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# JOURNAL OF DEVELOPMENT RESEARCH

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- Business Management articles in the field of Marketing, HRM, OB, Operation, Business
- Research Methods, Business Analytics, and other broad areas.
- Developmental Economics and Social Sectors Development
- Business Environment, Business Ethics, and Corporate Governance
- Sustainable Development, Entrepreneurship, and Social Entrepreneurship

It aims at disseminating new knowledge in the field of different domain areas of management, development studies, and related disciplines. It provides a platform for discussions and exchange of knowledge among academicians, industry professionals, researchers, and practitioners who are associated with the management, financial institutions, public and private organizations, as well as voluntary organizations.

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The economic crisis triggered by the coronavirus pandemic in 2020 gave birth to the Atmanirbhar Bharat Abhiyan. Atmanirbhar means ‘self-reliant’. On 12 May, the Indian Prime Minister announced in his address to the nation an economic package of ₹20 trillion to tide over the coronavirus crisis under the Atmanirbhar Bharat Abhiyan. The economic package announced would play an important role in making India ‘self-reliant’ and it would benefit labourers, farmers, honest taxpayers, MSMEs and the cottage industry. Making the country self-reliant was the only way to make the 21st century belong to India. According to the government, this Abhiyan is not protectionist in nature and self-reliance does not advocate a self-centred protectionist system. According to Atmanirbhar Bharat Abhiyan, India’s self-reliance is based on five pillars:

1. Economy,
2. Infrastructure,
3. Technology-driven system,
4. Vibrant demography and
5. Demand.

Its objectives are to strengthen the local manufacturers and service providers to enhance a sense of self-reliance in the nation, improve the standard of living by focusing on the trade deficit and the exchequer balance, revive every sphere of the economy with a rise in fiscal stimulus, emphasise on self-reliance with a focus on land, labour, liquidity and laws, and issue economic packages equivalent to 10% of the Indian GDP and special incentives and funds for small businesses and farmers who faced losses from COVID-19.

This issue of the journal revolves around the concerns that are important for self-reliant India. Using technology to understand the research contribution of an institute, looking at financial inclusion through microfinancing, examining the financial results of the nation’s public and private sector banks in order to comprehend how well the bank makes financial decisions, assessing the present status of high-frequency trading (HFT) in stock markets in India and studying the willingness of consumers to adopt swadeshi and give up global brands for some chosen product and service categories are the research articles included in this issue.

The first article has examined the Google Scholar profile for Gandhigram Rural Institute. The Gandhigram Rural Institute’s faculty publications information were collected from Web of Science and Scopus as of 22 January 2021. After consolidating the data from Web of Science and Scopus, a Google Scholar profile was created. Department publications, Google Scholar citations, the top 15 highly cited articles, and the citations and h-index of the top 15 faculty members were all

analysed. It concluded that having an institution profile in the Google Scholar profile made it very difficult to update and strengthen all the data in the profile. A Google Scholar profile could be useful as an individual profile if the data are kept up-to-date and maintained.

Financial inclusion of the economically weaker sections of society in India has been the most challenging mission for the government. Microfinance is being given to the underprivileged for sustaining themselves and starting their own businesses. However, several operational and legal barriers have threatened the efficient operation of microfinance institutions and restrained their growth. The purpose of the next study has been to understand the macro and micro challenges involved and faced by various institutions in the delivery of microfinance services in rural India. For the study, secondary data and informal interviews were done. The effective execution of delivery methods for microfinance was investigated in the article along with techniques that addressed the problems. The findings showed the difficulties of people from rural areas, their inaccessibility to microfinance and the inability of microfinance institutions in controlling transaction costs. The article has also highlighted ways to provide as many rural residents as possible with the necessary credit money.

The foundation of every nation's economic structure is made up of financial institutions. They assist the economy to expand by giving their clients financial support and services. One of the key factors in the growth of the national economy has been the banks. The study has examined the financial results of India's public and private sector banks to comprehend how well the banks have made financial decisions and identify the various factors that affect the bank's financial stability. The research instrument used has been the Capital adequacy, Asset quality, Management capability, Earnings capacity and Liquidity (CAMEL) Model and *t*-test. The article concluded that public sector banks need to focus on strategic decisions for sustaining the competition with private sector banks. They require to be more professional like private players in the banking business.

HFT is one of the most significant recent developments in the financial markets. The article has aimed to assess the present status of HFT in stock markets in India and across the world and to identify subjective areas that can be used for carrying out research in HFT in relation to stock markets operating in India. The article has helped to bring out significant areas of research gap which can help to regulate HFT without much impact on the retail investors by reducing the leveraging effect of the prices. The study on whole has provided a clear synthesis of HFT and its impact on stock markets over the decade which has helped to identify significant areas of research related to Indian as well as world stock markets.

A lot of things have changed since the deadly coronavirus attack, and the world has changed upside down. There have been changes in the systems and operations of the business, and reforms in economic and financial policies all over the world and in India. In India, the local pitch in support of local businesses, 'go vocal for local', has been a step towards the Atmanirbhar economy. On one hand, there are consumers who are prepared to buy only domestic brands, while on the other hand, some are unwilling to give up global brands completely or selectively. The last article studied the willingness of consumers to adopt swadeshi and give up

global brands for some chosen product and service categories such as electronics, apparel, FMCG, restaurants and services apps. The study was primary in nature. EFA and regression analysis were employed to analyse the data. The results have suggested that nationalism and Anti-China sentiments have had a significant impact on consumer inclination towards swadeshi brands. The study has suggested that the Government, entrepreneurs and industrialists take suitable actions to use these sentiments to increase the acceptability of domestic brands and hence invoke Atmanirbhar Bharat (Self-reliant India).

In May 2020, the Government of India announced the ₹20 lakh crore Atmanirbhar Bharat economic package. This includes additional allocations for MGNREGS, frontloading already budgeted schemes such as PM-KISAN, liquidity-driven measures for MSMEs and farmers, and a push for reforms in agriculture and public sector enterprises. Using government reported data, the funds allocated (in rupees crore) is 1,370,527 in six sectors—agriculture and allied sectors (28.99%), energy (6.56%), finance (5.42%), MSMEs (27.59%), infrastructure (0.59%) and socio-economic welfare (30.77%). This pathway of self-reliance has changed in a globalised world, and it is different from being self-centred. India's fundamental thinking and tradition of 'Vasudhaiva Kutumbakam' provides a ray of hope to the world. This should be seen in the context of Human-Centric Globalisation versus Economy Centralised Globalisation.

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# Swadeshi Versus Global Brands: Mapping the Efficacy of the Self-reliance Invocation

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## Abstract

A lot of things have changed since the deadly Coronavirus attack, the world has changed upside down. There are changes in systems and operations of business, reforms in economic and financial policies all over the world and so in India. After the local pitch in support of local business by honourable Prime Minister of India, 'go vocal for local', as a step towards *atmanirbhar* economy, on one hand there are consumers who are prepared to buy only domestic brands while on the other hand some are unwilling to give up global brands completely or selectively. At this instance, it will be interesting to study the willingness of consumers to adopt *swadeshi* and give up global brands for some chosen product and service categories like electronics, apparels, FMCG, restaurants and services apps. This study was primary in nature. EFA and regression analysis were employed for analysing the data. The results suggested that nationalism and anti-China sentiments have a significant impact on consumer inclination for *swadeshi* Brands. Hence Government, Entrepreneurs and Industrialist must take suitable actions to use these sentiments for increasing the acceptability of domestic brands and hence invoke *Atmnirbhar* Bharat (Self Reliant India).

## Keywords

COVID-19, self-reliant economy, local brands, global brands, India, consumer inclination, products, services, services apps

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## Introduction

Swadeshi brands, also known as home-grown brands/local brands or national brands are the brands that are originated from within the boundaries of a nation. According to Schuiling and Kapferer (2004), a brand is known as a local Brand if it is accessible only in a country or within a particular geographical location. Whereas a global brand is a brand with global identification, accessibility, acceptance and popularity. Because of the consistent and centralised marketing activities, global brands by and large enjoy the same name and image across different nations (Özsomer et al., 2012). There is always a combat between local and global brands. India is a big country with huge population that presents immense business opportunities not only to Indian but also foreign companies. Due to globalisation, Indians have access to variety of both swadeshi (local) and *videshi* (foreign) brands. Some consumers prefer local brands and some prefer global brands while others prefer local/global brands in selected product categories. Hence it is imperative to find that how and why consumers prefer local or global brands.

BCG, US headquartered consultancy firm conducted a survey on 3,000 Indian consumers and found that more than half of the consumers prefer swadeshi brands over global brands especially in FMCG sector. The survey findings came in 2019 when nationalism was a popular political theme and multiple appeals were made over different media platforms to buy local over global. There are a lot of examples of very successful and popular Swadeshi brands that have been patronised by many generations of Indian consumers. TATA, Mahindra, Hero, Amul, Boroline, Asian paints, Mahindra & Mahindra, Roohaafza, Parle G, Fevicol, Patanjali, and so on, are the brands that were/are highly supported by consumers not just because they were home grown, but they were/are simply awesome.

Pre-COVID-19, India was dependent on imports from other countries for various products like solar power equipment, wind turbines, cell phones, laptops, electronics, testing kits, drugs, ventilators and other hospital equipment. For an instance, 70% of the ingredients of Pharmaceutical industry were imported from China. India imported product and services worth \$50 billion more than it exports only from China. Lack of required budget and innovations to develop the healthcare and education system over the years made Indian public health system awfully flimsy. But soon after the global pandemic hit India, quick reliable and cost effective inventions took place of much demanded products like COVID-19 test kits, ventilators and masks. Hence this crisis explored the prospects of capitalising on our swadeshi capability of producing innovative products. Hence Honourable Prime Minister Shri Narendra Modi pledged to make India a self-sufficient country and ignited the neo-Swadeshi movement in order to generate mass demand, develop better quality benchmarks, and build up scale.

While struggling through the tough times particularly during series of lockdown because of COVID-19, Our Prime Minister addressed and urged Indians to 'be vocal for local' in order to support and induce growth in the

drowning Indian economy. The purpose was to sustain local/Indian businesses and contribute towards Atmanirbhar Bharat. He also tweeted 'the way ahead lies in local. Local manufacturing, local markets, local supply chain. Local is not merely a need but a responsibility'. Different business executives are interpreting the PM's address differently. Executives of Global companies construed that the Indian government is endorsing make in India. Many global companies like Apple, IKEA have established production facilities in India and even procure lots of raw materials and components locally. The intention of the Prime Minister is to curb imports and not regulate multinational companies or foreign investment in India. Hence there will be diminutive impact on the sales of such brands.

Companies selling foreign brands in India mainly in categories like smartphones, electronics, apparel, FMCG are confident that Indian customers will continue to be loyal to them despite Mr Modi's appeal to buy local. Because these companies acquire majority of the Indian market share in respective product category and there is hardly much competition from the Indian/swadeshi brands; 90% of the total market of smartphone, refrigerators, washing machines, air conditioners and television industries are dominated by the global brands. Indian home grown brands lag much behind to the global brands owned by China, Japan and South Korea. Luxury segments are also conquered by the global brands.

On the other hand, executives from Swadeshi brands believe that post-COVID-19, consumers' sentiments in India will definitely amend in favour of home grown products that will make it difficult for global brands to penetrate. Indian consumers would like to build up Indian economy by buying and consuming more Indian brand over global ones. Anirban Sen from Godfrey Phillips India stated, 'A local brand, closer to the homeland is like to build greater trust and believability in consumers and as the nation comes out of COVID-19, there will new wave of "local-community-based" brands evolving stronger'. Globally there is a pessimistic emotion towards China and Chinese products. The pandemic has created global disruption that offers great opportunities to the home-grown entrepreneurs to fill the gap between local and global brands by providing world class home-grown innovations. Indian consumers will consciously seek sentiments like 'Be Indian, Purchase Indian' by buying Indian brands provided there are strong Swadeshi brands that offer the right quality products at right pricing and right time in each product/ service category.

Indian Companies are using patriotic advertising. Many swadeshi brands have started reigniting 'Swadeshi thinking' among the consumers by communicating campaigns like 'made in India', 'vocal for local' and 'Go local'. B. K. Rao from Parle Products commented, 'Many Indian marketers are going to ride the "being Indian" wave across mediums and give a strong reason to the consumer to buy their brands'. Shivani (2020) stated that effective supply chain management is critical to the success of home grown brands. These brands must strengthen their product segments looking into the consumer preference.

## Significance of the Study

Looking at the pace with which global business is growing, where countries are struggling for a competitive advantage and efficiencies of operations, self-reliance in economies is a must. Also the global political environment in the present time is pushing countries towards self-reliance. When Indian Prime Minister pitched local for vocal, the political terms between India and China were not healthy. At that time 2019 pandemic was also prevailing, and the Government in power tried to push the country to buy local brand of products as this would strengthen Indian economy.

## Literature Review

Researchers have always been very keen in exploring the rivalry between local and global brands. A lot of related research has already been done, but still there is a lot of scope in studying and working out what branding and marketing strategies work for local and global brands respectively and how they impact Indian consumer behaviour.

Batra et al. (2000) conducted a study in markets like Turkey, Vietnam, China and Nigeria and found that people in emerging markets preferred global brands to exhibit status and prestige. Likewise Kinra (2006) stated that Indian consumers favoured global brands to gain prestige and quality associations. Sharma (2011) and Guo (2013) showed consumers' global orientation that led to generation of preference for *videshi* brands over *swadeshi* brands. Whereas Bhardwaj et al. (2010) affirmed that Indian consumers chose different types of brands for different reasons and in different situations. In case of service industry like banking, Pinar et al. (2012) studied that in emerging markets such as Turkey; local banks are preferred by consumers over foreign banks.

While discussing about preference for *Swadeshi* brands, consumer ethnocentrism acts as one of the significant causes. As per Shimp and Sharma (1987), consumer ethnocentrism stands 'to represent the beliefs held by American consumers about the appropriateness, indeed morality, of purchasing foreign-made products'. The authors studied and found that ethnocentric consumers attempt to promote local economy by avoiding purchase of foreign products and promoting local brands. They think that buying imported products will increase unemployment, hurt the economy of the beloved country and hence always prefer domestic products due to the patriotic feelings (Bojei et al., 2010). Mostly, ethnocentric consumers are biased against global brands. But non-ethnocentric consumers evaluate global brands on the basis of merits.

Many factors have been identified that influence consumer buying behaviour towards foreign brands like age, income, education, exposure to international cultures, patriotism, conservatism, and so on. According to Balabanis et al. (2001), many researchers explored and proved that male consumers with higher literacy and higher earnings demonstrate low feeling of ethnocentrism. On the other hand, females, older people and less educated consumers show higher level of



traditionalism and patriotism. Tendency of Consumer ethnocentric can be understood to predict buying behaviour of consumers towards local and foreign brands across diverse countries and categories (Balabanis et al., 2001; Shimp & Sharma, 1987). Many studies suggested that consumer ethnocentrism is negatively correlated to imported products' purchase intention and positively associated to domestic products' purchase intention. (Nguyen et al., 2008; Supphellen & Gronhaug, 2003).

(O'zsomer, 2012) Global brands indicate extensive recognition, accessibility, finer quality and signify aspiration for success, superiority, and status while local brands indicates admiration for the cultures, traditions, and pride in the uniqueness of the swadeshi economy. Consumers may be inclined towards global brands as they value the benefits like status, prestige, quality offered by the brand that is sold across the world or the brand is locally owned however sold across the world. On the other hand, consumers may appreciate local brands that have local origin irrespective of global distribution or support brands that are available locally irrespective of the origin of brand. Warat Winit et al. (2014) yielded nomenclature of four brand categories to understand consumer perception: 'local-owned global, local-owned non-global, foreign-owned global, and foreign-owned non-global'. Swadeshi brands are generally considered as trustworthy and close to cultural heritage, fostering intimate consumer-brand relationships. Local owned brand may use the global presence to signify its quality in the communication strategy (Dimofte et al., 2008; O'zsomer, 2012).

According to (Kalwani & Yim, 1992; Kalyanaram & Little, 1994; Ofir, 2004), price of a brand must fall between price thresholds set by the consumers. Brands with very low prices are perceived as products with quality deficiencies while prices higher than the upper threshold represent poor value for money. Consumer choice can be influenced by setting price within the zone of price thresholds. Consumers usually weigh price quality relationship while preferring a brand (Erickson & Johansson, 1985). When there are two brands with similar quality perception but different prices, other factors being constant, buyers would prefer the economical one.

Global brands generally benefit from economies of scale stemming from competent production, innovation, logistics, effective packaging and efficient communications. Hence global brands can compete more effectively on price with perception of superior quality and prestige. They can also charge a price premium due to global scope (Schuiling & Kapferer, 2004). Conversely if a global brand is perceived to have same quality or better quality as of the local brand, then it opens the door for local brand to charge a price premium.

## **Objectives**

1. To explore factors affecting consumer inclination towards Swadeshi Brands.
2. To map the consumer inclination for Swadeshi brands towards self-reliant India.



## Hypothesis

**H<sub>1</sub>:** There is no significant impact of nationalism on consumer inclination towards Swadeshi Brands.

**H<sub>2</sub>:** There is no significant impact of anti-China sentiments on consumer inclination towards Swadeshi Brands.

**H<sub>3</sub>:** There is no significant impact of Ethnocentrism on consumer inclination towards Swadeshi Brands.

**H<sub>4</sub>:** There is no significant impact of Consumer attitude on consumer inclination towards Swadeshi Brands.

**H<sub>5</sub>:** There is no significant impact of Consumer affinity on consumer inclination towards Swadeshi Brands.

## Research Methodology

### *The Sample and Sampling*

The sample size consists of 120 absolute and usable responses. 9 responses were rejected since they were incomplete. The respondents were classified on the basis of demographic variables like age, gender, income and education. The frequency distribution of demographic profile is showcased in (Table 1). Convenience non probabilistic sampling was used as a technique to delineate the sample.

