educational qualification, we reject the alternate hypothesis (Ha2) as the significance level (.215) is more than 0.05 and 0.10 both, which means that there is no significant difference in the Fintech Service acceptance based on respondents' educational qualification. Based on Experience in Business, we accept the alternative hypothesis (Ha3) as the significance value (0.008) is less than 0.05, which means that there is a significant difference in the Fintech Service acceptance based on respondents' occupations. Based on Gender, we reject the alternative hypothesis (Ha4) as the significance level (0.340) is more than a1 0.05 and 0.10 both and Z

(0.955) is more than 1.96, which means that there is no significant difference in the Fintech Service acceptance based on respondents' gender.

FINDINGS

“Digitization has a strong impact on the financial services industry” [45]. After analyzing the data and putting the hypotheses to the test, the study's main conclusions are as follows: The majority of those classified as early adopters were actually young, between 31 and 40 years old, with a percentage of 19.65%. There was extensive acceptance of technology among the MSME sector as most respondents were considered moderate adopters, which is 52.13%. The results (*Table 6*), (*Table 7*) and (*Table 8*) show that MSMEs have knowledge about Fintech services. The MSME sector adopts financial technology for several reasons, but the most prominent reasons are saving time (41.9%), accessing the interface anywhere (34.2%), and because of quick and easy implementation (17.9%). The results are similar to a prior study, which explains that Fintech products were created from the bottom up with the consumer in mind, who were tech-savvy and wanted transactions to be as simple as possible [46]. Also, 40.2% of the MSMEs understand financial technology, and 35% have a high understanding of financial technology, which yields a great opportunity for Fintech developers and innovators.

Fintech has the ability to completely revolutionize the financial environment by offering a wide range of financial goods at low prices [46]. This can be seen from our study also, as 70.9% of respondents believe that Fintech platforms provide fair and reasonable services and products, 59.8% of respondents believe that Fintech services have lower transaction fees, and 73.5% of respondents agree that Fintech platforms provide efficiency in decision making as information about different products can be collected at a much faster rate. Fintech also makes it more likely for SMEs to borrow at reduced interest rates, which assists the MSME in meeting their business requirements [47, 48]. Fintech services are provided with an easy interface that can be used by using their mobile applications, as MSMEs are typically run by a few people wearing many hats [49] and they do not have much time to devote to one thing. Furthermore, these technologies enable

Table 12

Mann-Whitney U Test

Items	Gender	
	Z	Sig.
PE 1	.075	.940
PE 2	.770	.442
PE 3	.156	.876
PE 4	1.365	.172
PU 1	.474	.636
PU 2	1.324	.185
PU 3	1.260	.208
TR 1	1.769	.077
TR 2	.246	.805
TR 3	.644	.520
TR 4	.416	.678
ST1	.820	.412
ST2	.890	.374
ST3	1.475	.140
BR 1	.480	.632
BR 2	.764	.445
GS 1	.345	.730
GS 2	.074	.941

Source: author compilation.

borrowers to receive funds more rapidly by speeding up loan applications [7, 50]. Among these advantages, there is a significant risk involved in fintech transactions, which is agreed upon by 77.8% of respondents. Thus, the result is similar to previous literature where consumer risk had the most negative effect on the Fintech continuation intention, while convenience had the strongest positive effect. As a result, the government must monitor and analyze the quick and transformative changes brought on by Fintech so that regulators and society can keep up with the underlying technological and entrepreneurial flux.⁹ Brand familiarity and good experience also impact the behavioral intention of

⁹ Reserve Bank of India. Annual Report 2020–2021. 2021. URL: <https://rbi.org.in/Scripts/AnnualReportMainDisplay.aspx> (accessed on 10.02.2022).

Table 13

Kruskal-Wallis H Test Statistic

Dependent variable: Fintech service acceptance	Independent variables		
	Age	Education	Experience
Chi-Square	6.926	5.791	13.777
Degree of Freedom	4	4	4
Significant Value	.140	.215	.008

Source: author compilation.

