

DIGITAL TRANSFORMATION,  
STRATEGIC RESILIENCE,  
CYBER SECURITY AND RISK  
MANAGEMENT

# CONTEMPORARY STUDIES IN ECONOMICS AND FINANCIAL ANALYSIS

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**DIGITAL TRANSFORMATION,  
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MANAGEMENT**

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# CONTENT

<i>About the Editors</i>	vii
<i>About the Contributors</i>	xi
<i>Foreword</i>	xix
<i>Acknowledgement</i>	xxi
<b>Chapter 1 Awareness and Access to Fintech Lending by Micro Steel Enterprises in Punjab, India</b> <i>Naresh Sachdev, Kiran Sood and Kawal Nain Singh</i>	1
<b>Chapter 2 Internet of Things in Healthcare Services</b> <i>Kuldeep Singh Kaswan, Jagjit Singh Dhatteval, Premkumar Chithaluru and Ankita Tiwari</i>	17
<b>Chapter 3 Artificial Intelligence in Human Resource Management: Recent Trends and Research Agenda</b> <i>Akansha Mer</i>	31
<b>Chapter 4 Women Entrepreneurs and the Usage of Artificial Intelligence for Business Continuity in COVID-19</b> <i>Deepali Bhatnagar and Kajal Yadav</i>	57
<b>Chapter 5 An Analysis of the Impact on India's Sustainable Development Resulting from Women in Small Enterprises' Fin-Tech and Financial Awareness During Covid-19 using the (UTAUT) Model</b> <i>Uma Shankar Yadav, Kiran Sood, Ravindra Tripathi, Simon Grima and Mano Ashish Tripathi</i>	71
<b>Chapter 6 Revisiting Workplace Spirituality as an Antidote to Burnout and an Enabler of Resilience in NPOs: An Indigenous Approach</b> <i>Akansha Mer and Amarpreet Singh Viridi</i>	87
<b>Chapter 7 An Empirical Analysis of Sustainable Strategies to Surmount Overtourism in Oman</b> <i>Mohit Kukreti and Aarti Dangwal</i>	107

<b>Chapter 8 Triple Entry Accounting with Blockchain Technology</b> <i>Shivani Inder</i>	123
<b>Chapter 9 Customer Behaviour Analysis Using Machine Learning Algorithms</b> <i>Ram Krishan</i>	133
<b>Chapter 10 Biodiversity Financing: A Strategy Towards Sustainability</b> <i>Gurpreet Kaur</i>	143
<b>Chapter 11 Bibliometric Analysis of Film Marketing Research from 1976 to 2021</b> <i>Sandeep Gundeti, Amit Jain and Deepali Bhatnagar</i>	153
<b>Chapter 12 Financial Well-being Among Tourism Industries Employees in India</b> <i>Ankit Dhiraj, Sanjeev Kumar and Divya Rani</i>	169
<b>Chapter 13 Cryptocurrency and Digital Money in the New Era</b> <i>Rushita, Kiran Sood and Uma Shankar Yadav</i>	179
<b>Chapter 14 Air Pollution and Homo Sapiens Health</b> <i>Medha Gupta, Anmol Sharma, Kiran Sood and Simon Grima</i>	191
<b>Chapter 15 How has COVID-19 Impacted the Business Performance of Sri Lankan Firms: A Qualitative Inquiry</b> <i>Narayanage Jayantha Dewasiri, Nawalage Shashini Piyumika Perera, W. A. I. D. Wijerathna, P. G. S. Amila Jayarathne, Vithiyalani Muthusamy and Simon Grima</i>	201
<b>Chapter 16 Economic Research in Banking – A Survey</b> <i>Peterson K. Ozili</i>	217
<b>Chapter 17 Control of State Aid in Kosovo in Accordance with EU Regulations and Practices</b> <i>Gani Asllani, Bedri Statovci and Simon Grima</i>	227
<i>Index</i>	237

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# FOREWORD



The book innovatively enhances several advanced research performed to provide accurate solutions to the ongoing challenges faced worldwide that have brought digital transformation, cyber security and risk management into a fierce debate and at the core of comprehensive resilience strategies.