**Table 1.** Frequency Distribution of Demographic Profile.

Demographic Variables	Category	%
Gender	Male	48.8
	Female	51.2
Age	18–24 yrs	47.2
	25–34 yrs	21.8
	35–44 yrs	18.4
	45 yrs & above	12.6
Marital status	Married	45.7
	Unmarried	54.3
Income	Less than 2.5 lakh	9.4
	More than 2.5 lakh and less than 5 lakh	22.8
	More than 5 lakh, less than 10 lakh	23.6
	More than 10 lakh, less than 20 lakh	15.7
	20 lakh & above	

### *Tools of Data Collection*

Self-administered questionnaire was employed using ‘CETSCALE’ developed by Shimp and Sharma (1987). The scale act as an important instrument in understanding the tendency of consumers towards buying foreign or domestic brands to marketing managers (Khan & Rizvi, 2008; Netemeyer et al., 1991; Shimp & Sharma, 1987; Shimp, 2001). Questionnaire was constituted of two parts. Part A contained information regarding the demographics of respondents and Part B consist of 32 statements. 17 statements were taken from CETSCALE and remaining 15 statements has been designed after detailed study of secondary sources of information like journals, books, research papers, articles in newspapers, and so on. Five point Likert scale was used to gather the responses of respondents ranging from strongly agree to strongly disagree.

### *Tools of Data Analysis*

Cronbach’s alpha, KMO, Bartlett’s test of sphericity, Exploratory factor analysis and Regression Analysis were applied to achieve the results.

## **Data Interpretation and Analysis**

While asking respondents to give their preference for Swadeshi brands in different product/service categories, 56.7% of respondents preferred Swadeshi brands in FMCG sector, 48% in smart phones, 48.8% in electronics, 70.1% in restaurants, 50.4% in apparels, 44.9% in service apps, 63% in furniture, 52 in cosmetics, 58.3% in footwear & accessories and 50.4% in automobiles. This shows that Indian consumers are inclined towards swadeshi brands even in categories like smart phones and electronics where almost 90% of the market share is grabbed by *videshi* (foreign) brands.

## **Result and Discussion**

### *Reliability Test*

Cronbach’s alpha was applied to check the reliability of the questionnaire. The value of Cronbach’s alpha was found to be 0.900 (Table 1.1) which is excellent value that shows high internal consistency among the items of scale. Hence the reliability of the questionnaire was high.

**Table 1.1.** Reliability Statistics.

Cronbach's Alpha	Cronbach's Alpha Based on Standardised Items	N of Items
.900	.901	32

**Table 1.2.** KMO and Bartlett's Test.

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.791
Bartlett's test of sphericity	Approx. Chi-square	1,923.443
	Df	378
	Sig.	.000

### Exploratory Factor Analysis

Kaiser-Meyer-Olkin measure of sampling adequacy and Bartlett's test of sphericity was used to verify the adequacy of data set for conducting exploratory factor analysis. As shown in (Table 1.2), value of KMO is 0.791 and value of Bartlett's test of sphericity was found significant as 0.000. Hence it was verified that the available dataset is appropriate to conduct the exploratory factor analysis. While conducting factor analysis, value of total variance explained (Table 1.3) was 71.983 which is a good representation of variance among eight factors identified. Eigen value of all eight factors was greater than one. High communalities (Table 1.4) showed that the extracted components represent the variables properly.

Finally (Table 1.5) represents the factors identified through exploratory factor analysis that was run using the Principal component Approach along with varimax rotation. Total of eight factors were identified. But four items were removed during the process of extracting factors that were facing dual loading. Those items were 'Indians should not buy foreign products, because this hurts Indian business and causes unemployment', 'Foreigners should not be allowed to put their products on our markets', 'getting products from other countries can lead to bad results' and 'I purchase global brands because it is a matter of prestige'. The final factors explored are discussed as follows.

#### Factor 1. Ethnocentrism

The major factor explored in the study was ethnocentrism which affects consumer preference for domestic versus foreign brand. This factor involves items favouring *swadeshi* goods than foreign goods. Respondents believe that purchasing foreign products should not be encouraged as purchasing foreign-made products is un-Indian. Consumers believe that a real Indian should purchase *swadeshi* products. Moreover it can lead to awful results if we get products from other countries. Buy domestic brands is considered by many Indian consumers as a good culture keeping countries future in mind. Getting products from other countries may lead to a situation where a country may become import dependent which can be a risky situation for any country. Largely there exists an ethnocentric mindset that focuses on boycotting foreign brands as it may hurt growth of the Indian Economy.

#### Factor 2. Nationalism

'Nationalism is often perceived as an aberrant belief system and practice that goes against the dominant globalist and cosmopolitan ethos of the contemporary world'

**Table 1.3.** Total Variance Explained.

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative%	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	8.267	29.525	29.525	8.267	29.525	29.525	3.663	13.083	13.083
2	3.378	12.064	41.589	3.378	12.064	41.589	3.541	12.647	25.729
3	2.103	7.510	49.099	2.103	7.510	49.099	2.420	8.642	34.372
4	1.813	6.476	55.575	1.813	6.476	55.575	2.375	8.483	42.854
5	1.333	4.760	60.335	1.333	4.760	60.335	2.190	7.823	50.677
6	1.142	4.079	64.414	1.142	4.079	64.414	2.091	7.468	58.145
7	1.095	3.910	68.325	1.095	3.910	68.325	1.973	7.045	65.190
8	1.024	3.658	71.983	1.024	3.658	71.983	1.902	6.793	71.983
9	.915	3.266	75.249						
10	.824	2.944	78.193						
11	.685	2.447	80.640						
12	.667	2.383	83.023						
13	.582	2.079	85.102						
14	.544	1.943	87.046						
15	.468	1.670	88.716						
16	.456	1.629	90.345						
17	.407	1.454	91.799						
18	.379	1.352	93.152						
19	.308	1.101	94.253						
20	.279	.997	95.250						
21	.249	.888	96.139						
22	.234	.837	96.975						
23	.200	.714	97.689						
24	.166	.594	98.283						
25	.147	.525	98.808						
26	.136	.485	99.292						
27	.109	.388	99.680						
28	.090	.320	100.000						

**Note:** Extraction Method: Principal Component Analysis.

**Table 1.4.** Communalities.

	Initial	Extraction
Prefer swadeshi	1.000	.518
Must buy Indian	1.000	.724
Import if unavailable	1.000	.740
Keep India working	1.000	.634
Indian product first	1.000	.675
Buying foreign Indian	1.000	.665
Buying global not right	1.000	.779
Real Indian buys Indian	1.000	.839
Do not make others richer	1.000	.725
Purchase global if necessary	1.000	.683
Unemployment	1.000	.732
Curbs on imports	1.000	.717
Tax global heavily	1.000	.781
Buy foreign what not available	1.000	.644
Fellow Indians out of work	1.000	.632
Risky global products	1.000	.653
Never buy Chinese brands	1.000	.698
Buy global except Chinese	1.000	.759
Indian with unknown outcome	1.000	.632
Bad results	1.000	.708
Next time swadeshi	1.000	.763
Try swadeshi	1.000	.751
Global due to innovation	1.000	.849
Global due to design	1.000	.790
Price is important	1.000	.669
Quality	1.000	.800
Accessibility	1.000	.805
Never buy from China	1.000	.790

**Note:** Extraction Method: Principal Component Analysis.

(Malesevic, 2020). A nationalist by nature thinks and acts in favour of his country. As far as choice of brands is concerned, nationalism can play a big role by diverting it to domestic brand. Such consumers strongly pitch for local brands against foreign brands. Indian history has had a wave of nationalism at the onset of 19th century which resulted in a movement where masses boycotted foreign goods (Paul, 2015). Those who possess patriotism in their mind keep country above anything and everything and the matter of choosing a brand dwindles for

**Table 1.5.** Factor Names, Items and Load.

Factor Names	Items	Factor Load	Item Load	Eigen Value
<b>Factor 1</b>				
Ethnocentrism	It is not right to purchase foreign products		.806	
	Purchasing foreign-made products is un-Indian		.741	
	A real Indian should buy Indian-made products		.674	
	Getting products from other countries can lead to bad results	4.001	.636	
	Getting products from other country is risky		.618	
	Indians should not buy foreign products, because this hurts Indian business and causes unemployment		.526	
<b>Factor 2</b>				
Nationalism	Buy Indian-made products. Keep India working	3.355	.744	
	We should purchase products manufactured in India instead of letting other countries get rich off us		.739	
	Indian products, first, last, and foremost		.677	
	Indians must buy only made-in-India goods than importing		.650	
	Indian consumers who purchase products made in other countries are responsible for putting their fellow Indian out of work		.545	
<b>Factor 3</b>				
Anti-China Sentiments	I will purchase any global brand except Chinese	3.028	.689	
	I will never buy a product imported from China		.673	
	I will not buy a Chinese brand though manufactured in India		.573	
	Buying products from India can have uncertain outcomes		.560	
	It may cost me in the long-run but I prefer to support Indian products		.533	

*(Table 1.5 continued)*

(Table 1.5 continued)

Factor Names	Items	Factor Load	Item Load	Eigen Value
<b>Factor 4</b>				
Consumer affinity	I purchase global brands due to innovativeness	1.774	.905	
	I purchase global brands due to their design and workmanship		.869	
<b>Factor 5</b>				
Uncompromising attitude	Product accessibility is more important to me rather than origin of brand	2.254	.877	
	Quality is more important to me rather than the origin of the brand		.776	
	Price is more important to me rather than the origin of the brand		.601	
<b>Factor 6</b>				
Restrict imports	There should be very little trading or purchasing of goods from other countries unless out of necessity	2.036	.756	
	Only those products that are unavailable in India should be imported		.692	
	We should buy from foreign countries only those products that we cannot obtain within our own country		.588	
<b>Factor 7</b>				
Government intervention	Foreign products should be taxed heavily to reduce their entry into the India	1.496	.757	
	Curbs should be put on all imports		.739	
<b>Factor 8</b>				
Consumer Inclination	I will definitely try Swadeshi brands	1.534	.828	
	I will purchase Swadeshi brands the next time I need them		.706	

them. Such people have ‘buy Indian-made products, keep India working’ in their mind. They propagate that Indians must purchase domestically manufactured products and not let other nations get rich off us. They oppose importing and for them local products are first, last, and foremost. Consumers driven by nationalism believe ‘the countrymen who buy products made in other countries are responsible for putting their fellow Indian out of work’. This factor currently is showing an upsurge in the country and affecting consumer inclination for domestic brands

especially after the *Swadeshi* and *Atmanirbhar* invocation by the current prime minister of India. *Swadeshi* refers to domestic goods and *Atmanirbhar* refers to a self-reliant economy.

### *Factor 3. Anti-China Sentiments*

India's relation with China has been conflicting in history (Gundre, 2016) and is getting heated up again currently. At present there is a wave of anti-Chinese sentiments in the country after the 'vocal for local' pitch by the prime minister post-COVID-19 attack furthermore the sentiments are anti-Chinese. With the tensions burning up on border currently, these sentiments are flowing in a torrent. A large number of people are showing their anger by deleting all mobile apps originating in China. This factor mainly speaks about Indian consumers willing to buy any foreign brand except Chinese though manufactured in India. Whatever be the cost in the long run, however uncertain be the outcomes of boycotting imports but consumers would prefer to buy domestic products only especially against China.

### *Factor 4. Consumer Affinity*

The factor 'consumer affinity' means that innovativeness, design and workmanship are majorly affecting consumers' choice for foreign brands. Those consumers who prefer foreign goods over domestic goods are those who look for innovative features in them. Such consumers are mostly driven by the attractive designs and level of workmanship. Indian manufacturers must note this and try to match up to customer expectation in this regard before offering their products in market.

### *Factor 5. Uncompromising Attitudes*

Consumers preferences for domestic or foreign brands is also affected by 'uncompromising attitudes' where country of origin does not hold much importance, what matters is, product accessibility, product quality and the price of the product. Indian manufacturers should strive for best of efficiency in terms of price and quality to cater to such consumers. If such consumers find a good bargain in local market they would go with Indian brand.

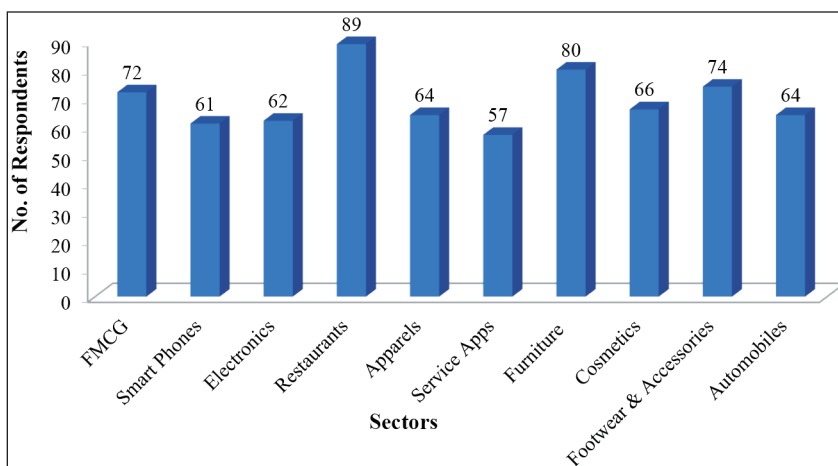
### *Factor 6. Restrict Imports*

This factor is about the circumstances in which consumers feel that one should buy foreign brand. It means that one must not import from other countries unless it is either necessary to import or the product is unavailable in the country. Respondents believe 'one should import from other countries only those products that we cannot obtain within our own country'. Such consumers usually buy domestic goods and import only when it is unavoidable.

### *Factor 7. Government Intervention*

Consumer choice between domestic and foreign brand can be understood by this factor, 'government intervention' which is about restrictions on imports. Respondents want foreign products to be taxed heavily to reduce their entry into the India, also curbs should be put on all imports.





**Figure 1.** Sector-wise Preferences for Swadeshi Brands.

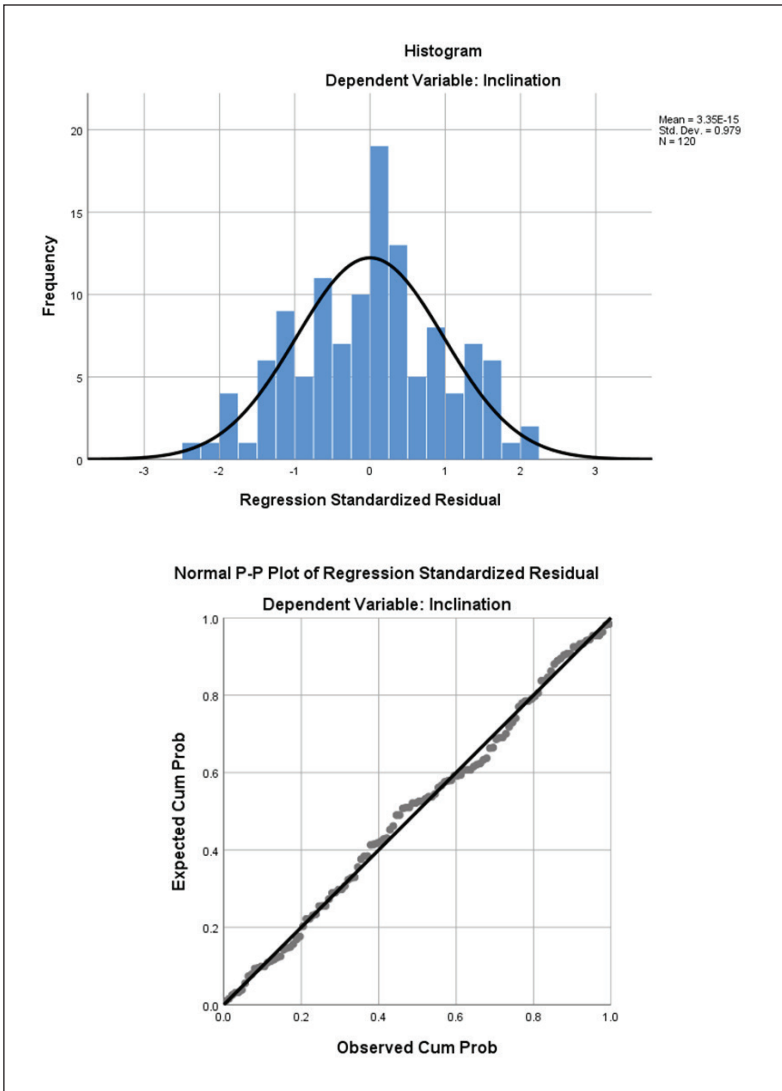
#### Factor 8. Consumer Inclination

Consumer inclination for swadeshi or domestic brands can be understood by the statements in this factor. Indian consumers have a strong inclination to try out local brands and have the urge to buy local goods in future. These are usually consumers who feel associated to local brands, have the sense of belongingness for their country brand. Consumers also take pride in owning a brand of their country, getting associated with a product that belongs to their own country. Such thoughts of them focus their choice on brands that are local or *Swadeshi*.

#### Regression Analysis

Regression analysis allows the researcher to predict the impact of independent variables on dependent variable. Normality test was applied on the data. Figure 2 showed that the data was normally distributed as it was spread along the direction of diagonal line (Fuad et al., 2019). As per Table 2.1, the value of Durbin-Watson is 1.583 which is less than 2 which states that the regression model of the study was affirmed to have no autocorrelation problem.

A multiple regression was run to envisage the impact of five independent variables namely ethnocentrism, nationalism, attitude, anti-China sentiments and consumer affinity on consumer inclination (dependent variable). The F-ratio in the ANOVA table (Table 2.2) examined the regression model as a good fit. The table showed that statistically the independent variables significantly predict the dependent variable (consumer inclination). Model summary (Table 2.1) and ANOVA table depicted:  $F(5, 114) = 10.060, p < .0005, R^2 = 0.306$  and the value of Durbin-Watson = 1.583. Hence it is proved that the regression model is a good fit of the data.



**Figure 2.** Result of Normality Test.

Coefficients table (Table 2.3) showed that Nationalism and Anti-China sentiments were the two predictors that were found significant. Consequently two hypotheses were rejected at 5% level of significance stating that there is a significant impact of Nationalism and Anti-China sentiments on the consumer inclination for swadeshi brands. However three independent variables (ethnocentrism, consumer affinity and attitude) were not found significant. Hence three hypotheses were accepted stating that there is no significant impact

**Table 2.** Reliability Test Results (28 Items).

Factors	Cronbach's Alpha
Ethnocentrism	0.742
Nationalism	0.840
Anti-China	0.763
Consumer affinity	0.862
Attitude	0.679

**Table 2.1.** Model Summary<sup>b</sup>.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.553 <sup>a</sup>	.306	.276	.47710	1.583

**Note:** a. Predictors: (Constant), attitude, Anti-China, consumer affinity, ethnocentrism, Nationalism.

b. Dependent variable: Inclination.

**Table 2.2.** ANOVA<sup>a</sup>.

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	11.450	5	2.290	10.060	.000 <sup>b</sup>
	Residual	25.949	114	.228		
	Total	37.399	119			

**Notes:** a. Dependent Variable: Inclination.

b. Predictors: (Constant), attitude, Anti-China, consumer affinity, ethnocentrism, Nationalism.