Table 14

Mann-Witney U test

Dependent variable: Fintech service acceptance	Independent variable
	Gender
Z	.955
Degree Of Freedom	1
Significant Value	.340

Source: author compilation.

consumers to adopt the product/service [51]. The results also show that brand familiarity also plays an important role for the respondents while adopting Fintech services. It can be concluded that with the help of the TAM Model, we can understand the behavior of MSMEs towards financial technology acceptance as perceived ease of use, perceived usefulness, trust, and government support impact the decisions of MSMEs as Fintech customers.

To find out how Fintech services are accepted among the MSME sector varies according to different demographic variables, the Kruskal-Wallis H test was performed, and we observe that MSME preferences with respect to Fintech services have significant differences on the basis of experience, but no significant differences are found on the basis of age, educational qualification, or gender, which is in contrast with the findings of the study by Demircuc-Kunt et al. (2018) [52], as the study observed differences in the acceptance of the usage of Fintech services-based on the gender of the owner/managers. The results of this research also have partial similarities with the previous studies which confirmed the significance of personal features of MSME owners

and managers in their business decisions [53, 54]. There was no significant difference found in the acceptance of Fintech services based on the age of the owner/manager, which is the opposite of the previous studies, which say that motivations for using financial technology among the younger age group owners are greater as compared to older ones.

CONCLUSION AND IMPLICATION**Conclusion**

The advent of the Fintech industry has made banking simple and straightforward¹⁰ which has changed the ecosystem of the MSME sector. Overall, Fintech has brought some key changes in the MSME sector as well as the Indian banking ecosystem, such as improved opportunities for financial inclusion, motivation in entrepreneurship culture, credit assessment with the help of technology, improved customer experience in loan approval and disbursement, quick and easy funds transfer, etc. Thus, Fintech could be the solution for the MSME sector's different financing activities.

Practical and Managerial Implications

Our research has significant managerial and practical consequences. First, small businesses are looking for alternate financing solutions apart from traditional banks and financial institutions therefore, fintech companies should seize the opportunity by building trustworthy products/services. Fintech companies should consider brand building as a crucial point in their marketing campaigns. Second, small businesses are also showing interest in other digital services of fintech as digital investments, wealthtech, and insurtech hence, fintech companies should work on their robo-advisory and portfolio management tools and make them more user-friendly. Third, our findings complement the government's attempts to develop policies aimed at expanding Fintech services. For example, the Digital India Movement, Centralised KYC, the Stand-up India movement, and Payment Systems Vision 2019–2021. These policies have resulted in a significant improvement in digital transactions. The

¹⁰ J. Skan, J. Dickerson, L. Gagliardi. Fintech and the evolving landscape: landing points for the industry. 2016. URL: https://www.Accenture.com/t20160427T053810_w_/us-en/_acnmedia/PDF-15/Accenture-Fintech-Evolving-Landscape.Pdf (accessed on 15.07.2021).

government can introduce some policies through which profile-based or personalized fintech services can be made available to the MSME sector. Fourth, awareness programs must be conducted by the government at regular intervals to increase the awareness of MSMEs. Lastly, there is a need for a strong financial transaction grievance redressal system that is governed by the government to encourage more small businesses to incorporate Fintech into their businesses.

LIMITATION OF THE STUDY AND SCOPE FOR FURTHER RESEARCH

Certain limitations applied to this research can be incorporated in future studies. The study used a sample of 117 respondents; therefore, the sample size should be expanded, or a new type and size of

sample should be used to reinforce the results for a better representation of MSME sector preferences. Second, the study offers a broad perspective on financial technology and the preferences of small and medium-sized businesses. Further discussion of financial technology acceptability and its impact on MSME performance has been omitted, paving the path for future research. Thirdly, variables identified through the TAM model can be tested using more advanced statistical tools like regression analysis. Lastly, there are a lot more variables to be studied that impact the financial behaviour of the MSME sector, but this paper only discusses demographic variables, so other variables related to firm characteristics like the number of employees, export activity, and industry can also be incorporated.

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