The current ongoing challenges faced at the global level have brought digital transformation, cyber security and risk management into a fierce debate, both scientists and public discourse rendering global the keen need for strategic resilience through new innovative measures and coordinated risk management approaches. The current Covid-19 pandemic has an outburst on the global economy, making digitalisation even more relevant and a key milestone to overcome these challenges and enhance sustainable economic development. Digitalisation notably shapes the world economy, impacting individuals, businesses, industries, labour markets, education systems and governments. On the one hand, digital transformations and technological progress are transforming the skills needed by individuals to actively engage in the world of online work in a modern economy and, especially, post-pandemic crisis. However, these are also associated with risks and deterring factors that must be managed wisely to ensure an effective digital environment, strategic resilience and sustainability.

Digitisation of economic and management processes allows for new value delivery and higher efficiency in implementing their strategic goals. However, it involves the need to reconfigure, reconstruct or build new business models. Maximising the benefits of digitising processes can be achieved when data and information from multiple sources within cyber security are analysed and shared. In this way, it is possible to increase the transparency of flows, reduce costs from a global perspective, and reduce uncertainty and risks arising both within the processes and in their environment. Such solutions may also counteract the negative effects of crises caused by unforeseen circumstances like the Covid-19 pandemic.

The book is divided into various sections, where one section focuses on Blockchain: a disruptive technology witnessing steady adoption across various industry verticals, such as banking, finance, hospitality, and health care. Blockchain is one of the technology industry's most powerful stacks to create and deploy decentralised frameworks. The emergence of artificial intelligence (AI) blended with financial concepts as a promising new area in business and technology – financial technology, or fintech is another important aspect of this book also plays an essential role in achieving a fundamental shift towards sustainability and social impact.

This book is highly recommended for scholars and students of human resource management, knowledge management and organisational innovation because it presents a range of techniques to enhance human resource management's operation by applying state-of-the-art AI technology. Moreover, it leaps into technologies, including the Internet of Things (IoT), AI, Big Data analytics and Blockchain; the book also shows how enterprises can take advantage of them and ultimately beat the competition.

This book is an invaluable resource for postgraduate and undergraduate students of digital business, innovation and transformation. Showing how to initiate digital transformation across an organisation will prepare business owners, directors and management of small- and medium-sized businesses to take strategic advantage of new and emerging technologies to stay ahead of their competition.

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## **IN MEMORIAM: TATJANA VASILJEVA (1955–2022)**

Professor Tatjana Vasiljeva, a beloved academic and research international community member, passed away on May 18, 2022. As a celebrated scholar on many subjects, she enthusiastically joined the book's Editorial team and contributed exceptionally to determining the book's purpose, structure, and style. Everyone who knew her praised her enthusiasm, passion, and professionalism. She would be very proud today of the authors' achievements and would congratulate them with the book publishing. The editorial team will always keep warm memories of our collaboration with Tatjana Vasiljeva.

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# CHAPTER 1

## AWARENESS AND ACCESS TO FINTECH LENDING BY MICRO STEEL ENTERPRISES IN PUNJAB, INDIA

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### ABSTRACT

*The purpose of the study is to understand the perception held by Micro Steel Enterprises in Punjab, India, towards the role played by FinTech in it. The quantitative study uses a structured questionnaire to collect primary responses. A total of 400 Micro Steel Enterprises have been approached from Punjab. Here, statistical analyses are used, including chi-square tests, Principal Component Analysis, Multiple Linear Regression and One-way ANOVA. The satisfaction levels across the three factors revealed a significant relationship with the financial aspect only. This clarifies the situation and reveals that using the FinTech services among the Micro Steel Enterprises is only a modification caused by the financial constraints that generate satisfactory levels in the respondents. However, based on the operational conditions of these enterprises is not the factor causing the satisfaction levels, neither are the banking processes. The advances in the course must be solely made based on the financial aspects of Micro Steel Enterprises. The two variables of the owner of these firms are the owner's age and the firm's ownership type. The banking aspect and the Micro Steel Enterprise are also found to have associations with them. To motivate the use of FinTech in the process, the owners can be motivated*