**Table 2.3.** Coefficients<sup>a</sup>.

Model		Unstandardised Coefficients		Standardised Coefficients		95.0% Confidence Interval for B		
		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound
1	(Constant)	2.286	.360		6.347	.000	1.573	3.000
	Ethnocentrism	-.051	.081	-.069	-.625	.533	-.212	.110
	Nationalism	.294	.092	.368	3.192	.002	.112	.477
	Anti-China	.239	.082	.307	2.917	.004	.077	.401
	Consumer affinity	-.025	.057	-.040	-.450	.654	-.138	.087
	Attitude	.007	.061	.009	.111	.912	-.114	.128

**Note:** a. Dependent Variable: Inclination.

of ethnocentrism, consumer affinity and uncompromising attitude on the consumer inclination towards swadeshi brands. The regression equation is as follows:

$$Y = 2.286 + 0.294 \text{ nationalism} + 0.239 \text{ anti-China sentiments}$$

For many years, India is struggling to overcome its growing deficits. The Indian Prime Minister is invoking the course of Swadeshi by encouraging nationalistic sentiments for endorsing domestic know-hows and commencement of 'Made in India' products and brands amalgamated with an urge to prefer 'Swadeshi'. Strong sense of economic patriotism or nationalism can actually influence the consumer inclination for Swadeshi brands towards building of self-reliant India. Nationalism inspires consumers to have a strong association with the local environment, cultural sensitivity and authenticity and take pride in consuming brands that support the local economy (Dimofte et al., 2008; O'zsomer, 2012; Schuiling & Kapferer, 2004).

Due to COVID-19 pandemic and border disputes, anti-China sentiments are becoming quite prevalent in Indian consumers. People want to boycott Chinese products and buy swadeshi products to support Indians and Indian economy. But as discussed earlier, Indian consumers do not have good swadeshi options in certain categories like Smart phones, other electronics, software, certain chemicals, and so on, due to which they end up buying *videshi* (foreign) brands. Suneja and Sikarwar (2020) reported that the government is working hard on substituting Indian dependence on imports from China, by focusing assertively on safety standards and quality produce to gain worldwide market share.

Hence businessmen and entrepreneurs in India must focus on serving customers with good quality rather than quantity, world class innovations, price standardisation through economies of scale in real time to encash positive consumer inclination towards swadeshi brands which will make India Atmnirbhar.

## Conclusion and Implication

Since COVID-19 intimidates to disrupt the Indian economy, there is a strong call to go local, buy swadeshi brands and make India self-reliant. Aatmnirbhar Bharat entails Swadeshi entrepreneurs to mobilise all its resources (physical, natural, and human, intellectual, technological and financial), take benefit of India's equity in diversity and stand confident in front of the world without any fear. To convert the sentiment 'buy local' into reality, all Indians must engender mass confidence, high demand and sky-scraping scale of local brands. 'It is not about being defensive and building protective walls, but embracing the world with pride and confidence' Ghose (2020). Foreign investment and international companies are welcome as long as they generate economic activity, create employment and build state-of-the-art industrial capacity. Indian entrepreneurs must experiment with interdependency and Indian old culture of supporting community businesses. Also Swadeshi brands must focus on consumer preference and strengthen the product portfolio accordingly. Packaging, promotion and maintaining a strong supply chain need to be shored up on an urgent basis.

## Future Scope of Research

The same study can be done on a bigger sample and wider geographical area to get better insights about different constructs that can influence consumer inclination in favour of Swadeshi brands. Specific product category can also be studied in detail that can actually help a particular local industry design strategies to enhance acceptance of Swadeshi products and services. Since India is a diverse country with many states and union territories. Conducting same study on consumers of different states can also bring some interesting results that may be very fruitful to government, local entrepreneurs as well as national entrepreneurs.

## Declaration of Conflicting Interests

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## References

- Balabanis, G., Diamantopoulos, A., Mueller, R. D., & Melewar, T. C. (2001). The impact of nationalism, patriotism and internationalism on consumer ethnocentric tendencies. *Journal of International Business Studies*, 32(1), 157–175. <https://doi.org/10.1057/palgrave.jibs.8490943>
- Batra, R., Ramaswamy, V., Alden, D. L., Steenkamp, J. B. E. M., & Ramachander, S. (2000). Effects of brand local and nonlocal origin on consumer attitudes in developing countries. *Journal of Consumer Psychology*, 9(2), 83–95. [https://doi.org/10.1207/S15327663JCP0902\\_3](https://doi.org/10.1207/S15327663JCP0902_3)
- Bhardwaj, V., Kumar, A., & Kim, Y. K. (2010). Brand analyses of US global and local brands in India: The case of Levi's. *Journal of Global Marketing*, 23(1), 80–94. <https://doi.org/10.1080/08911760903442226>
- Bojei, J., Normah, S., Tuah, A., Alwie, A., & Ahmad, M. (2010). Local vs foreign made: Are Malaysians ethnocentric? *The IUP Journal of Marketing Management*, 9(3), 6–23.
- Cazacu, S. (2016). Preference for domestic goods: A study of consumer ethnocentrism in the Republic of Moldova. *EcoForum*, 5(1).
- Chaudhuri, R. A. (2020, May 14). Made in India: 13 Indian brands that are truly timeless. *Condé Nast Traveller*. <https://www.cntraveller.in/story/made-in-india-products-list-13-indian-brands-timeless-pm-modi-vocal-local-amul-fevicol/>
- Dimofte, C. V., Johansson, J. K., & Ronkainen, I. A. (2008). Cognitive and affective reactions of US consumers to global brands. *Journal of International Marketing*, 16(4), 113–135. <https://doi.org/10.1509/jimk.16.4.113>
- Erickson, G. M., & Johansson, J. K. (1985). The role of price in multi-attribute product evaluations. *Journal of Consumer Research*, 12(2), 195–199.
- Fuad, M., Hanafiah, H., & Wibowo, G. A. (2019). The role of product attributes in forming consumers perception of local packed drinking water brand in Langsa city. *Journal of Physics: Conference Series*. <https://doi.org/10.1088/1742-6596/1375/1/012059>

- Ghose, S. (2020). Why aatmanirbhar Bharat is not about Swadeshi vs Videshi. *DailyO*. <https://www.dailyo.in/politics/atmanirbhar-bharat-swadeshi-videshi/story/1/32902.html>
- Gundre, J. R. (2016). *India and China relations: Historical, cultural and security issues*. UGC Centre for Southeast Asian & Pacific Studies.
- Guo, X. (2013). Living in a global world: Influence of consumer global orientation on attitudes toward global brands from developed versus emerging countries. *Journal of International Marketing*, 21(1), 1–22. <https://doi.org/10.1509/jim.12.0065>
- Kalwani, M. U., & Yim, C. K. (1992). Consumer price and promotion expectations: An experimental study. *Journal of Marketing Research*, 29(1), 90–100. <https://doi.org/10.1177/002224379202900108>
- Kalyanaram, G., & Little, J. D. C. (1994). An empirical analysis of latitude of price acceptance in consumer package goods. *Journal of Consumer Research*, 21(3), 408–418. <https://doi.org/10.1086/209407>
- Khan, M. N., & Rizvi, S. R. (2008). Consumer ethnocentrism: Relevance and implications for marketers. *ICFAI Journal of Consumer Behavior*, 3(1), 52–65.
- Kinra, N. (2006). The effect of country-of-origin on foreign brand names in the Indian market. *Marketing Intelligence and Planning*, 24(1), 15–31.
- Knowles, J., Ettenson, R., Lynch, P., & Dollens, J. (2020). Growth opportunities for brands during the COVID-19 crisis. *MIT Slogan Management Review*. <https://sloanreview.mit.edu/article/growth-opportunities-for-brands-during-the-covid-19-crisis/>
- Malesevic, S. (2020). Grounded nationalism and cultural diversity. In T. Meireis, F. Hohne & B. Schoen (Eds.), *Religion and neo-nationalism in Europe*. Nomos. [https://www.academia.edu/43405616/Grounded\\_Nationalism\\_and\\_Cultural\\_Diversity](https://www.academia.edu/43405616/Grounded_Nationalism_and_Cultural_Diversity).
- Mishra, S. (2020). Being Indian: How Swadeshi brands are set to rise in the post-COVID world. *Best Media Info*. <https://bestmediainfo.com/2020/05/being-indian-how-swadeshi-brands-are-set-to-rise-in-the-post-covid-world/>
- Mukherjee, W., Bailay, R., & Malviya, S. (2020). Global brands confident of Indian consumers' loyalty despite PM Modi's local pitch. *The Economic Times*. [https://economictimes.indiatimes.com/industry/cons-products/fmcg/global-brands-say-wont-lose-buzz-on-local-pitch/articleshow/75726929.cms?utm\\_source=contentofinterest&utm\\_medium=text&utm\\_campaign=cppst](https://economictimes.indiatimes.com/industry/cons-products/fmcg/global-brands-say-wont-lose-buzz-on-local-pitch/articleshow/75726929.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst)
- Netemeyer, R. G., Durvasula, S., & Lichtenstein, D. R. (1991). A cross-national assessment of the reliability and validity of the CETSCALE. *Journal of Marketing Research*, 28(3), 320–327. <https://doi.org/10.1177/002224379102800306>
- Nguyen, T. D., Nguyen, T. T. M., & Barrett, N. J. (2008). Consumer ethnocentrism, cultural sensitivity, and intention to purchase local products—evidence from Vietnam. *Journal of Consumer Behaviour*, 7(1), 88–100.
- Ofir, C. (2004). Reexamining latitude of price acceptability and price thresholds: Predicting basic consumer reaction to price. *Journal of Consumer Research*, 30(4), 612–621.
- Özsomer, A. (2012). The interplay between global and local brands: A closer look at perceived brand globalness and local iconness. *Journal of International Marketing*, 20(2), 72–95. <https://doi.org/10.1509/jim.11.0105>
- Paul, D. (2015). 'Through the looking glass': An analysis of the Swadeshi movement through the 'indigenous' 'Thakurmar Jhuli'. *Indian Literature*, 59(6 290), 153–167. <https://www.jstor.org/stable/44478647>
- Pinar, M., Girard, T., & Eser, Z. (2012). Consumer-based brand equity in banking industry: A comparison of local and global banks in Turkey. *International Journal of Bank Marketing*, 30(5), 359–375. <https://doi.org/10.1108/02652321211247417>

- Prakash, B. (2019). MNCs control Indian economy today, swadeshi has no takers. *DNA*. <https://www.dnaindia.com/india/column-mncs-control-indian-economy-today-swadeshi-has-no-takers-2793861>
- Saikia, S. (2020). Standpoint: Are we really geared for another Swadeshi Movement? *Adgully*. <https://www.adgully.com/standpoint-are-we-really-geared-for-another-swadeshi-movement-93000.html>
- Schuiling, I., & Kapferer, J. N. (2004). Real differences between local and international brands: Strategic implications for international marketers. *Journal of International Marketing*, 12(4), 97–112.
- Sharma, P. (2011). Country of origin effects in developed and emerging markets: Exploring the contrasting roles of materialism and value consciousness. *Journal of International Business Studies*, 42(2), 285–306.
- Shimp, T., & Sharma, S. (1987). Consumer ethnocentrism: Construction and validation of the CETSCALE. *Journal of Marketing Research*, 24(3), 280–289.
- Shimp, T. A. (1984). Consumer ethnocentrism: The concept and a preliminary empirical test. *Advances in Consumer Research*, 11, 285–290.
- Supphellen, M., & Grønhaug, K. (2003). Building foreign brand personalities in Russia: The moderating effect of consumer ethnocentrism. *International Journal of Advertising*, 22, 203–226.
- Suneja, K., & Sikarwar, D. (2020). Modi's mission self-reliance: Make in India, lower import dependence. *The Economic Times*. [https://economictimes.indiatimes.com/news/economy/policy/modis-mission-self-reliance-make-in-india-lower-import-dependence/articleshow/75704246.cms?utm\\_source=contentofinterest&utm\\_medium=text&utm\\_campaign=cppst](https://economictimes.indiatimes.com/news/economy/policy/modis-mission-self-reliance-make-in-india-lower-import-dependence/articleshow/75704246.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst)
- The Economic Times*. (2019). Swadeshi: 50% consumers prefer desi brands over foreign ones. <https://brandequity.economictimes.indiatimes.com/news/business-of-brands/swadeshi-50-consumers-prefer-desi-brands-over-foreign-ones/71610559>
- The Pioneer*. (2020, May 15). Swadeshi vs make in India. <https://www.dailypioneer.com/2020/columnists/swadeshi-vs-make-in-india.html>
- Winit, W., Gregory, G., Cleveland, M., & Verlegh, P. (2014). Global vs local brands: How home country bias and price differences impact brand evaluations. *International Marketing Review*, 31(2), 102–128. <https://doi.org/10.1108/IMR-01-2012-0001>

# Strategies to Tackle Microfinance Delivery Challenges

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## Abstract

Financial inclusion was the most challenging mission as far as the economically weaker sections of society in India. Microfinance was given to the underprivileged for sustaining themselves and starting their own businesses. However, a number of operational and legal barriers that threatened the efficient operation of microfinance institutions (MFIs) restrained its growth. The purpose of this study was to understand the macro and micro challenges involved in the delivery of microfinance services in rural India. For the study of macro and micro issues faced by various institutions in providing microfinance, secondary data collection and informal interviews were done. The effective execution of delivery methods for microfinance was investigated in this article along with techniques that addressed the problems mentioned. In other words, the delivery challenges explained the macro and micro issues that different organisations encountered when delivering microfinance. Strategies were discussed making it workable and adoptable by various institutions participating in microfinance to counter or tackle the macro and micro delivery challenges faced. The findings showed the difficulties of people from rural areas, their inaccessibility to microfinance and the inability of MFIs in controlling transaction costs. The article has highlighted ways to provide as many rural residents as possible with the necessary credit money.

## Keywords

Challenges, delivery, microfinance, politics, strategies, structure

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## Introduction

Microfinance is described as any activity that includes giving low-income people who earn just enough to qualify for public assistance and impoverished people who are below the poverty line financial services including credit, savings and insurance intending to generate social value. The reduction of poverty and the wider effects of bettering livelihood chances through the provision of capital for micro-business, insurance and savings for risk mitigation and balanced consumption are all included in the development of social value. In this light, this article works on the macro and micro challenges involved in the delivery of microfinance services in rural India and at the same time suggests workable strategies to counter these challenges of delivery.

In the modern financial world, microfinance has become a discipline of great importance. It has grown in significance as a key area of concern for the Indian government and other governments worldwide. As it concentrates on assisting the poorest of the poor, who were beyond the periphery of funding of any type, microfinance has altered the concept of lending. One of the major challenges for banks was to establish a network of agents that can provide reliable services to lower-income people (Sharma, 2011). The idea of micro-credit came from Asia, which faced dire poverty spread over rural areas of India and Bangladesh. A wide range of players in India who employ various microfinance delivery techniques offer microfinance. Since Bangladesh's *Grameen* Bank was established, several actors have worked to find innovative ways to give the poor access to financial services. Governments have experimented with national schemes, non-governmental organisations (NGOs) have raised donor money for on-lending services, and a few banks have teamed up with NGOs or made modest inroads towards offering such services themselves. With maturing microfinance, NGOs were evolving rapidly and were testing with several forms of contributor-sponsored capital share ownership to become an acceptable substitute for privately owned organisations (Mishra & Chandra, 2010). The largest emerging market for microcredit is considered to be India. Over the past few decades, it has expanded steadily. Microfinance is the most efficient way to achieve financial inclusion, according to the Government of India, and this thriving sector displayed a variety of business models. In India, which has a population of over 1 billion, almost 400 million people live below the poverty line. This meant that 75 million households would require microfinance; of whom more than 60 million were in rural India and the other 15 million lived in urban slums. It is important to note that the same households' expected current annual credit utilisation is ₹495,000 million.

Overall, there were troubles and difficulties with the microfinance institution (MFI) of India channel. They were struggling with continuity issues, so they looked for different ways to recreate themselves. After suffering a huge shock during the Andhra Pradesh (a State in India) crisis, the MFI channel is working feverishly to rebuild and get back on the path to legitimacy. Even the massive financial inclusion drive launched by the Indian government had no positive impact on the MFI channel. The inclusion process presented numerous difficulties in terms of bringing a sizable number of inaccessible families into the conduits for

formal finance. But the policymakers were not interested. Coming to the formal banking sector, which had impressive coverage, it had an impact that was limited as far as lending to poor households was concerned. Throughout its existence, India's official rural banking sector had difficulty striking a balance between the twin goals of outreach and financial performance. As a result, a new type of financial intermediary was required, one that would be affordable for banks and convenient for the unreachable poor. They would be able to relate to banks better in this fashion, and the banks would view doing business with the poor as a healthier commercial prospect. However, the difficulty lay in finding a sustainable and cheap way to connect a sizable number of economically disadvantaged households to the official banking sector (Reddy & Noorbasha, 2013).

As far as the concept is concerned, the Reserve Bank of India (RBI) believes that microfinance is an essential tool for achieving financial inclusion. What exactly is financial inclusion, then? According to the RBI, it is the 'offering of cheap financial services' to the underprivileged that have been shunned or ignored by Indian financial institutions. According to the RBI, financial services include 'payments and remittance facilities, savings, loans and insurance services'. Microfinance is 'the provision of a broad variety of services such as savings, deposits, loans, payment services, money transfers and insurance to poor and low-income households and their micro-enterprises', according to the Asian Development Bank (2000). Low-income households and individuals living below the poverty line (BPL) are both included in this definition from ADB (2000). Microfinance is defined by the Micro Financial Sector (Development and Regulation) Bill, 2007, as the provision of financial assistance and insurance services to an individual or an eligible client either directly or through a group mechanism for an amount, not exceeding ₹50,000 in aggregate per individual for small and tiny enterprise, agriculture and allied activities (including for such individual's consumption purposes). Migrant and/or landless labourers, craftsmen, micro-entrepreneurs, underprivileged cultivators and farmers with up to 2 ha of land were all eligible for the credit. The National Microfinance Taskforce (1999) has defined microfinance as the 'provision of thrift, credit and other financial services and products of very small amounts to the poor in rural, semi-urban or urban areas for enabling them to raise their income levels and improve living standards'. As a result, microfinance has come to be defined very broadly as any business that provides financial services to those who are poor or have low incomes.

## **Review of Literature**

MFI of India are using a range of legal structures and procedures. MFIs have been authorised as NGOs in India. Refinancing MFIs involves commercial banks, regional rural banks, cooperative societies, non-banking financial companies (NBFCs) and others. In contrast, banks have used the self-help groups (SHGs) as a lever by giving such borrowers direct credit.

According to Kothari and Gupta's (2008) research, MFIs were structured using three different models: SHGs, the *Grameen* model/joint liability groups and individual banking groups similar to cooperatives. Group lending is the practice of giving loans to a group, which then lends to its members. When one of its sub-borrowers missed a payment, the group assumed responsibility for repayment. Individual borrowers received credit through group-guaranteed lending because each would be responsible for the other's repayment. If one member defaults, the remaining members will no longer be able to borrow money. There could be collateral security or not in this kind of lending. There would not even be a group guarantee. Take note that the SHGs were also known as 'group lending'. Fifteen to 20 women from comparable socioeconomic backgrounds would make up each group. They interacted frequently with each other, serving as a financial middleman. They would determine how much they would each put towards the common pool during their regular meetings. Every time there was a meeting, the donation was made. Due to internal elections within the organisation, the SHGs had a president, secretary and treasurer. Even the minutes were kept up to date by these elected officials. The contributions, after some months, were converted to a reasonable amount, and from there on lending was carried out to a/some needy member(s). Of course, before lending, a collective decision was taken by the members as to the availability of funds and repaying capacity of the member borrower. There were times when a fund crunch was experienced in the group. This happened when the required funds exceeded the amount accumulated. In this case, they scout external sources of funding that may be specialising in microfinance funding such as NABARD, SIDBI and the Social Welfare Department of the government, DRDA, commercial banks or NBFCs.

In their thesis, Palmkvist and Jun Lin (2015), stated that in addition to non-financial services such as literacy instruction, business training and skills development, MFIs also offered financial services such as micro-credit, micro-savings and micro-insurance. MFIs established the microfinance delivery technique of SHGs to reach the poorest and most isolated women. SHGs were given access to both financial and non-financial services based on joint liability and shared knowledge. MFIs, through SHGs, typically targeted women since they were more productive borrowers of loans, and rising research had shown that giving women access to financial and non-financial services helped empower them. The accomplishment of gender equality required the empowerment of women.

In his study, Ghosh (2005) claimed that microfinance encompassed a variety of financial services, the majority of which were credit and savings. It also included additional services, such as insurance, that were intended to ultimately help the underprivileged or poorer members of society, particularly those who were struggling financially. This was frequently supported by a range of support services, such as organising and inspiring the poor and assisting them in creating connections both backward and forward with other support institutions. The goal was to offer the underprivileged the tools they needed to become self-sufficient. They lacked the means to support themselves financially, let alone satisfy their bare necessities of consuming.

In their article, Mishra and Chandra (2010) made an effort to comprehend microfinance in India as well as to conduct a comparison of public and private sector banks' microfinancing practices. The study identified a few issues with microfinance and its programmes that constantly changing. Finding a cost-effective organisational structure to integrate microfinance in an environment where it was 'inherently ill-suited to adapt to the cultural world' of regular microfinance consumers was the first difficulty. The second issue was finding an organisational structure that was more suitable as 'former financial service NGOs' became banks. Commercial banks were concerned about the emergence of hybrid organisational structures that incorporated microfinance programmes. In order to take the place of privately-owned organisations, maturing microfinance NGOs were 'experimenting with numerous kinds of donor-sponsored capital share ownership'. These ownership and governing arrangements were developed with 'micro-enterprise clientele' in mind. Whatever strategies were used to address the two issues in the commercial banking sector, they will shape the direction of microfinance.

The establishment of a network of agents that can offer trustworthy services to lower-income persons and other groups that do not have access to other banking facilities, according to Sharma (2011), was one of the primary obstacles for banks. Banks aimed to increase lending opportunities through the agents while also extending a wide range of services. However, this hinged on the MFIs that were familiar with this group of people.

Microfinance is a tool for financial inclusion, according to the literature on the 'Status of Microfinance in India' (NABARD, 2012). With 103 million families reached by the SHG-Bank linkage programme in 2012, financial services have advanced significantly. Out of the 7,960,000 SHGs connected to banks in total for the year 2012. Of that, 6,299,000 were exclusively women SHGs and out of the total credit disbursed, nearly 86% was disbursed to exclusive women SHGs. With almost 8 million savings linked SHGs, it has more than 103 million poor households. Over 70% of the savings were internally loaned within the group and at the same time, the balance in the savings bank account was maintained. The most notable aspect of microfinance in the nation was that over 79% of SHGs affiliated with banks were exclusive women's organisations. This means that the working balance in the Savings Bank account for all 8 million SHGs was over ₹65.50 billion. According to estimates, banks have already used over ₹220 billion in savings, of which more than ₹150 billion went towards internal loans. More than 4.4 million SHGs have received regular bank loan disbursements.

On the other hand, the SHG programme has begun to lose momentum and hope, according to the Microfinance State of the Sector Report (2013). The National Bank for Agricultural and Rural Development (NABARD) initiative, which was started 20 years ago, prospered with continuous expansion. But it has slowed down over the previous 3 years. With the National Rural Livelihood Mission (NRLM) in the picture, things got worse with no clear agreement between NABARD and NRLM on how the SHG program would develop in the future. The NRLM is a poverty alleviation project initiated by the Ministry of Rural Development, Government of India. According to the Microfinance State of the

Sector Report (2013), microfinance is no longer alien to the country's financial system, as it had acquired a unique method of delivering limited finances. Thus, the microfinance system in India was a combination of diverse organisations that were dependent on financial institutions so they can sustain themselves.

Reddy and Noorbasha (2013) in their analysis stated that the world's poorest villages now had access to the dynamism of the market economy thanks to micro-credit programmes. Millions of people have been able to earn their way out of poverty with dignity because of this business-based approach to poverty reduction. The main criticism of micro-credit is that it does not help the poorest of the poor. It is commonly recognised that the poorest are excluded. The assumption is frequently made that persons who are moderately impoverished default less frequently than those who are acutely poor. Lack of understanding, the social isolation of the poor and official collaboration between micro-credit institution officials and non-poor households are some significant reasons contributing to this exclusion. The poor may be discouraged from participating in a micro-credit programme or their participation may be short-lived if there is too much financial discipline or stringencies, such as severe payback criteria and penalties for late payments. Moving forward with caution is necessary to prevent micro-credit from acquiring the negative traits of the formal credit distribution system.

The primary service is the SHG–Bank Linkage Programme. A significant advancement in banking with the poor might be attributed to NABARD's engagement in microfinance, which was introduced as a trial initiative on 26 February 1992. Under the pilot phase, the informal thrifty and credit groups of the poor started to be recognised as bank clients. After the pilot phase, the Reserve Bank of India established a working group on NGOs and SHGs in 1994. The managing director of NABARD led the group, and it produced a wide range of recommendations on how to internalise the SHG concept as a 'potential intervention tool in the area of banking with the poor'.

Nair and Tankha (2013) in their study state that in the past couple of years the 'Client' has emerged as the main character that revolved around microfinance. The fundamental focus of each self-regulatory endeavour has been to improve the methods for acquiring data on individual clients. The concept of responsible microfinance is supported by several tools, including the client protection principles, the code of conduct and the fair practices code. There are lending institutions who want the MFIs to join 'credit bureaus' in order to prevent repeated lending.

## **Methodology**

### *Objective*

- To study the macro and micro challenges in the delivery of microfinance services in rural India.
- To suggest workable strategies to tackle delivery challenges.

## Study Methodology

For the examination of macro and micro issues faced by the various microfinance organisations in providing microfinance, secondary data were used as the technique. The information was taken from the RBI, NABARD, Microfinance State of the Sector Report (2013) and author-led research that was cited throughout the article. The strategies for overcoming the delivery difficulties were based on secondary data, as previously mentioned, as well as informal interviews with SEWA Bank and its numerous microcredit trusts, microcredit associations and microcredit organisations, all of which engaged in extensive microcredit activities, and ICICI Bank, Rural Operations—Rural Operations Group, Central Operations, Mumbai. (The interviewees want to remain anonymous.)

The following is the organisation of the article. The literature review discussed the theoretical aspect of the study by talking about microfinance in India, their role in financial inclusion, the variety of delivery methodologies used in the nation, the various delivery challenges they faced, and some potential solutions to the delivery challenges. The delivery challenges addressed the macro and micro-obstacles that various MFIs encounter when distributing microfinance. strategies for macro challenges highlighted practical, easy-to-implement solutions that can be used by a variety of microfinance organisations to address both macro and micro delivery issues.

## General Discussion

It is clear from the literature review that microfinance in India is a very effective way to achieve financial inclusion and alleviating poverty in the country. It has made significant strides in up-scaling the microfinance industry but it still deals with some major, macro and micro challenges limiting its access to the client. The challenges, which needed the attention of the stakeholders and the policymakers, are the macro and micro challenges.

## Macro Delivery Challenges

*Assumptions in Conduct and Delivery of Microfinance.* The major challenge to the delivery and conduct of microfinance is the set of assumptions related to this activity. These assumptions are as follows:

1. *Self-employment is what the poorest wish for:* Those who support the strategy of eradicating poverty through micro-credit assumed that the poor would prefer to be employed on their own. To supplement their income from wage-earning jobs, they would engage in 'micro-scale farming', processing or even trading. The vast majority of the poor, particularly landless labourers, would prefer a consistent pay wherever they may work.



2. *The poor require credit as main financial service:* Most microfinance organisations believed that credit was the only thing the poor needed, although this was not totally accurate. For instance, SEWA Bank's experience demonstrated that women favoured to stash their assets in a secure location. Savings helped to cushion unforeseen financial needs and also built up 'equity' for borrowing.
3. *Not appropriate to target anyone just above the Poverty Line for Micro-credit:* This came from the 'Grameen Bank experience', which has demonstrated how providing micro-credit can benefit the most vulnerable. However, access to micro-credit 'by those who are not among the poorest is not necessarily better than the poorest' despite programmes helping the poor rise above the poverty line. Additionally, individuals above the poverty line who were assisted by microfinance created the critical wage employment prospects for the most vulnerable. It was evident that individuals who lived over the poverty level required micro-credit.
4. *Financially self-sustaining is possible for all micro-credit institutions:* Overall self-sustainability was supported, but presuming that all microfinance organisations could achieve it was unwise and needed further research.

#### *Microfinance as a Savings and Credit Movement*

Understanding the case of Andhra Pradesh, a southern State of India, in this context will shed light on savings and credit management of microfinance. The women's anti-arrack movement was fuelled by the organisational zeal that grew with the complete literacy campaign. Locally produced alcohol is called arrack. Later, this effort was redirected to become the savings and credit movement, in which the government, NGOs and many other groups took part. The 'thrift and credit', which produced many groups, was founded and organised by a large number of women. Although these actions in other states did not take the form of a movement, they did provide financial aid to reduce poverty.

#### *Access and Sustainability Challenge*

It was difficult for mainstream financial institutions to enter the microfinance market as well. Historically, microfinance has been viewed more as a social duty than as a potential commercial opportunity. Even legislative barriers prevented refinancing. For instance, the NABARD law restricted refinancing to private sector financial institutions. After the catastrophic Andhra Pradesh microfinance crisis, which led to the introduction of the Microfinance Bill in 2012, the organisations had to register and comply with all of the RBI's and the bill's requirements for conducting business, which presented additional hurdle. At a later stage shall understand in detail the Andhra Pradesh microfinance crisis as it saw women SHGs as vote banks for political parties.

#### *Capital Sufficiency*

Ironically, NGOs were not the most effective organisations over the long term, despite the fact that they invented microfinance. This is a result of the NGOs'

funds, which are typically very small handouts. NGOs were also prohibited from lending because doing so could violate Section 11(4) of the Income Tax Act. They risk losing their 'charitable status' in accordance with Section 12 of the Income Tax Act if they do this. Because of this, Section 2(15) of the Income Tax regulations states that microfinance cannot be considered a benevolent activity, to whomever it may concern. The other issue was that NGOs as a whole lacked the proper financial framework for carrying out microfinance programmes. The concept of capital sufficiency or adequacy was not applicable to them as they were registered as societies or trusts with no equity capital.

#### *Not Easy to Bring Millions of People Under Microfinance*

In a survey by the National Council of Applied Economic Research (NCAER) for the year 1994–1995, indicated the 'bottom three income categories with per capita income of up to ₹250 per month and accounted for 31.7% of all rural households that declared incomes less than expenditures'. Such people scarcely qualify as savers. This indicated that these people lacked sufficient possibilities for a living, which was the main issue. The survey revealed that agricultural and non-agricultural wage workers made up the entire 32% of poor rural households. This made it significantly more challenging to convince them to accept micro-credit, making it a significant obstacle to be overcome.

#### *Gap in Demand and Supply*

The government and financial organisations' numerous measures to help the rural poor raise their standards of living and establish welfare have not been successful. When considering the availability of rural credit, there seemed to be a significant disconnect between rural residents' requirements for savings and credit options and what was being offered by various lending organisations. Only 18.4% of the rural population has access to banking services through savings accounts, according to the RBI Banking Statistics (2003) and the Rural Population Census India (2001). At 17.2%, rural residents were still underserved by the availability of loans. It was clear that there was a significant shortage of savings and credit options available to the rural people. This was necessary to cover the MFIs.

#### *Women were Hardly Oriented in Evaluation, Marketing and Microfinance Delivery*

Long-term research has shown that rural women were typically the main customers of micro-credit and micro-savings. The rural Indian social structure and culture was one of the causes of this. In rural India, men typically did not go to SHGs or NGOs for a small loan or savings. And another thing is that the guys did not have time to visit a SHG/MFI because they were too busy with their agricultural businesses. MFIs required including women in their loan and savings programmes as a result. The status of women in rural areas had to be taken into consideration throughout their credit rating procedure. Micro-funding might benefit from a marketing strategy that prioritises women. The only approach that can connect with women who can take part in development is microfinance. Realisation has dawned on this by international donors, scholars, governments and other related experts who have been focusing on microfinance. The microfinance sector has



gone through leaps and bounds finding barriers affecting women's access to financial services. Today 14.2 million of the world's poorest women have access to financial services from MFIs, NGOs, Banks and other NBFCs (Cheston & Kuhn, 2002).

*Microfinance Under Vote-bank Politics: Crisis in Andhra Pradesh (India)*

The simultaneous expansion of the SHG–Bank linkage model advocated by the State and the MFI by private operators is to blame for the microfinance problem in Andhra Pradesh. By 2010, it was expected that the State had 19.11 million SHG–Bank linkage members and 6.25 million MFI borrowers. Bank loans to MFIs had been expanding more quickly than bank loans to SHGs in terms of percentage growth. MFI's rapid growth allowed it to overtake SHG as the most widely used microfinance model. This was the catalyst for a crisis because the political establishment found it intolerable and feared losing control of a significant voter base. Even the civil employees agreed with the political authorities because if MFIs took over the dominating position, they would lose control of a significant programme and its associated funding.

This fear was a major motivator for the personnel of the government-sponsored Andhra Pradesh Society for Elimination of Rural Poverty (SERP) to be hostile towards MFIs. In Andhra Pradesh, microfinance had a growing influence on electoral politics. Women's SHGs were viewed by *Telugu Desham Party* (TDP), a local political party, as a possible vote source and political constituency. Before the 1999 elections, banks were convinced to reduce interest rates on loans to women's SHGs from 12% to 9%. A national political party (the Congress Party) promised women the *Pavala Vaddi* programme, which contained loans with 3% annual interest; this promise helped the Congress Party win the 2004 elections and put them in power.

Interest rates were reduced to zero (interest-free loans) with a ceiling loan amount, which was offered in the 2009 elections as a means of gaining the support of women voters. The recovery rates of bank lending to SHGs decreased during this time. While the recovery rate was over 95% in 2007–2008, by 2010–2011 it had significantly decreased to a reported 60–70%. As the conflict between the TDP and the Congress Party in the state raged on, micro-credit borrowers felt tremendously tormented and some even committed suicide. At that time, the MFIs received covert support from the state's Congress government, whereas SHGs received minimal attention.

The statements made by political party leaders in October 2010 when media criticism of MFIs was at its height had an impact, forcing the Congress administration in Andhra Pradesh to pass a law restricting MFIs. The Andhra Pradesh MFIs (Regulation of Money Lending) Ordinance, 2010, was introduced by the state government and eventually became the Andhra Pradesh MFIs (Regulation of Money Lending) Bill, 2011. Multiple provisions of this statute effectively prevented MFIs from operating in the state. For instance, MFI workers had to wait in a busy public area for borrowers to arrive and pay rather than going to the borrower's home or place of employment for recoveries. Without the government's prior consent, no further loans were allowed. Although the law's

stated purpose was to shield MFI borrowers from coercion and excessive debt, it made it impossible for MFIs to operate in the State. This significantly slowed recovery times. However, opposition leaders from the TDP and Communist Party of India (CPI) seized the chance to gain popularity by claiming that the law had not gone far enough and advising people not to pay back MFI loans, which caused a widespread default on repayments. Up till April 2012, 90% of delinquent loans totalling over 9.2 million valued at ₹72,000 million remained unpaid. In India as a whole, banks panicked and stopped providing loans to MFIs.

People ceased making MFI loan repayments after adopting the practical view. Bank loan flows to SHGs in the State also decreased. This prompted the Andhra Pradesh government to establish the *Stree Nidhi* special institution. To give interest-free loans to women, this was an apex cooperative credit society. It provided loans of ₹66 million to members of women's SHGs through a high-tech platform. But because bank credit became scarcer and money lenders remained to be the main source of funding at interest rates ranging from 5% to 10% per month (60–120% annually), this had little effect on the general availability of credit. Thus, the Andhra Pradesh Government issued *vaddi leni runam*, or an interest-free loan, in a final act of political desperation to make it seem like the champion of the poor.

## Micro Delivery Challenges

This referred to operational factors that impeded the extension of rural credit with high transaction costs. In rural places, the quantity needed to be saved or conserved was frequently very little. It had not shown to be cost-effective to provide it through the traditional banking system or other financial organisations.

### *Document-based Lending*

Documentary proof of identification and sources of money served as the foundation for mainstream finance. However, the impoverished in rural regions did not typically have access to either of these. In conventional banking, the lender is required to hold certain assets as collateral. This made guaranteed the debt would be paid back. The lender had the right to amortise the asset in order to recoup its losses in the event of a default. Rural people rarely had assets (land, jewellery), and as a result, they were excluded from the traditional banking system.