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*differently towards its usage. The study is a novel attempt to understand the Micro Steel Enterprises in Punjab and its perception towards the use of FinTech. Punjab is the hub of the Steel Industry in India.*

**Keywords:** Micro; steel; FinTech; enterprises; finance; micro, small and medium enterprises

## 1. INTRODUCTION

The domain of FinTech and its application have emerged at new levels in the present times. FinTech, popularly known for Financial Technologies, has recently established itself as one of the most effective methods of handling various sectors. The inclusion of FinTech in the market has largely facilitated the entry of newcomers into the market space with the help of innovative products and services (Gozman et al., 2018). These novel strategies, aided by technological support, have created a new value-creation environment for the industry. As the role played by innovation has surged in recent times due to technological advancements, FinTech has enabled many start-ups to be included in the spectrum of India as well. Micro steel enterprises form an important part of Micro, Small and Medium Enterprises (MSME) sector in India. According to IBEF (2021), India's Iron and Steel industry ranked second worldwide in 2021 with a total production of 9.8 MT of crude steel. In 2022, an approximate increase of 18% was recorded in its production, mostly due to the rising demand of customers for the same. One of the most important aspects that have enabled India's high surge in steel production is the availability of raw materials domestically and the cost-effective labour force availability. This shows the present demanding situation of steel in the country and depicts the importance of the sector in the nation's development.

The importance of the FinTech sector in the present economy of a country is stated by every researcher in the field (Abbasi et al., 2021; Abidi, 2021). The contributions made by FinTech in the growth and development of the various sectors have motivated several marketers to use Fintech instruments in their field of operations as well. As per reports (Sanicola, 2017), in 2018, senior banking executives of 70% agreed that the collaborations made with FinTechs had created new opportunities for the banks. The investment value as of 2018 in the global Fintech companies stands at 112 billion US dollars. The adoption of Fintech services among customers is also quite high. With the increase in investment opportunities using FinTech, it becomes important to conduct a study focusing on the industries of a developing economy like India. In India, the number of start-ups has drastically increased in the past few years, and Fintech investments could be a life-altering option for the newly acquainted start-ups to source their funding. Moreover, the MSMEs operating in India have a large base of stakeholders. Implementing Fintech instruments to function in these MSMEs can bring about a revolution in the country.

The study, therefore, focuses on understanding the different implications of the Micro Steel industry operating in India and the support provided to them by the advent of the various measures of FinTech in the course.

## 2. LITERATURE REVIEW

### *2.1 FinTech Adoption Worldwide*

Le (2021) conducted a study based on the adoption of FinTech with respect to the COVID-19 situation going on globally. The study aims to find out the factors that act as a booster in making FinTech a loyal condition amongst users. The study realised the increased use of Fintech services post-lockdown period and used MTurk to collect primary responses, which are being analysed using structural equation modelling. The factors that cause a significant impact include trust, security and data privacy, followed by associated staff services. These factors are enhanced using the perceived usefulness of FinTech services and are seen to influence consumer loyalty in return. Acar and Çıtak (2019) conducted a study on the integration of FinTech services in the banks. The study uses the Kuvveyt Turk Participation bank located in Turkey to determine the details of the FinTech integration process in the bank. The process of integration is divided into seven phases. The first phase is related to collecting needs from the internal departments. The second phase uses the chance of finding the appropriate FinTech methods used by organisations around through scanning various database portals. Third phase is the presentation for the integration is made while explaining the business models prepared. In the fourth stage, these integration presentations are made in front of the Vice Presidents of the internal departments. The fifth phase encompasses the meeting with the IT and legal departments. The sixth phase is used for decision-making purposes by the senior management, and lastly, in the seventh phase, the FinTech integration process is made life for the customers to use. Belanche et al. (2019) study on the determination of the role of artificial intelligence in the FinTech industry. The study focuses on understanding the adoption of Robo-advisor in FinTech. Based on a web survey, the study collected 765 responses from respondents who are potential users of Robo-advisory services belonging to North American, Portuguese and British nationalities. The factors determining the adoption intention of these services in FinTech are affected by the customers' attitudes, subjective norms and mass media. The effect of perceived usefulness on the adoption intention and attitude is seen more in the case of respondents with a higher level of familiarity with the robots in action. Charles et al. (2019) discussed the rise in the start-up ecosystem of India and mentioned that several sites in the present times, including hotel room aggregators like OYO and FabHotels, the e-commerce site Paytm Mall, an eyewear retailer called Lenskart, Insurance Aggregator called Policy Bazaar, food technology aggregators such as Swiggy and Zomato have successfully taken a good share in the market place. Several start-ups are constantly working towards achieving unicorn status. However, scrutinising India's start-up system, three major problems are highlighted. Firstly, a transition