### *Repayment Issues*

Because micro-credit was not supported by documentary evidence, tracking repayment became a major operational challenge. Additionally, the financial institutions (FIs) were forced to write off the entire portfolio in times of crises

such as natural catastrophes that affect the entire rural economy because there are no other options for risk mitigation. Cash management is a significant issue for MFIs, particularly when it comes to paying the EMI on a microcredit. Due to the organisations' reliance on field officers to collect payments, particularly MFIs and NBFCs, any cash theft by them worsens the organisation's situation.

## **Discussion on the Strategies**

### *Macro-level Challenges*

It was crucial to make MFI activities more accessible and reachable to rural poor people in general and the poorest among them in particular. Therefore, by involving the State apparatus, the task of turning this activity into a savings and credit movement can be met. Along with affording it the essential independence, the polity not only supported the movement but also engaged the bureaucracy in it. It could strengthen the movement and lend it legitimacy because the State has control over both financial and non-financial resources.

Using the paradigm of banks–NGO–SHG linkage, where banks both public and private lend capital to the NGOs, capital adequacy challenges encountered by NGOs can be resolved. These NGOs actively participate in funding SHGs and other organisations that offer micro-credit by lending money to them. Additionally, money can be raised through organisations that lend money for the same goal on a national and international level. Leading companies such as BASIX, which borrowed from banks such as HDFC, ICICI and SIDBI as well as developmental organisations such as the Swiss Agency for Development Corporation and Shorebank Corporation of the USA, have successfully used this strategy. For offering micro-credit, the same money has been given to NGOs and SHGs in Andhra Pradesh and other southern States. Today, it is possible to raise private funding to support outreach initiatives. MFIs could employ the private capital as part of their equity.

Programs for micro-credit can be redesigned to focus on the poor and micro-entrepreneurs that do not fit the definition of 'poor'. This is because commercial farmers and micro-entrepreneurs both run enterprises that provide the poor with much-needed wage-related employment possibilities. Before becoming self-employed, the poorest need support through wage work. As soon as they start working for a wage, they begin micro-saving and may later apply for micro-credit. Additionally, MFIs and banks operating under the NGO–SHG linkage model may provide funding to NGOs to expand their initiatives relating to the provision of chances for wage employment or for starting micro-businesses.

### *Micro-level Challenges*

Some strategies can be used for micro-challenges in terms of recovering transaction costs. As a physical touch point, the Post Office can be crucial in the distribution of microfinance. Every Post Office may have a nodal organisation

that can help the rural residents organise an SHG in order to obtain micro-credits. In addition, the network of Post Offices and Post Office employees can perform the function of providing banking services through *Banko Postal*. The efficiency of empowering the participants and the administrators would increase with technological advancement in the micro and small-scale sectors' activities.

Recovery of transaction costs may come from the usage of ATMs for payment, account opening, small deposit collecting, microcredit providing, sale of savings bonds and insurance. In addition, gradual automation will help the financial sector experience faster and greater development across the board. Microfinance transactions can now be completed via mobile banking, which has increased its clientele. The availability of mobile banking around-the-clock is one factor in its appeal. The reduced transaction costs of mobile devices and the access they enable MFIs to remote markets are advantages.

The creation of the Business Correspondence Model is another significant achievement in solving the difficulties of microfinance distribution. In order to increase their reach, banks were given permission by the Reserve Bank of India to name 'Business Correspondents' in January 2006. Business Correspondents (BCs) carry out all transactions on the bank's behalf and serve as the institution's 'tellers'. Banks compensate BCs with commissions for the services they provide. Initially, NGOs, MFIs, NBFCs and Post Offices served as BCs; however, the laws have since altered to accommodate people, local businesses and corporations.

Further collaborations with NGOs and SHGs operating in rural areas could lower transaction costs by requiring them to provide the financing. These organisations will be efficient providers of micro-credit thanks to their database and consumer history of the region. This will increase micro-credit and reach for the MFIs while at the same time reducing the direct cost of lending. Lending needed to be coupled with insurance and other services such as training and marketing support, government subsidies and others.

## Conclusion

In India, microfinance is essential to achieving financial inclusion for the underprivileged in both urban and rural areas. It was crucial to make MFI activities more accessible and reachable to rural poor people in general and the poorest among them in particular. The macro-challenges that the MFIs faced were the poor's lack of access to microfinance services, inadequate capital, a mismatch between the demand and supply of micro-credit and savings, and the lack of awareness among women about evaluation, marketing and microfinance delivery, besides the politicisation of women SHGs by politicians that triggered the battle for the vote bank. The battle for vote banks not only downplayed the MFIs but also eroded bank credit flow to SHGs.

When it came to micro-challenges, MFIs were unable to lower the skyrocketing transaction costs associated with providing microfinance; there was also the issue of documentary evidence and collaterals with the majority of the poor; and of

course, there was the issue of tracking repayments when there was no documentary evidence of money lent.

Innovation in operational techniques addressing these macro and micro-challenges can help to overcome the main obstacles to the successful delivery of microfinance. As reflected in the study, innovative practices such as tying up with local NGOs and SHGs would help in the successful delivery of microfinance. Also, to address the delivery issues, the possibility of using the local Panchayat and post office branches as nodal entities for microfinance delivery should be investigated. Future microfinance activity's success would depend on how actively MFIs, NGOs, SHGs and banks participated. These institutions must integrate and link together in order to share and transmit information, among other types of resources. The role of microfinance as an effective tool for poverty alleviation is being seriously considered and with the success of SHGs and other micro-credit delivery models in selected places of the country has created a favourable reputation for the micro-credit sector (Das, 2005).

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### **References**

- Asian Development Bank. (2000). *Finance for the poor: Microfinance development policy*. <http://www.adb.org/documents/finance-poor-microfinance-development-strategy>
- Cheston, S., & Kuhn, L. (2002). *Empowering women through microfinance*. UNIFEM.
- Das, V. (2006). Indian microfinance sector: The road ahead. In *Towards a sustainable microfinance outreach in India: Experiences and perspectives* (p. 131). Microcredit Innovations Department, NABARD.
- Ghosh, R. (2005). *Microfinance in India: A critique*. Working Paper Series.
- Kothari, V., & Gupta, N. (2008). *Micro credit in India: Overview of regulatory scenario*. <http://www.vinodkothari.com/Micro%20Credit%20in%20India%20-%20Overview%20of%20the%20Regulatory%20Scenario.pdf>
- Mishra, N., & Chandra, M. (2010). *Microfinance in Indian banking industry and its future* (pp. 625–628). IEEE Publication.
- NABARD. (2012). *State of microfinance in India*. <http://www.nabard.org/departments/pdf/Status%20of%20Microfinance%202011-12%20full%20book2.pdf>
- Nair, T., & Tankha, A. (2013). *Microfinance state of the sector report 2013*. Sage Publications. [www.sagepublications.com](http://www.sagepublications.com)

- Palmkvist, F., & Pei Jun Lin, R. (2015). *Women's empowerment through microfinance self-help groups: A systematic literature review* [Bachelor thesis, Aarhus University, School of Business and Social Sciences].
- Reddy, C. H. V. K., & Noorbasha, A. (2012). *Impact of microfinance on income and employment generation: A case study of Andhra Pradesh*. Scholar's Press.
- RBI Banking Statistics. (2003). <https://www.rbi.org.in/scripts/WSSView.aspx?Id=5649>
- Shankar, S. (2007). Transaction costs in group microcredit in India. *Management Decision*, 45(8), 1331–1342.
- Sharma, M. (2011). Microfinance in India: Is business correspondent the way forward? *MicroSave India Focus Note 75*. [http://microsave.net/files/pdf/IFN\\_75\\_Microfinance\\_in\\_India\\_Is\\_BC\\_the\\_Way\\_Forward.pdf](http://microsave.net/files/pdf/IFN_75_Microfinance_in_India_Is_BC_the_Way_Forward.pdf)

# Google Scholar Profile for Institutions: A Sample Study

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## Abstract

This study examines the Google Scholar profile for Gandhigram Rural Institute. Gandhigram Rural Institute (deemed to be university) has established a Google Scholar profile for their research. The Gandhigram Rural Institute's faculty publications information was collected from Web of Science and Scopus as of 22 January 2021. After consolidating the data from Web of Science and Scopus, a Google Scholar profile was created. After generating a profile, missing publication data were added to the profile as a sample for the year 2020. The present study information was obtained from Gandhigram Rural Institute Google Scholar profile. It was examined using data from Google Scholar, Web of Science and Scopus. Department publications, Google Scholar citations, the top 15 highly cited papers, and the citations and h-index of the top 15 faculty members were all analysed. It is discovered that 'Department of Chemistry' has published 78 (33.77%) publications and has received the greatest number of citations from Google Scholar, 294 (64.19%) citations from Web of Science and 96 (50.79%) citations from the Scopus database. It is found that Faculty S. Meenakshi has received the highest number of 232 (27.10%) citations from Google Scholar, 134 (29.26%) citations from the Web of Science and 47 (28.87%) citations from Scopus. It concluded that having an institution profile in the Google Scholar profile makes it very difficult to update and strengthen all the data in the profile. A Google Scholar profile can be useful as an individual profile if the data are kept up-to-date and maintained.

## Keywords

Google Scholar, h-index, international institutions and organisations, Scopus, Web of Science

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## **Introduction**

The productivity of research is most important for higher educational institutions. All higher education institutions now have an internal quality assessment cell (IQAC) that updates institute data on a monthly and annual basis. In an earlier stage, identifying the individual faculty publications was very difficult. The IQAC section requests faculty publications from databases such as Web of Science and Scopus. The purpose of the study is to create a Google Scholar profile for the institute. Based on the profile, it helps submit the faculty publications and metrics to IQAC, NIRF and other accreditations. The institute Google Scholar profile is a very simple, scalable and economical way to track faculty publications from different publisher groups, and these institute profiles give the latest updates on faculty publication alerts. Google Scholar automatically tracks the scholarly output and citation counts of individual researchers, and this facility helps to create a Google Scholar profile for the institute and provides the latest publication information to faculty members, research scholars and students.

Google Scholar makes it simple to search for scholarly literature. From one place, one can search across many disciplines. At the same time, the types of documents are articles, theses, books, abstracts and court opinions, with sources from academic publishers, professional societies, online repositories, universities and other websites. Google Scholar helps one find relevant work across the globe in scholarly research articles. Google Scholar always ranks documents based on the available publication details, as well as those that have recently been cited in other scholarly literature. It provides as many links to an article available on the Internet as free access permits (Google Scholar, 2021). Elango and Bornmann (2021) recently added information on funded details in the Google Scholar search results items. One of the main functions of Google Scholar is to update in all respects. It is an attempt to research and a possible method of gathering data for an institution's profile.

### ***Features of Google Scholar***

- Search all scholarly literature bring into one place.
- Explore related works details, citations, author names and the publications.
- Locate all the documents through in your library or on the web.
- Update the recent developments in any area of research.
- Check the citations of your publications and create a public author profile.
- View any author profile if it provided in public access.
- Create alerts from a particular author profile.

## **Review of Literature**

Cortés et al. (2021) compared region-wise development on management and technology with the framework using three bibliographic databases/search



engines of Google Scholar, Dimensions and Microsoft Academic. Martín-Martín et al. (2020) investigated Google Scholar found 88% of all citations. Microsoft Academic is the second biggest overall (60% of all citations), including 82% of Scopus citations and 86% of WoS citations. Microsoft Academic and Dimensions are great options in contrast to Scopus and WoS as far as inclusion in many subject categories. Pölönen and Hammarfelt (2020) investigated the historical and linguistic coverage of Google Scholar, using publications in the field of Roman law as an example.

Thoma and Chan (2019) created sample Google Scholar profiles to track the scholarly productivity of five research groups in an institutional, educational research program. It added the publications of each group member to their respective group Google Scholar profiles and monitored the suggested citations. Zientek et al. (2018) discuss the benefits of Google Scholars and the use of Google Scholar to disseminate one's research using social media. Mingers et al. (2017) collected citations from Google Scholar for all 130 UK universities for evaluation. It compared with various rankings based on 2014 UK Research Excellence Framework (REF) data rankings. The rankings are demonstrated to be dependable and avoid some of the obvious problems of the REF ranking and be highly efficient and cost-effective. Orduña-Malea et al. (2016) attempted to identify specific characteristics of the Google Scholar profile tested in the Spanish academic system.

Tamizhchelvan and Dhanavandan (2015) analysed publications of faculty members in Gandhigram Rural Institute. Haddaway et al. (2015) found that Google Scholar can also find much grey literature and specific, known studies; it may not be used alone for systematic review searches. Rather, it forms a powerful addition to other traditional search methods. In addition, it advocates using tools to transparently document and catalogue Google Scholar search results to maintain high levels of transparency and the ability to be updated, critical to systematic reviews.

Lewandowski (2010) measured the coverage of Google Scholar for the Library and Information Science (LIS) journal literature. It is found that Google Scholar completely indexes only some journals, and the ratio of versions available depends on the type of publisher. The availability of that data varies depending on the article. Google Scholar cannot replace abstracting and indexing services because it does not cover the entire body of literature on the topic. This research differs from previous Google Scholar coverage studies. It takes into account whether or not an article is indexed in Google Scholar at all, as well as the sort of availability. Kulkarni (2009) compared the citation count profiles of articles published in general medical journals among the citation databases of Web of Science, Scopus and Google Scholar. In multivariable analysis, group authorship was the only characteristic that differed among the databases; Google Scholar had significantly fewer citations to group-authored articles ( $-0.30$ ; 95% CI,  $-0.36$  to  $-0.23$ ) compared with Web of Science. Web of Science, Scopus and Google Scholar produced quantitatively, and qualitatively different citation counts for articles published in three general medical journals. Kousha and Thelwall (2007) attempted a new approach to finding citation patterns. From their study, Google Scholar citations were more various than ISI references in the four sociology disciplines just as in computer science, recommending that Google Scholar is a more exhaustive tool for citation following

in the sociologies and may be like wise in quick fields where conference papers are exceptionally esteemed and distributed on the web. The outcomes for Web/URL citations proposed that counting a limit of one hit for every webpage creates a superior measure for evaluating the effect of open access journals or articles because replicated web citations are very common within individual sites. The results can be considered additional evidence that there is some commonality between traditional and web-extracted citations.

## Creation of Google Scholar Profile

### Gandhigram Rural Institute (GRI) Google Scholar Profile

**Gandhigram Rural Institute**  
 Gandhigram Rural Institute  
 Verified email at ruraluniv.ac.in - [Homepage](#)

	All	Since 2016
Citations	39	20
h-index	1	1
i10-index	1	1

**Publications:**

- Characterization of SiO<sub>2</sub> and Al<sub>2</sub>O<sub>3</sub> incorporated PVDF-HFP based composite polymer electrolytes with LiPF<sub>6</sub>(CF<sub>3</sub>CF<sub>2</sub>)<sub>2</sub>  
 V Arasindan, P Vickraman  
 Journal of Applied Polymer Science 108 (2), 1314-1322

## Institute Publications Collecting Methods

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- Inhibitive effect of black pepper extract on the sup PG Raju, MG Sethuraman Materials letters 62 (17-18), 2977-2979
- Sprulina platensis-A novel green inhibitor for acid corrosion of mild steel C Kamal, MG Sethuraman Arabian Journal of Chemistry 5 (2), 155-161
- Biogenic robust synthesis of silver nanoparticles using Punica granatum peel and its application as a green catalyst for the reduction of an anthropogenic pollutant 4-nitrophenol T,II Edison, MG Sethuraman Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy 104, 262-264
- Microwave assisted green synthesis of fluorescent N-doped carbon dots: cytotoxicity and bio-imaging applications

	All	Since 2016
Citations	5086	3344
h-index	33	27
i10-index	79	59

## Research Methodology

The data were extracted from Gandhigram Rural Institute Google Scholar Profile (2021) (<https://scholar.google.com/citations?user=NnHr3NoAAAAJ&hl=en>). The Gandhigram Rural Institute faculty data is taken from the Gandhigram Rural Institute (deemed to be university) (n.d.) website (<https://www.ruraluniv.ac.in/>). The publication data were collected from the Web of Science and Scopus databases for 2020. The publications from Web of Science and Scopus have been combined, and the final publication data have been uploaded to the Google Scholar profile. The study analyses department-wise publications, citations from Google Scholar, Web of Science and Scopus, the top 15 highly cited publications, the top 15 faculty members' citations from various databases, and the top 15 faculty members' Google Scholar citations and h-index.

## Objectives of the Study

These are the major objectives of the study.

- To analyse the department-wise publications of the Gandhigram Rural Institute Google Scholar profile.
- To identify the citations in various databases (Google Scholar, Web of Science and Scopus).
- To find out the top 15 highly cited papers for 2020.
- To identify the top 15 faculty members' publications and citations for 2020.
- To analyse the top 15 faculty members' citations and h-index (Google Scholar, Scopus and Web of Science).
- To identify the collaboration of Gandhigram Rural Institute with other institutions.

## Data Analysis and Interpretation

The data have been analysed based on publications and citations by department, highly cited articles and top-ranked 15 faculty members.

### *Department-wise Publications*

Table 1 shows the department-wise publications of the Gandhigram Rural Institute Google Scholar Profile. It is found that the 'Department of Chemistry' has published 78 (33.77%) publications and placed first. It is followed by the 'Department of Physics', which has published 45 (19.48%) publications and is in second place. It is further found that the 'Centre for Applied Research', 'Department of Economics' and 'Department of Home Science' have published the least number of publications and are in the fourteenth position.

**Table 1.** Department-wise Publications.

S. No.	Department	Publications	%	Rank
1	Centre for Applied Geology	3	1.30	8
2	Centre for Applied Research	1	0.43	14
3	Centre for Geoinformatics	2	0.87	9
4	Centre for Rural Energy	11	4.76	5
5	Centre for Rural Technology	2	0.87	9
6	Department of Biology	24	10.39	4
7	Department of Chemistry	78	33.77	1
8	Department of Computer Science and Applications	10	4.33	6
9	Department of Economics	1	0.43	14
10	Department of Fine Arts	2	0.87	9
11	Department of Home Science	1	0.43	14
12	Department of Library	2	0.87	9
13	Department of Mathematics	42	18.18	3
14	Department of Physics	45	19.48	2
15	Department of Rural Industries and Management	5	2.16	7
16	School of Agriculture and Animal Sciences	2	0.87	9
	Total	231	100	

### *Department-wise Citations from Various Databases (Google Scholar, Web of Science and Scopus)*

Table 2 indicates department-wise citations from various databases (Google Scholar, Web of Science and Scopus). It is found that the 'Department of Chemistry' has received the highest number of 478 (55.84%) citations from Google Scholar, 294 (64.19%) citations from Web of Science and 96 (50.79%) citations from the Scopus database and placed first. It is followed by the 'Department of Physics', which has received 151 (17.64%) citations from Google Scholar, 87 (19.00%) citations from the Web of Science and 41 (21.69%) citations from the Scopus database, placing it in second place.

It is further found that 'Centre for Applied Research', 'Department of Economics', 'Department of Home Science' and 'Department of Library' have received a lower number of citations from Google Scholar. It is further found that 'Centre for Applied Geology', 'Centre for Applied Research', 'Centre for Rural Technology', 'Department of Economics', 'Department of Fine Arts', 'Department of Home Science' and 'Department of Library' have received the least number of citations from the Web of Science database and are ranked ninth. It is further found that 'Centre for Applied Research', 'Centre for Geoinformatics', 'Centre for Rural Technology', 'Department of Economics', 'Department of Home Science', 'Department of Library' and 'Department of Rural Industries and Management' have received fewer citations from Scopus and placed in the tenth rank.

**Table 2.** Department-wise Citations from Various Databases.

S.No.	Department	Google Scholar			Web of Science			Scopus		
		Citation and %	Rank	Rank	Citation and %	Rank	Rank	Citation and %	Rank	
1	Centre for Applied Geology	2 (0.23)	10	10	0 (0.00)	9	9	1 (0.53)	6	
2	Centre for Applied Research	0 (0.00)	13	13	0 (0.00)	9	9	0 (0.00)	10	
3	Centre for Geoinformatics	5 (0.58)	7	7	3 (0.66)	6	6	0 (0.00)	10	
4	Centre for Rural Energy	5 (0.58)	7	7	1 (0.22)	8	8	1 (0.53)	6	
5	Centre for Rural Technology	2 (0.23)	10	10	0 (0.00)	9	9	0 (0.00)	10	
6	Department of Biology	79 (9.23)	4	4	30 (6.55)	4	4	28 (14.81)	3	
7	Department of Chemistry	478 (55.84)	1	1	294 (64.19)	1	1	96 (50.79)	1	
8	Department of Computer Science and Applications	31 (3.62)	5	5	5 (1.09)	5	5	7 (3.70)	5	
9	Department of Economics	0 (0.00)	13	13	0 (0.00)	9	9	0 (0.00)	10	
10	Department of Fine Arts	1 (0.12)	12	12	0 (0.00)	9	9	1 (0.53)	6	
11	Department of Home Science	0 (0.00)	13	13	0 (0.00)	9	9	0 (0.00)	10	
12	Department of Library	0 (0.00)	13	13	0 (0.00)	9	9	0 (0.00)	10	
13	Department of Mathematics	87 (10.16)	3	3	35 (7.64)	3	3	13 (6.88)	4	
14	Department of Physics	151 (17.64)	2	2	87 (19.00)	2	2	41 (21.69)	2	
15	Department of Rural Industries and Management	5 (0.58)	7	7	2 (0.44)	7	7	0 (0.00)	10	
16	School of Agriculture and Animal Sciences	10 (1.17)	6	6	1 (0.22)	8	8	1 (0.53)	6	
	Total	856			458			189		

**Table 3.** Top 15 Highly Cited Articles.

S. No.	Source Details	Author and Department	Citations			R
			GS	WoS	Scopus	
1	Near-infrared (NIR) absorbing dyes as promising photosensitizers for photodynamic therapy. <i>Coordination Chemistry Reviews</i> , 411, 213233 (2020). Article has read in 59 readers in Mendeley and three tweets in social media. (Plumx Matrics)	G. Sivaraman (Chemistry)	47	32	0	1
2	Mechanistic performance of polyaniline-substituted hexagonal boron nitride composite as a highly efficient adsorbent for removing phosphate, nitrate, and hexavalent chromium ions from an aqueous environment. <i>Applied Surface Science</i> , 511, 145543 (2020).	S. Meenakshi (Chemistry)	30	21	0	2
3	Structural, elastic, optical and -ray shielding behaviour of Dy <sup>3+</sup> ions doped heavy metal incorporated borate glasses. <i>Journal of Non-Crystalline Solids</i> , 545, 120269 (2020).	K. Marimuthu (Physics)	25	21	0	3
4	Structural, elastic, optical and -ray shielding behavior of Dy <sup>3+</sup> ions doped heavy metal incorporated borate glasses. <i>Journal of Non-Crystalline Solids</i> , 545, 120269 (2020).	K. Marimuthu (Physics)	25	0	23	3
5	A simple pyrazine based ratio-metric fluorescent sensor for Ni <sup>2+</sup> ion detection. <i>Dyes and Pigments</i> , 173, 107897 (2020).	G. Sivaraman (Chemistry)	20	18	0	5
6	Physical and structural effect of modifiers on dysprosium ions incorporated boro-tellurite glasses for radiation shielding purposes. <i>Ceramics International</i> , 46(11), 17929–17937 (2020).	K. Marimuthu (Physics)	20	14	0	5
7	Adsorptive performance of lanthanum encapsulated biopolymer chitosan-kaolin clay hybrid composite for the recovery of nitrate and phosphate from water. <i>International Journal of Biological Macromolecules</i> , 154, 188–197 (2020).	S. Meenakshi (Chemistry)	19	10	0	7

(Table 3 continued)

(Table 3 continued)

S. No.	Source Details	Author and Department	Citations			R
			GS	WoS	Scopus	
8	Lanthanum (III) incorporated chitosan-montmorillonite composite as flexible material for adsorptive removal of azo dyes from water. <i>Materials Today: Proceedings</i> , 27, 318–326 (2020).	S. Meenakshi (Chemistry)	18	0	14	8
9	Effective removal of organic pollutants by adsorption onto chitosan supported graphene oxide-hydroxyapatite composite: A novel reusable adsorbent. <i>Journal of Molecular Liquids</i> , 318, 114200 (2020).	S. Meenakshi (Chemistry)	17	15	0	9
10	<i>In situ</i> fabrication of magnetic particles decorated biopolymeric composite beads for the selective remediation of phosphate and nitrate from aqueous medium. <i>Journal of Environmental Chemical Engineering</i> , 8(2), 103530 (2020).	S. Meenakshi (Chemistry)	15	11	0	10
11	Mechanistic performance of organic pollutants removal from water using Zn/Al layered double hydroxides imprinted carbon composite. <i>Surfaces and Interfaces</i> , 20, 100581 (2020).	S. Meenakshi (Chemistry)	15	9	0	11
12	Effect of different modifier oxides on the synthesis, structural, optical and gamma/beta shielding properties of bismuth lead borate glasses doped with europium. <i>Journal of Materials Science: Materials in Electronics</i> 31, 21486–21501 (2020).	K. Marimuthu (Physics)	15	8	0	11
13	Biopolymer K-carrageenan wrapped ZnO nanoparticles as drug delivery vehicles for anti MRSA therapy. <i>International Journal of Biological Macromolecules</i> , 144, 9–18 (2020).	Balasubramanian Ma-laikozhundan (Biology)	14	9	0	13
14	Tunable electrochemical synthesis of 3D nucleated microparticles like Cu-BTC MOF-carbon nanotubes composite: Enzyme free ultrasensitive determination of glucose in a complex biological fluid. <i>Electrochimica Acta</i> , 354, 136673 (2020).	J. S. Abraham (Chemistry)	13	10	0	14

(Table 3 continued)

(Table 3 continued)

S. No.	Source Details	Author and Department	Citations			R
			GS	WoS	Scopus	
15	Sol-gel based hybrid silane coatings for enhanced corrosion protection of copper in aqueous sodium chloride. <i>Journal of Molecular Liquids</i> , 302, 112551 (2020).	M. G. Sethuraman (Chemistry)	13	10	0	14

**Note:** GS: Google Scholar; WoS: Web of Science.

### Top 15 Highly Cited Articles

Table 3 indicates the 15 most highly cited articles. It is found that ‘Near-infrared (NIR) Absorbing Dyes as a Promising Photosensitizer for Photodynamic Therapy’ has received 42 citations from Google Scholar and 32 citations from the Web of Science and shared two altmetric scores that have placed it in the first rank, followed by ‘Mechanistic Performance of Polyaniline-Substituted Hexagonal Boron Nitride Composite as a Highly Efficient Adsorbent for the Removal of Phosphate, Nitrate, and Hexavalent Chromium Ions from an Aqueous Environment’ (placed second), which received 30 citations from Google Scholar and 21 citations from the Web of Science. It was discovered that the papers ‘Tunable Electrochemical Synthesis of 3D Nucleated Microparticles Like Cu-BTC MOF-Carbon Nanotubes Composite: Enzyme Free Ultrasensitive Determination of Glucose in a Complex Biological Fluid’ and ‘Sol-Gel Based Hybrid Silane Coatings for Enhanced Corrosion Protection of Copper in Aqueous Sodium Chloride’ received 13 citations from Google Scholar and ten citations from Web of Science, respectively, and were ranked 14th.

### Top 15 Faculty Members’ Citations for the Year 2020

Table 4 shows the top 15 faculty member citations. It is found that ‘S. Meenakshi’ has received the highest number of 232 (27.10%) citations from Google Scholar, 134 (29.26%) citations from the Web of Science and 47 (28.87%) citations from Scopus and placed first. It is followed by ‘K. Marimuthu’, who has 100 (11.68%) citations from Google Scholar, 52 (11.35%) citations from the Web of Science and 26 (13.76%) citations from the Scopus database, and is ranked second. It is also discovered that ‘G. Mahadevan’ has received fewer citations from Google Scholar and is near the bottom of the list on Web of Science. It is further found that ‘S. Abraham John’, ‘P. Nithiananthi’ and ‘G. Nagamani’ have received the least number of citations and are ranked 13th.



**Table 4.** Top 15 Faculty Members Citations for the Year 2020.

S. No.	Author	Google Scholar			Web of Science			Scopus		
		NoP	Citation and %	Rank	NoP	Citation and %	Rank	NoP	Citation and %	Rank
1	S. Meenakshi	25 (16.67)	232 (27.10)	1	17 (18.89)	134 (29.26)	1	7 (12.07)	47 (24.87)	1
2	Balasubramanian Malaikozhundan	12 (8.00)	75 (8.76)	3	7 (7.78)	28 (6.11)	5	5 (8.62)	24 (12.70)	3
3	M. G. Sethuraman	11 (7.33)	62 (7.24)	4	9 (10.00)	38 (8.30)	3	2 (3.45)	9 (4.76)	5
4	S.A. John	11 (7.33)	30 (3.50)	7	11 (12.22)	35 (7.64)	4	0 (0.00)	0 (0.00)	13
5	V. Kirubakaran	11 (7.33)	5 (0.58)	14	2 (2.22)	1 (0.22)	13	9 (15.52)	1 (0.53)	12
6	K. Marimuthu	10 (6.67)	100 (11.68)	2	6 (6.67)	52 (11.35)	2	4 (6.90)	26 (13.76)	2
7	K. P. Eliango	10 (6.67)	38 (4.44)	5	6 (6.67)	16 (3.49)	6	4 (6.90)	14 (7.41)	4
8	P. Balasubramaniam	9 (6.00)	18 (2.10)	9	5 (5.56)	5 (1.09)	10	3 (5.17)	4 (2.12)	8
9	P. Muthukumar	8 (5.33)	14 (1.64)	10	5 (5.56)	5 (1.09)	10	3 (5.17)	4 (2.12)	8
10	P. Nithiananthi	8 (5.33)	9 (1.05)	11	5 (5.56)	10 (2.18)	8	3 (5.17)	0 (0.00)	13
11	R. Uthayakumar	8 (5.33)	7 (0.82)	12	3 (3.33)	3 (0.66)	12	5 (8.62)	2 (1.06)	11
12	G. Nagamani	7 (4.67)	36 (4.21)	6	7 (7.78)	16 (3.49)	6	0 (0.00)	0 (0.00)	13
13	G. Muralidharan	7 (4.67)	19 (2.22)	8	4 (4.44)	10 (2.18)	8	3 (5.17)	5 (2.65)	6
14	G. Mahadevan	7 (4.67)	3 (0.35)	15	1 (1.11)	0 (0.00)	15	6 (10.34)	3 (1.59)	10
15	P.Vickraman	6 (4.00)	6 (0.70)	13	2 (2.22)	1 (0.22)	13	4 (6.90)	5 (2.65)	6

**Table 5.** Top 15 Faculty Google Scholar Citations and h-Index.

S.No.	Author	Google Scholar			Scopus			Web of Science					
		NoP	Cita-tions	h-Index	Rank	NoP	Cita-tions	h-Index	Rank	NoP	Cita-tions	h-Index	Rank
1	S. Meenakshi	192	7,495	46	2	188	5,968	40	2	144	5,249	38	2
2	Balsubramanian Malaikozhundan	46	1,188	19	10	36	904	17	11	8	56	4	14
3	M. G. Sethuraman	153	5,086	33	3	117	3,536	27	4	107	2,982	25	5
4	S.A. John	196	4,762	37	4	181	4,161	33	3	153	3,780	32	3
5	V. Kirubakaran	131	994	10	11	74	605	8	13	13	432	6	12
6	K. Marimuthu	152	3,624	39	6	125	3,141	37	6	91	2,880	35	6
7	K. P. Elango	222	3,013	29	7	202	2,686	26	7	195	2,475	26	7
8	P. Balasubramaniam	354	8,251	50	1	293	6,673	46	1	243	5,723	43	1
9	P. Muthukumar	77	692	17	13	81	991	24	10	60	852	18	9
10	P. Nithiananthi	70	364	11	15	62	357	11	14	33	315	11	13
11	R. Uthayakumar	259	2,714	25	8	181	1,640	20	8	51	605	14	10
12	G. Nagamani	45	702	15	12	39	607	14	12	38	557	14	11
13	G. Muralidharan	152	4,228	34	5	127	3,465	34	5	107	3,348	31	4
14	G. Mahadevan	134	419	10	14	53	144	8	15	-	-	-	15
15	P.Vickraman	74	1,319	22	9	65	1,027	19	9	54	973	19	8

**Table 6.** The Collaboration of Gandhigram Rural Institute with Other Institutions.

S. No.	Scopus		Web of Science	
	Institution	No P and %	Institution	No P and %
1	Alagappa University	8 (4.19)	Alagappa University	9 (6.67)
2	Pocker Sahib Memorial Orphanage College	8 (4.19)	Madurai Kamaraj University	6 (4.44)
3	Madurai Kamaraj University	6 (3.14)	Pocker Sahib Memorial Orphanage College	6 (4.44)
4	Kunsan National University	5 (2.62)	Kyungpook National University	5 (3.70)
5	Kyungpook National University	5 (2.62)	Bharathidasan University	4 (2.96)
6	National Institute of Technology Tiruchirappalli	4 (2.09)	Kunsan National University	4 (2.96)
7	Anna University	4 (2.09)	Imam Abdul Rahman Bin Faisal University	3 (2.22)
8	Kalasalingam Academy of Research and Education	4 (2.09%)	Kalasalingam Academy of Research and Education	3 (2.22)
9	Kangwon National University	3 (1.57)	Kangwon National University	3 (2.22)
10	National Institute for Materials Science	3 (1.57)	King Saud University	3 (2.22)
11	Universiti Putra Malaysia	3 (1.57)	National Institute for Materials Science	3 (2.22)
12	Bharathidasan University	3 (1.57)	Shanmuga Arts and Science Technology Research Academy Sastra	3 (2.22)
13	Shandong University, Weihai	3 (1.57)	Universiti Putra Malaysia	3 (2.22)
14	Vishwa Bharathi College of Pharmaceutical Sciences	2 (1.05)	Anna University	2 (1.48)
15	Yeungnam University	2 (1.05)	Chonnam National University	2 (1.48)

### *Top 15 Faculty Google Scholar Citations and h-Index*

Table 5 indicates the top 15 faculty members by Google Scholar, Web of Science, Scopus citations and h-index. It is found that 'P. Balasubramaniam' has received the highest number of 8,251 Google Scholar citations with a 50 h-index and has placed the first rank; it is followed by 'S. Meenakshi', who has received 7,495 Google Scholar citations with a 46 h-index and has placed the second rank. It is further found that 'G. Mahadevan' has received less than 419 Google Scholar citations with a 10 h-index and is ranked 14th.

It is discovered that 'P. Balasubramaniam' has received 6,673 citations from Scopus with a 46 h-index and is ranked first. It is followed by 'S. Meenakshi',

**Table 7.** Authorship Pattern.

S. No.	Authors	Frequency	%	Cumulative %
1	Single author	3	1.30	1.3
2	Two authors	64	27.71	29
3	Three authors	56	24.24	53.2
4	Four authors	44	19.05	72.3
5	Five authors	20	8.66	81
6	Six authors	44	19.05	100
	Total	231	100	

which has received 5,968 Scopus citations with a 40 h-index and placed second. It is further found that 'G. Mahadevan' has received less than 144 Scopus citations with an 8 h-index and is ranked 15th.

It is found that 'P. Balasubramaniam' has received the highest number of 5,723 Web of Science citations with a 43 h-index and has placed first and it is followed by 'S. Meenakshi', who has received 5,249 Web of Science citations with a 38 h-index and has placed second. It is also discovered that 'Balasubramaniam Malaikozhundan' has only 56 Web of Science citations with 4 h-index and is ranked 14th.

### *The Collaboration of Gandhigram Rural Institute with Other Institutions*

Table 6 reveals the collaboration of Gandhigram Rural Institute with other institutions. Table 6 shows that Gandhigram Rural Institute collaborated with institutions in the Web of Science and Scopus. The study reveals that the authors of Gandhigram Rural Institute collaborated on 8 (4.19%) Scopus publications with Alagappa University, Pocker Sahib Memorial Orphanage College, followed by Madurai Kamaraj University (6 (3.14%) publications), Vishwabharathi College of Pharmaceutical Sciences and Yeungnam University (2 (1.05%) publications).

The study reveals that the authors of Gandhigram Rural Institute collaborated on 9 (6.67%) Web of Science publications with Alagappa University, followed by Madurai Kamaraj University, Pocker Sahib Memorial Orphanage College (6 (4.44%) Web of Science publications). It is further found that Gandhigram Rural Institute authors collaborated on 2 (1.48%) publications at Anna University and Chonnam National University.

### *Authorship Pattern*

Table 7 indicates the authorship pattern of Gandhigram Rural Institute Google Scholar author profiles. Out of 231 publications, 64 (27.71%) were contributed by two authors, followed by 56 (24.24%) were contributed by three authors. The

most accepted type of collaboration was notably between two authors, three authors, four authors and six authors.