must be made from the copy-and-paste culture for models in India. Secondly, a move from the services model facilitated by IT towards technologically enhanced products is required. Following these two arise the problem of the entrepreneurs to start focusing on doing and focusing cutting-edge innovation facilities rather than opting for Jugaad systems (Sood, Seth, & Grima, 2022).

Previous researchers have pointed out the relevance of FinTech across different domains. In the next section, literature concerning the MSME sector specifically has been provided (Sood, Kaur, & Grima, 2022).

### 2.2 Application of FinTech in the MSMEs

Pizzi et al. (2021) conducted a study determining the sustainable business models associating FinTech with SMEs. The emergence of Industry 4.0 is considered in the study wherein the topic of sustainable development is enquired about. The study uses a case study analysis method to establish a link between circular economies and Fintech. The results show that the transition of the SME industry, to a large extent, can depend on Industry 4.0 practices and lead towards a more sustainable business regulation process. The main findings from the literature review and study premises are given below (Grima et al., 2021).

Harris (2021) study focuses on the various emerging scopes of the entrepreneurship aspect of FinTech and found quite interesting results. The study selected Singapore and London as its two selected locations. With primary data collection procedures, the study detected many significant implications for the financial sector's standard components. The study believes that for the evolutionary dynamics of entrepreneurs, there must be a significant consideration for various adaptive systems conceptualised in the system.

**Table 1.** Findings.

Key Stakeholders	Key Activities	Profit	Customer Relationships	Customer Segments
Credit institutions, consumers, organisations and firms investors suppliers	Optimising cashflows Reorganising and rebalancing production lines and processes	Improved experience and value added	Ensuring sustainability and ensuring societal and consumer needs are met	Communities, virtual or physical Enterprises, institutions
Value Creation		Value Proposition	Value Delivery	
	Key resources and capabilities Technological and physical resources	People and planet Environment and social needs Lending, recycling, reusing and sharing Leading to reduced costs	Mobile apps Digital platforms Websites Physical stores Digitalisation New and better revenue streams	B2B B2C C2C C2B

Source: Adopted by authors from Pizzi et al. (2021).

[Khazode et al. \(2021\)](#) have integrated the concept of Industry 4.0 concerning adopting sustainable production in the MSMEs. The effect of sustainability today is realised as it defines the inclusion of developments in social, economic and environmental situations. Although Industrial 4.0 consists of various FinTech modules incorporated globally, certain barriers prevail in its implementation. A total of eight barriers are identified in the study by including responses from MSME stakeholders from the states of Maharashtra, Chhattisgarh and Uttar Pradesh. The study includes a matrix theory method where a chart is created to establish the relationships. The barriers include difficulties in assessing credit, technology upgradation problems, social security aspects of employees, lack of knowledge, the difficulty in understanding the strategic implementation of Industry 4.0 and the factor of the human workforce. [Wonglimpiyarat \(2018\)](#) conducted a study to determine the challenges existing in the crowdfunding methods of FinTech while trying to estimate its potential in the novel ideas in the market. The study is based in Thailand, where a case study is conducted to determine the policies related to FinTech in a country considered an emerging nation in Asia. The study finds out the implication of the policies towards constructing a Thailand 4.0 version and finds out that there are barriers in policy making and operational levels in the innovation system in the Thai entrepreneurship scenario.