## Conclusion

In the current scenario, Google Scholar profiles are important for academic and higher learning institutions, and Google Scholar provides profile metrics like publication citations, h-index and i10-index. Anyone can create a Google Scholar account, even if one does not have an article published that has been indexed in the citation database but has been published in an online journal. Then he may receive citations through Google Scholar. Google Scholar recently added funding publication details to the Google Scholar profile. The profiles of institutions in Google Scholar are extremely difficult to update and strengthen with all of the data. The Google Scholar profile is a good individual profile if its data is kept up-to-date and maintained and if it has a high impact. The Google Scholar profile helps to submit the faculty publications and metrics to IQAC, NIRF and other accreditations, and these institute profiles give the latest updates on faculty publication alerts and help to provide the latest research activities to faculty members, research scholars and students.

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## References

- Cortés, J., Lin, X., & Xun, X. (2021). Research on innovation in business and management about China and Latin America: Bibliometric insights using Google Scholar, Dimensions and Microsoft Academic. *The Chinese Economy*, 15–19. <https://arxiv.org/ftp/arxiv/papers/2104/2104.06437.pdf>
- Elango, B., & Bornmann, L. (2021). Letter. New Google Scholar section with information on funded publications. *El Profesional de la información*, 30(3), 1–7.
- Gandhigram Rural Institute–Google Scholar Profile [Internet]. (2021). <https://scholar.google.com/citations?user=NnHr3NoAAAAJ&hl=en>
- Google Scholar [Internet]. (2021). [Scholar.google.com. https://scholar.google.com/intl/en/scholar/about.html](https://scholar.google.com/intl/en/scholar/about.html)
- Haddaway, N., Collins, A., Coughlin, D., & Kirk, S. (2015). The role of Google Scholar in evidence reviews and its applicability to grey literature searching. *PLOS ONE*, 10(9), 1–17.
- Kousha, K., & Thelwall, M. (2007). Google Scholar citations and Google Web/URL citations: A multi-discipline exploratory analysis. *Journal of the American Society for Information Science and Technology*, 58(7), 1055–1065.

- Kulkarni, A. (2009). Comparisons of citations in Web of Science, Scopus, and Google Scholar for articles published in general medical journals. *JAMA*, *302*(10), 1092–1096.
- Lewandowski, D. (2010). Google Scholar as a tool for discovering journal articles in library and information science. *Online Information Review*, *34*(2), 250–262.
- Martín-Martín, A., Thelwall, M., Orduna-Malea, E., & Delgado López-Cózar, E. (2020). Google Scholar, Microsoft Academic, Scopus, Dimensions, Web of Science, and OpenCitations' COCI: A multidisciplinary comparison of coverage via citations. *Scientometrics*, *126*(1), 871–906.
- Mingers, J., O'Hanley, J., & Okunola, M. (2017). Using Google Scholar institutional level data to evaluate the quality of university research. *Scientometrics*, *113*(3), 1627–1643.
- Orduña-Malea, E., Ayllón, J., Martín-Martín, A., & Delgado López-Cózar, E. (2017). The lost academic home: Institutional affiliation links in Google Scholar citations. *Online Information Review*, *41*(6), 762–781.
- Pölonen, J., & Hammarfelt, B. (2020). Historical bibliometrics using Google Scholar: The case of Roman Law, 1727–2016. *Journal of Data and Information Science*, *5*(3), 18–32.
- Tamizhchelvan, M., & Dhanavandan, S. (2015). Analysis of the publications of the Gandhigram Rural Institute: A bibliometric study. *SRELS Journal of Information Management*, *52*(6).
- The Gandhigram Rural Institute-Deemed University [Internet]. (n.d.). Ruraluniv.ac.in. <https://www.ruraluniv.ac.in/>
- Thoma, B., & Chan, T. (2019). Using Google Scholar to track the scholarly output of research groups. *Perspectives on Medical Education*, *8*(3), 201–205.
- Zientek, L., Werner, J., Campuzano, M., & Nimon, K. (2018). The use of Google Scholar for research and research dissemination. *New Horizons in Adult Education and Human Resource Development*, *30*(1), 39–46.

# Key Factors Affecting Efficiency of Private and Public Sector Bank: Analytical Study

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## Abstract

The foundation of every nation's economic structure is made up of financial institutions. It consists financial institutions such as banks, credit societies, asset management companies, insurance firms and mortgage lenders. They assist the economy expand by giving their clients financial support and services. One of the key factors in the growth of the national economy is seen as being banks. The current study examines the financial results of the nation's public and private sector banks in order to comprehend how well the bank makes financial decisions. Moreover, to identify the various factors that affect the bank's financial stability. The research instrument used is capital adequacy, asset quality, management capability, earnings capacity and liquidity model and t-test. It can be concluded that public sector banks need to focus on strategic decisions for sustaining in the competition with private sector banks. They require to be more professional as like private players in the banking business.

## Keywords

Adequacy, capital, efficiency, financial, performance management, quality

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## List of Abbreviations

RBI	Reserve Bank of India
SBI	State Bank of India
ICICI Bank	Industrial Credit and Investment Corporation of India Bank
CAMELS	Capital adequacy, asset quality, management efficiency, earning quality, liquidity and sensitivity
NPA	Non-performing assets

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## **Introduction**

The foundation of every nation's economic structure is made up of financial institutions. It consists financial institutions such as banks, credit societies, asset management companies, insurance firms and mortgage lenders. They assist the economy expand by giving their users financial support and services. It is believed that banks have had a significant role in the expansion of the national economy. The banking sector includes a variety of banks, such as central banks, commercial banks, cooperative banks and specialty banks. They meet the financial needs of the state, businesses and the general public. The central bank of the country has authority over all banks. These banks are required to abide by all rules and regulations established by the central bank. The central bank plays a critical role in preserving the country's monetary and price stability. It makes several recommendations in this regard for capital requirements, lending standards and reserve needs. The Reserve Bank of India (RBI), the central bank, established a number of policies in India, including minimum standards for capital adequacy, provisions for non-performing assets (NPAs), disclosure requirements, process streamlining, adherence to accounting standards and the transparency of financial statements. In order to align their operations with these criteria, banks re-evaluated their goals, plans, regulations and other procedures that directly impact the health and performance of the bank's finances. The banks must not only adopt the aforementioned actions but also enhance their financial performance in order to remain competitive. The current study examines the financial results of the nation's public and private sector banks in order to comprehend how well the bank makes financial decisions, as well as to identify the various factors that affect the bank's financial stability.

## **Literature Review**

To comprehend the various dimensions of the studies undertaken by various authors, the literature on the performance measurement of financial institutions is studied.

A variety of analyses were presented by Dincer et al. (2011) utilising the CAMELS grading system, which was developed for the Turkish banking sector. The CAMELS approach was mentioned as a type of financial evaluation used to examine banks' managerial and financial efficiency in order to ascertain their viability and health. Muhammet et al. (2003) talked about the financial performance index for commercial banks. This index makes it simpler to understand how scale and ownership impact bank behaviour. It also shows the effects of financial liberalisation, international migration and the effects of the financial crisis. In this study, financial ratios were employed among other things to reduce inflation-related biases. Angela and Alina (2013) discussed the assessment of the commercial banks in Romania for their financial soundness. With the aim of showcasing their soundness through a few sample indicators that capture the fundamental notions of the six CAMELS framework features, they selected 15 Romanian banking institutions. It appears that each of the selected banks has sufficient capital and is better prepared to sustain any losses as a result of the activity being done. Rehana and Irum (2012) discussed the success of Islamic banks in Pakistan as well as the



challenges they confront. Based on their data, the authors came to the conclusion that Islamic banks had high asset quality and adequate capital compared to Islamic branches of conventional banks and conventional banks. The performance indicators of Islamic banking in Pakistan are distinct from those found in similar research studies undertaken in other parts of the world. Baral (2005) emphasised that the financial stability of joint venture banks is just fair and insufficient to withstand possibly significant shocks to their balance sheet. The analysis in this study is solely built upon the CAMELS framework. According to the report, public sector banks must continue to satisfy the NRB's capital sufficiency standards. In their study, Mishra et al. (2012) looked at the diverse aspects of convergence and soundness in the Indian banking sector. The banks in the private sector were found to perform the best in terms of soundness at the top of the ranking. Public sector banks such as Union Bank and SBI, in contrast, have lagged and have weak economic soundness. The CAMEL model was used by Siti and Hafiza (2015) to evaluate the efficiency of the Malaysian banking sector. It was recommended that Malaysian banks should enhance their business acumen by reducing interest rates. They must regularly monitor the financial health and capability of borrowers in order to lower the risk of non-performing loans. State Bank of India needs to improve the quality of its assets, the efficiency of its management and its liquidity, assert Jaspreet et al. (2015). Punjab National Bank has to improve its liquidity and asset quality. Bank of India should focus on capital adequacy and earning quality. According to the study's results, Bank of Baroda is the market leader in each CAMEL component, followed by Punjab National Bank in terms of capital adequacy, managerial efficiency and earning capacity, and Bank of India in terms of asset quality. Sangmi et al. (2010) attempted to evaluate the financial health of the two main banks operating in northern India in their article. This study was carried out using the most recent financial analysis model, CAMEL parameters. This model shows that the studied banks' situations are strong and adequate in terms of capital adequacy, asset quality, management competence and liquidity. As a result, it is important to keep the right balance between liquid and non-liquid assets. No one CAMEL factor, according to Dzeawuni and Tanko (2008), is sufficient to accurately represent a bank's total performance. The regulators of banks are urged, among other things, to evaluate bank performance using the best recognised ratios from CAMEL. The results of the Mihir and Annyesha (2009) study showed that, for the majority of the CAMELS variables, private and foreign banks performed better than public sector banks over the study period. If public sector banks want to compete with private/foreign banks, the study's findings indicate that they must swiftly adapt to changing market conditions. Golam (2014) attempted to evaluate the financial standing of the two biggest banks doing business in Bangladesh in this study. This evaluation has been carried out using CAMEL parameters. Regarding their liquidity, asset quality, managerial capability and capital sufficiency, it is underlined that the banks included in the analysis are in a sound and adequate position. Echeckoba et al. (2014) used CAMEL to conduct research to evaluate the profitability of Nigerian banks. It was found that while liquidity had a significant impact on bank profitability in Nigeria, capital sufficiency, asset quality, management effectiveness and earnings had minimal effects.

## Methodology

### Sample of the Study

Considering the contribution made by banks in changing the economic outlook in India, particularly with regard to lending, deposits, employment of employees, branch network and other factors. The researcher has chosen one bank from the public and private sectors for the investigation.

*Public sector bank:* State Bank of India

*Private sector bank:* Industrial Credit and Investment Corporation of India bank.

### Profile of Public and Private Sector Banks

*Public sector bank:* State Bank of India (SBI) accounts for 23% of all market assets in the country. It is India's largest public sector bank, with a market value of almost 3.7 trillion Indian rupees as of June 2021. It maintains the largest branch network in the world while providing a wide range of financial products to its clients. In addition to having over 50 branch offices in 30 different countries, SBI also has seven foreign subsidiaries in the US, Canada, Nepal, Bhutan, Nigeria, Mauritius and the UK. The Indian government has included SBI in its goals for developing the country's infrastructure, agriculture and industry; but, since competition was brought into the country's commercial banking sector, SBI has been obliged to reform its operations. On the Fortune Global 500 list of the biggest businesses in the world in 2021, the State Bank of India was ranked number 221. Additionally, it was recognised as India's largest bank and twice as the Best Transaction Bank in India by 'The Asian Banker'.

*Private sector bank:* When speaking of the largest private sector bank in India in terms of total assets, the name of Industrial Credit and Investment Corporation of India (ICICI) bank quickly comes to mind. It is India's largest private sector bank, with a market value of almost 4.5 trillion Indian rupees as of June 2021. In terms of assets and market capitalisation, ICICI Bank is the second-largest private sector bank in the country. In India now, ICICI Bank operates a network of 14,040 ATMs and 5,288 branches. It has brand recognition in 17 different countries. In addition to having branches in the USA, China, South Africa, Bahrain, Singapore, Qatar, Hong Kong and Oman, it also has subsidiaries in the UK and Canada. Additionally, it has affiliates in Canada and the UK. Other nations where ICICI Bank keeps representative offices include Bangladesh, Malaysia, Indonesia and the United Arab Emirates. Its UK subsidiary has branches in Belgium and Germany.

### Study Period

The most of the study's secondary data come from SBI and ICICI Bank annual reports, which cover the five fiscal years ending on 31 March 2017 to 31 March 2021.

### *Tool Adopted in this Research*

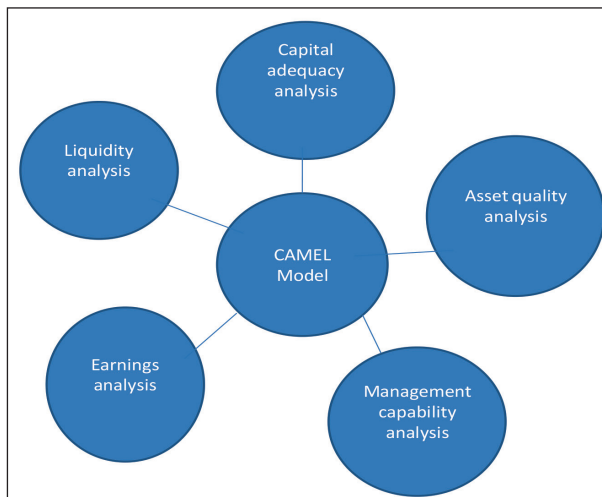
The research instrument used in the current study is the CAMELS model, which uses a number of ratios and is recognised as a key model in the area of assessing the financial performance of banks. The statistical tool known as the *t*-test is also used for further analysis and hypothesis testing.

### *Statement of Hypotheses*

- $H_1$ : There is no significant difference in capital adequacy of public and private sector banks.
- $H_2$ : There is no significant difference in asset quality of public and private sector bank.
- $H_3$ : There is no significant difference in management efficiency of public and private sector bank.
- $H_4$ : There is no significant difference in earning quality of public and private sector bank.
- $H_5$ : There is no significant difference in liquidity of public and private sector bank.

### *CAMEL Parameters*

Since 1995, the Executive Director of Reserve Bank of India, Mr. Padmanabhan, has recommended using CAMEL parameters in India. This method rates banks based on five crucial factors: capital sufficiency, asset quality, managerial ability, earning potential and liquidity.



**Figure 1.** CAMEL Parameters.

*Capital adequacy analysis:* A measure of capital sufficiency is the ratio of capital to risk-weighted assets. Trust among depositors in the bank is increased by a high capital adequacy ratio. The amount of capital a bank reflects its internal tenacity, which would be useful in times of crisis. The Reserve Bank of India (RBI) issued a directive in 1992 mandating all Indian banks to abide by the capital adequacy criterion of 9%, which was set based on the recommendations of the Basel Committee, in recognition of the importance of capital adequacy. Maintaining the confidence of its depositors and avoiding insolvency are essential for a bank. Their capital sufficiency reflects both the banks' overall financial health and management's ability to issue additional capital. It demonstrates the bank's ability to handle unforeseen losses with capital as well. Leverage among banks is shown by the capital adequacy ratio.

*Assets quality analysis:* It takes into consideration the proportion of bank loans that are NPAs (non-performing assets). A greater NPA suggests that the quality of the loans supplied to banks is weaker, which is bad for the bank. Another crucial factor in determining a bank's success under the Reserve Bank of India's rules is asset quality, which is the standard of its advances.

*Management efficiency ratios:* Management effectiveness is a key component of the CAMEL model that ensures a bank's survival and growth. The ratios in this sector account for subjective evaluations and managerial performance. The management of the bank makes crucial decisions based on how they view the risk.

*Earnings quality ratios:* An institution's profitability is a direct reflection of the reliability and calibre of its earnings. In essence, it determines how profitable the bank is. Additionally, it covers how future earnings growth will be sustainable. This trait has greater significance in light of the assertion that non-core activities including investments, treasury operations and corporate consultancy services account for a sizable amount of a bank's revenue.

*Liquidity ratios:* Liquidity is essential for any organisation that deals with money. Liquidity, which measures a bank's ability to meet its financial obligations. For a bank, maintaining the right level of liquidity is essential because doing otherwise would lead to lower profitability. Banks must be sufficiently cautious while hedging liquidity risk and make sure that a sizeable amount of funds are invested in higher return-generating projects in order to generate profit while also providing liquidity to depositors.

In addition to above, sensitivity is one more parameter help to measures an institution's sensitivity to market risks. Sensitivity reflects the degree to which earnings are affected by interest rates, exchange rates and commodity prices, all of which can be expressed by beta factor.

## Results

Tables 1 and 2 present the capital adequacy ratios of SBI and ICICI Bank. The mean of capital adequacy ratio of the SBI is 13.09% while ICICI Bank records

**Table 1.** Capital Adequacy Ratios of SBI.

Capital Adequacy Ratio	2021	2020	2019	2018	2017	Mean
Capital adequacy ratio	13.74	13.13	12.72	12.6	13.11	13.06
Total debt/owners equity	17.8	17.08	16.89	15.79	15.08	16.53

**Source:** Compiled from the annual reports of SBI.

**Table 2.** Capital Adequacy Ratios of ICICI Bank.

Capital Adequacy Ratio	2021	2020	2019	2018	2017	Mean
Capital adequacy ratio	19.12	16.11	16.89	18.42	17.39	17.59
Total debt/owners equity	7.09	8.24	7.77	7.28	6.58	7.39

**Source:** Compiled from the annual reports of ICICI Bank.

**Table 3.** Assets Quality Ratios of SBI.

Assets Quality Ratios	2021	2020	2019	2018	2017	Mean
Net NPA/advances (%)	1.5	2.23	3.01	5.73	3.71	3.24
Return on assets ratio (%)	0.45	0.36	0.02	-0.18	0.38	0.21
Total loan to total assets (%)	54.02	58.85	59.38	56.01	58.06	57.26
Provision coverage ratio (%)	87.75	83.62	78.73	66.00	62.00	76.00
Slippage ratio	1.20	2.5	1.6	4.85	5.78	3.19

**Source:** Compiled from the annual reports of SBI.

**Table 4.** Assets Quality Ratios of ICICI Bank.

Assets Quality Ratios	2021	2020	2019	2018	2017	Mean
Net NPA/advances (%)	1.24	1.54	2.29	5.43	5.43	3.19
Return on assets ratio (%)	1.42	0.81	0.39	0.87	1.35	0.97
Total loan to total assets (%)	59.63	58.75	60.83	58.28	60.15	59.53
Provision coverage ratio (%)	77.70	75.60	70.60	47.70	40.20	62.36
Slippage ratio	2.50	2.10	1.80	5.60	7.50	3.90

**Source:** Compiled from the annual reports of ICICI Bank.

17.59%. Both banks have kept their capital adequacy ratios above the minimum standards set by Basel II and Basel III.