The literature surveyed showed the abundance of literature existing concerning FinTech. It has also been made evident from the review that India's Micro Steel sector has yet to find its importance among researchers. As the sector is one of the most demanding ones in the country and applying FinTech measures can cause further success, it becomes important to focus a study specifically on the micro steel sector (Mittal & Jhamb, 2016; Mittal et al., 2020).

### **3. OBJECTIVES OF THE RESEARCH**

The objectives laid down for the fulfilment of the study are as follows:

1. To study the awareness level of Punjab Micro Steel Enterprises on instruments of FinTech as financial support to their Businesses.
2. To analyse and study the factors considered important by Micro Steel Enterprises utilising instruments available in FinTech as one the solution for their Financial Needs.
3. To investigate and examine the extent of Financial Inclusion of FinTech instruments in Micro Steel Enterprises.

### **4. METHODOLOGY**

#### *4.1 Research Design*

The study takes a quantitative approach whereby the objectives mentioned above have been fulfilled with the help of first-hand empirical data gathered by the researcher through a self-administered mode.

#### *4.2 Sample*

The sampling process here is completed using a two-stage sampling method. The state of Punjab has been used for collecting data as it represents the entire country of India based on its MSME composition. In the first stage, based on the stratified proportionate random sampling, seven districts were chosen from a total of 23 districts located in Punjab. In the second stage, using convenience sampling, the micro steel enterprises located in these areas are approached for collecting final data.

#### *4.3 Instrument*

The research instrument used for this study is a structured questionnaire. The questionnaire has been constructed through a detailed review of the literature and scrutiny by experts in the field.

#### *4.4 Data Collection*

In Punjab, the districts are categorised into three main regions: Doabha, Majha and Malwa. From the seven districts chosen through random sampling, there are approximately 58,000 manufacturing units and 84,000 MSMEs and start-ups in the state. However, after segregating the micro steel enterprises from them, a total of 400 enterprises have been approached for collecting data.

#### *4.5 Variables for the Study*

The variables for the Study are used to determine the awareness level and perception about the two FinTech instruments used, namely P2P lending and Crowdfunding. To determine the same, the respondents are asked some basic questions on the business they are currently a part of. These are followed by questions associated with the suppliers of the Business. Five-point Likert-type scales are used to identify specific essential elements of the FinTech services. The statements are given in Appendix.

#### *4.6 Data Analysis*

The total 400 samples gathered are analysed using various statistical tools, including *t*-tests, ANOVA and multiple linear regressions.

The detailed analysis and its interpretations are provided in the next section.

## **5. RESULTS AND DISCUSSION**

### *5.1 Pilot Survey*

In order to ensure the relevance of the survey instrument constructed, a pilot survey has been conducted to determine the reliability of the measures. Cronbach's alpha value has been used as a statistical measure for reliability. According to [Hair et al. \(2006\)](#), a Cronbach's alpha value of more than 0.7 for the continuous

statements in a questionnaire is considered acceptable. The first pilot survey has been conducted using 50 respondents and the value generated for reliability stood at 0.496. This revealed that the statements included in the study need to be more adequate for conducting the further data collection process. In order to modify the value, the questionnaire has been modified by conducting further literature reviews and getting approvals from experts in the field. The second pilot survey has been conducted using 50 more respondents in the required domain, and Cronbach's alpha value was calculated. This time, the value is found to be 0.865; hence, the second set of questionnaires is selected for the main data collection purpose.

### 5.2 Final Survey

In the final survey, a total of 450 questionnaires were distributed for the final data collection. After discarding the incompetent and incomplete ones, 400 responses were used for the final data collection process. The 400 data sets collected have been entered and analysed using Statistical Packages for Social Sciences (SPSS).

The initial questions enquired the respondents about their age group, the type of business they hold and the source of the initial capital. Owners run most of these businesses in the age group of 20–30 years (50%). These are either run majorly by sole proprietorship (41.8%), in a limited private scope (21.7%) or through partnership (23.5%). However, the source of their initial capital for the enterprise is mostly from banks (50.75%), followed by families acting as their helping hands (35.75%). See Fig. 1.

When these respondents enquired about their reason for choosing the particular source of capital, it was found that the main reason was the only presence of the source in the area (35%). The second most popular reason is that

**Table 2.** Demographic Representation of the Samples Gathered.

Demographic Variable	Frequency	Percentage
Age group (years)		
Below 20	16	4.0
20–30	200	50.0
31–40	64	16.0
41–50	80	20.0
Above 50	40	10.0
Type of business		
Limited Liability Partnership	52	13.0
Partnership	94	23.5
Private Limited	87	21.7
Sole Proprietorship	167	41.8
Source of initial capital		
Bank	173	43.3
Family	107	26.7
Friends	40	10.0
Savings	60	15.0
Others	20	5.0

Source: Authors' compilation.

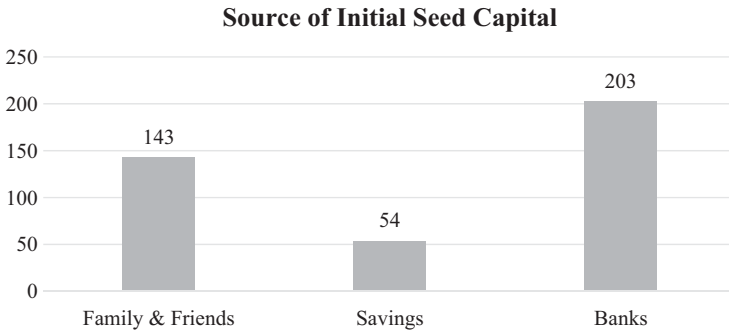


Fig. 1. Source of Initial Seed Capital. *Source:* Authors' compilation.

the method is already acting as the traditional source of finance for them in the day to day lives (28%).

However, a chi-square test was conducted among the source of initial capital and the reason for such choice, and the following results are found.

The pie chart (see Fig. 2) here shows that out of the four reasons provided to the respondents for selecting their reason to opt for the option for initial capital collection, it is seen that two of them have an almost similar number of responses. The one with the highest responses is because they thought the other credit suppliers considered for the purpose would reject their application (30%). The second most popular option was because that particular chosen option was the only way of availing credit in their location (27%). The third reason is that they thought the option provided the lowest interest rate.

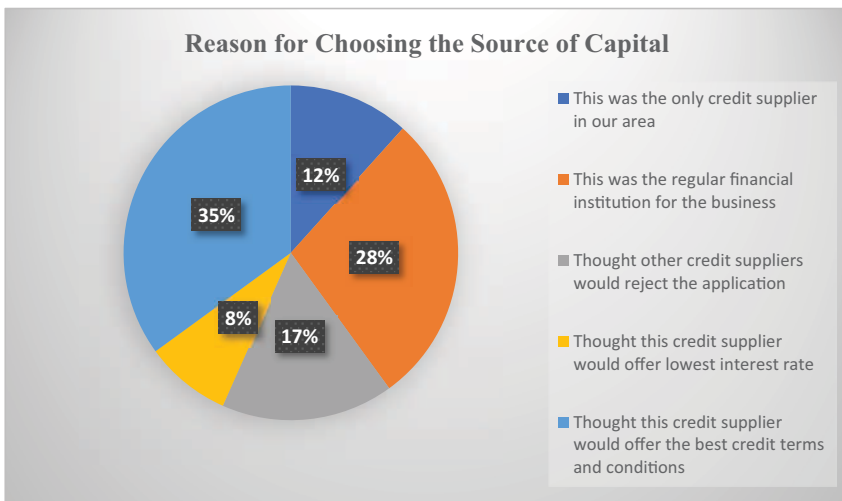


Fig. 2. Reasons for the Particular Choosing Lending Option for Their Business Among the Respondents. *Source:* Authors' compilation.