The ratio of total debt to owners' equity can be used to determine how much debt is being used to finance its assets. The average debt-to-equity ratio of SBI is larger than that of ICICI Bank. It is 7.39% in the case of ICICI Bank and 16.53% in the case of SBI.

Tables 3 and 4 provide the asset quality ratios for SBI and ICICI Bank, respectively. The ratio of net NPA to net advances provides information about the bank's asset quality. The average ratio for both institutions exceeds 3%.

**Table 5.** Management Efficiency Ratios of SBI.

Management Efficiency Ratios	2021	2020	2019	2018	2017	Mean
Operating expenses/total assets	1.61	1.44	1.48	1.76	1.3	1.52
Net interest income/total assets	6.4	6.47	6.62	6.26	6.56	6.46
Return on net worth	8.86	6.95	0.39	-3.37	6.69	3.90
Profit per employee (in million)	0.8284	0.579	0.0334	-0.2433	0.5111	0.34
Business per employee (in million)	237.3	210.5	187.7	167	162.4	192.98
Cost to income (%)	43.34	42.57	44.68	47.52	41.15	43.85

**Source:** Compiled from the annual reports of SBI.

**Table 6.** Management Efficiency Ratios of ICICI Bank.

Management Efficiency Ratios	2021	2020	2019	2018	2017	Mean
Operating expenses/total assets	1.75	1.96	1.87	1.78	1.91	1.85
Net interest income/total assets	6.43	6.8	6.57	6.25	7.01	6.61
Return on net worth	11.21	6.99	3.19	6.63	10.11	7.63
Profit per employee (in million)	1.7	0.8	0.4	0.8	1.2	0.98
Business per employee (in million)	149.2	127.5	122.2	107.8	98.9	121.12
Cost to income (%)	37.2	43.5	43.56	38.83	35.78	39.77

**Source:** Compiled from the annual reports of ICICI Bank.

The mean return on asset ratios for SBI and ICICI Bank are 0.21% and 0.97%, respectively. The ratio of total loans to total assets calculates the proportion of total assets taken up by outstanding loans. The average ratio of ICICI Bank's total loans to total assets is higher than SBI's. The mean of provision coverage ratio shows that the SBI has maintained 76% which is good when compared with 62.36% of ICICI Bank. The average of slippage ratio is 3.19 of SBI and 3.90 recorded by ICICI Bank.

The management efficiency ratios of SBI and ICICI Bank are shown in Tables 5 and 6, respectively. SBI and ICICI Bank have average operating expenses to total assets ratios of 1.52% and 1.85%, respectively. The net income earned on assets that generate income is explained by the ratio of net interest income to total assets. Both banks made an effort to keep the ratio of net interest revenue to total assets at or above 6%. SBI's mean return on net worth ratio is 3.90%, whereas ICICI Bank's is 7.63%.

**Table 7.** Earnings Quality Ratios of SBI.

Earnings Quality Ratios	2021	2020	2019	2018	2017	Mean
Operating profit to working funds	1.6	1.71	1.49	1.72	1.99	1.70
Interest income to working funds	5.93	6.45	6.55	6.37	6.86	6.43
Non-interest income to working funds	0.97	1.13	0.99	1.29	1.39	1.15
Net interest margin	2.44	2.48	2.4	2.16	2.28	2.35

**Source:** Compiled from the annual reports of SBI.

Profit per employee expressed in million shows how well management generates profits; SBI and ICICI Bank have very different average profit per employee figures.

The amounts are 0.34 million and 0.98 million, respectively, from SBI and ICICI Bank. However, SBI has a greater mean of volume of business per employee than ICICI Bank. SBI and ICICI Bank, respectively, reported 192.98 million and 121.12 million. SBI displays a mean of cost-to-income ratio of 43.85%, whereas ICICI kept it at 39.77%. Tables 7 and 8 exhibit the information concerning earning quality ratios of SBI and ICICI Banks.

A number of ratios were used to assess the earning quality of a bank. The ratio of operational profit to working capital reflects the bank's profitability at the operating level. SBI's average operating profit to working capital ratio is 1.70%, whereas ICICI Bank reported a 3.12% ratio. In comparison to SBI, the mean of interest income to working capital ratio is higher at ICICI Bank by 0.86%. The ratio of non-interest revenue to working capital represents the revenue the bank receives from other sources, namely commission, brokerage and gains from asset revaluations; however, core income from interest in the form of NII is almost the same for both banks in the relevant period. The difference between interest received on loans and interest paid on deposits is shown by the net interest margin ratio. The average net interest margin ratio between ICICI Banks and SBI differs by 1.11.

Tables 9 and 10 present data on SBI and ICICI Bank's liquidity ratios. SBI shows a mean of loan-to-deposit ratio 73.96%, whereas ICICI Bank displays 89.92%. The average cash and equivalent to total assets ratio for SBI and ICICI Bank, respectively, is 6.37% and 9.88%. The average cash and equivalent to total deposit ratio for ICICI Bank is 6.46% higher than that of SBI. The mean of deposit-to-total asset ratio for SBI and ICICI Banks is 79.24% and 68.0%, respectively. Comparison between mean of CASA ratio of SBI is 44.64% while ICICI Bank depicts 48.61%.

Table 11 depicts sensitivity of SBI and ICICI Bank through mean of beta of SBI is 1.74 while ICICI Bank records 1.42.

**Table 8.** Earnings Quality Ratios of ICICI Bank.

Earnings Quality Ratios	2021	2020	2019	2018	2017	Mean
Operating profit to working funds	3.2	2.88	2.72	3.18	3.64	3.12
Interest income to working funds	6.95	7.68	7.35	7.06	7.43	7.29
Non-interest income to working funds	1.67	1.69	1.68	2.24	2.68	1.99
Net interest margin	3.69	3.73	3.42	3.23	3.25	3.46

**Source:** Compiled from the annual reports of ICICI Bank.

**Table 9.** Liquidity Ratios of SBI.

Liquidity Ratios	2021	2020	2019	2018	2017	Mean
Loan to deposit	68.97	73.32	73.35	73.79	80.38	73.96
Cash and equivalent/total assets	7.57	6.35	6.04	5.55	6.36	6.37
Cash and equivalent/total deposits	9.32	7.75	7.64	7.09	8.41	8.04
Deposits to total assets	81.19	82.04	79.09	78.34	75.56	79.24
Current account savings account (CASA) ratio	45.39	44.22	44.56	44.48	44.57	44.64

**Source:** Compiled from the annual reports of SBI.

**Table 10.** Liquidity Ratios of ICICI Bank.

Liquidity Ratios	2021	2020	2019	2018	2017	Mean
Loan to deposit	80.95	86.52	90.54	92.92	98.69	89.92
Cash and equivalent/total assets	10.82	10.85	8.33	9.57	9.81	9.88
Cash and equivalent/total deposits	14.28	15.46	12.30	15.00	15.45	14.50
Deposits to total assets	75.79	70.19	67.70	63.81	63.49	68.20
Current account savings account (CASA) ratio	46.28	45.11	49.61	51.68	50.36	48.61

**Source:** Compiled from the annual reports of ICICI Bank.

**Table 11.** Sensitivity Analysis of SBI and ICICI Bank.

Sensitivity	2021	2020	2019	2018	2017	Mean
Beta (SBI)	0.809	1.468	1.623	2.494	2.3	1.74
Beta (ICICI Bank)	1.112	1.256	0.985	1.896	1.872	1.42

### Hypothesis Testing

$H_1$ : There is no significant difference in capital adequacy of public and private sector banks.

Table 12 displays the findings of a *t*-test examination of the capital adequacy ratios of SBI and ICICI Banks. The capital adequacy ratio has a *t*-statistic value of



**Table 12.** Analysis of Capital Adequacy Ratios *t*-Test: Two-sample Assuming Equal Variances.

Particulars	Capital Adequacy Ratio		Total Debt to Owners Equity Ratio	
	SBI	ICICI Bank	SBI	ICICI Bank
Mean	13.06	17.59	16.53	7.39
Variance	0.20	1.44	1.17	0.41
Observations	5	5	5	5
<i>df</i>	8		8	
<i>t</i> Stat	-7.91051		16.25201	
<i>P</i> ( <i>T</i> ≤ <i>t</i> ) one-tail	.00002		.00000	
<i>t</i> critical one-tail	1.85955		1.85955	
<i>P</i> ( <i>T</i> ≤ <i>t</i> ) two-tail	.00005		.00000	
<i>t</i> critical two-tail	2.30600		2.30600	

-7.91051, but the crucial *t* value is less. It indicates the capital adequacy ratios of SBI and ICICI Bank differ significantly. The *t*-statistic for the total debt to owner equity ratio is 16.25201, which is lower than the *t*-statistic value. It shows significant difference between SBI and ICICI Bank's total debt to owner equity ratio. Thus, *t*-test results at the 5% level of significance shows that the null hypothesis is rejected and the alternative hypothesis is accepted.

$H_2$ : There is no significant difference in asset quality of public and private sector bank.

In Table 13, an analysis of asset quality ratio is shown. It demonstrates that the *t* value, statistic's which is smaller than the crucial value, is 0.04234. It shows there is no significant difference between SBI and ICICI Bank's net NPA to net advances ratio.

The return on asset ratio's *t*-statistic value is ≤3.38083, is higher than the threshold *t* value, and indicates return on asset ratios of SBI and ICICI Bank differ significantly. While in case of total loan to total asset ratio, provision coverage ratio and slippage ratio the calculated *t* value is less than critical value of *t*. As a result, at the 5% level of significance the null hypothesis is accepted in cases when four ratios reflect the asset quality, with the exception of the return on asset ratio and the alternative hypothesis is rejected. Therefore, there is no significant difference in the asset quality of public and private sector banks.

$H_3$ : There is no significant difference in management efficiency of public and private sector bank.

Table 14a demonstrates the *t*-test outcome for management efficiency ratios. The *t*-statistic value is greater than the *t*-critical threshold, shows operating expenses to total asset ratio of SBI and ICICI Bank differs significantly. The *t*-statistic value for net interest income to total asset ratio and return on net worth ratio, is below

**Table 13.** Analysis of Asset Quality Ratios t-Test: Two-sample Assuming Equal Variances.

Particulars	Net NPA to Net Advances Ratio		Return on Assets Ratio		Total Loan to Total Assets Ratio		Provision Coverage Ratio		Slippage Ratio	
	SBI	ICICI Bank	SBI	ICICI Bank	SBI	ICICI Bank	SBI	ICICI Bank	SBI	ICICI Bank
Mean	3.24	3.19	0.21	0.97	57.26	59.53	75.62	62.36	3.19	3.90
Variance	2.63	4.34	0.07	0.18	4.93	1.06	124.71	296.12	4.11	6.37
Observations	5	5	5	5	5	5	5	5	5	5
Df	8		8		8		8		8	
t Stat	0.04234		-3.38083		-2.06821		1.44534		-0.49337	
P(T≤t) one-tail	.48363		.00481		.03621		.09318		.31751	
t critical one-tail	1.85955		1.85955		1.85955		1.85955		1.85955	
P(T≤t) two-tail	.96727		.00963		.07243		.18637		.63501	
t critical two-tail	2.30600		2.30600		2.30600		2.30600		2.30600	

the crucial value. As a result, it can be concluded that there is no significant difference between SBI and ICICI Bank's net interest income to total asset ratio and return on net worth ratio.

It is clear from Table 14b that the  $p$  value is higher than the alpha level:  $p > .05$ . It can be claimed that there is no appreciable difference between SBI and ICICI Bank's profit per employee. The difference between the business per employee of SBI and ICICI Bank is indicated as the business per employee  $p$  value is smaller than the alpha level. SBI and ICICI Bank's cost-to-income ratios show no difference because their  $p$  values are higher than their alpha levels.

Out of six, three ratios show a significant difference between SBI and ICICI Bank's managerial effectiveness. Like the cost-to-income ratio, business per employee and the operational expense to total asset ratio. While the ratio of net interest revenue to total assets, return on net worth and profit per employee all indicate that there is no appreciable difference between public and private sector banks in terms of management effectiveness.

$H_4$ : There is no significant difference in earning quality of public and private sector bank.

The examination of the earning quality ratios for SBI and ICICI Banks is shown in Table 15. The operational profit to working funds ratio of both banks differs significantly, as indicated by the  $t$ -statistic value being more than the critical value of  $t$ .

The  $t$ -test indicates a significant difference between the interest income to working funds ratios of the SBI and ICICI Banks because the  $t$ -statistic value is greater than the critical value of  $t$ . Because the crucial value of  $t$  is less than the  $t$ -statistic value, the ratio of non-interest revenue to working capital differs significantly between SBI and ICICI Banks. At an alpha level of .05 the estimated  $t$ -value exceeds the table value. The  $p$ -value is less than the alpha level:  $p < .05$ . The alpha level is less than the  $p$  value. Therefore, it is possible to conclude that SBI and ICICI Banks' net interest margins differ from one another.

Thus, it may be concluded from the study of numerous ratios relating to earning quality that, at a 5% level of significance, the null hypothesis is rejected and the alternative hypothesis is accepted. The earning quality of public and private sector banks differs significantly.

$H_5$ : There is no significant difference in liquidity of public and private sector bank.

At an alpha level of .05 the estimated  $t$ -value exceeds the table value. The  $p$ -value is less than the alpha level:  $p < .05$ . Table 16 presents the results of the SBI and ICICI Bank's liquidity ratio  $t$  tests. The  $t$ -statistic value is greater than the  $t$ -critical value. It shows that the loan to deposit ratios of both banks differ significantly. The  $t$ -statistic value of cash and equivalent to total assets ratio and cash and equivalent to total deposit ratio is higher than the crucial value of  $t$ . It indicates that SBI and ICICI Bank have significantly different cash and equivalent to total assets ratio and cash and equivalent to total deposit ratio.

**Table 14a.** Analysis of Management Efficiency Ratios t-Test: Two-sample Assuming Equal Variances.

Particulars	Operating Expenses to Total Assets Ratio		Net Interest Income to Total Assets Ratio		Return on Net Worth Ratio	
	SBI	ICICI Bank	SBI	ICICI Bank	SBI	ICICI Bank
Mean	1.52	1.85	6.46	6.61	3.90	7.63
Variance	0.03	0.01	0.02	0.09	26.72	10.02
Observations	5	5	5	5	5	5
df	8		8		8	
t Stat	-3.84157		-1.01250		-1.37311	
P(T≤t) one-tail	.00247		.17047		.10349	
t critical one-tail	1.85955		1.85955		1.85955	
P(T≤t) two-tail	.00494		.34094		.20697	
t critical two-tail	2.30600		2.30600		2.30600	

**Table 14b.** Analysis of Management Efficiency Ratios t-Test: Two-sample Assuming Equal Variances.

Particulars	Profit per Employee		Business per Employee		Cost-to-income Ratio	
	SBI	ICICI Bank	SBI	ICICI Bank	SBI	ICICI Bank
Mean	0.34	0.98	192.98	121.12	43.85	39.77
Variance	0.19	0.24	977.30	375.38	5.84	12.92
Observations	5	5	5	5	5	5
df	8		8		8	
t Stat	-2.17200		4.36894		2.10542	
P(T≤t) one-tail	.03081		.00119		.03418	
t critical one-tail	1.85955		1.85955		1.85955	
P(T≤t) two-tail	.06163		.00238		.06836	
t critical two-tail	2.30600		2.30600		2.30600	

**Table 15.** Analysis of Earnings Quality Ratios  $t$ -Test: Two-sample Assuming Equal Variances.

Particulars	Operating Profit to Working Funds Ratio		Interest Income to Working Funds Ratio		Non-interest Income to Working Funds Ratio		Net Interest Margin	
	SBI	ICICI Bank	SBI	ICICI Bank	SBI	ICICI Bank	SBI	ICICI Bank
Mean	1.70	3.12	6.43	7.29	1.15	1.99	2.35	3.46
Variance	0.03	0.12	0.11	0.09	0.03	0.21	0.02	0.06
Observations	5	5	5	5	5	5	5	5
df	8	8	8	8	8	8	8	8
$t$ Stat	-7.97042		-4.31810		-3.81976		-9.19040	
$P(T \leq t)$ one-tail	.00002		.00128		.00255		.00001	
$t$ critical one-tail	1.85955		1.85955		1.85955		1.85955	
$P(T \leq t)$ two-tail	.00004		.00255		.00509		.00002	
$t$ critical two-tail	2.30600		2.30600		2.30600		2.30600	

At an alpha level of .05 the estimated  $t$  value exceeds the table value. The  $p$  value is .05. The alpha level is less than the  $p$  value. Therefore, it may be concluded that the deposit-to-total asset ratios of SBI and ICICI Banks differ. Thus, it may be concluded that the alternative hypothesis is accepted at a 5% level of significance and the null hypothesis is rejected. The liquidity of banks in the public and private sectors differs significantly.

## **Discussion**

According to the analysis, banks in both the public and private sectors are financially viable due to the adoption of responsible money management practices. Both banks have kept their capital adequacy ratios substantially over Basel III's 9% minimum requirement. In comparison to ICICI Bank, the SBI uses debt to finance more of its assets. Asset quality ratios show that the SBI and ICICI Banks' asset quality is good. When compared to SBI, the ICICI Bank continuously works to reduce its NPA relative to advances, and the return on asset ratio is important since it shows how efficiently assets are being used. While speaking about provision coverage ratio and slippage ratio both the banks tried to improve it consistently during study period.

The management efficiency ratio shows how effectively management makes choices and runs the company, which either directly or indirectly aids in the expansion of the bank. Nearly all ratios assessed for both banks, with the exception of business per employee, show progress; however, ratios for ICICI Bank demonstrate higher managerial efficiency when compared to SBI during the study period. A number of ratios, including interest income to total income, return on asset, operating profit to working capital, interest income to working capital, non-interest income to working capital and net interest margin, are used to evaluate the earning quality of SBI and ICICI Banks. All the ratios indicate that, when compared to SBI, ICICI Bank reported good earning quality.

According to liquidity ratios, ICICI Bank's short-term liquidity position is better than SBI's. While deposits and investments in government securities as a percentage of total assets are higher for SBI than ICICI.

Further evidence from the hypothesis testing shows that there are significant differences between SBI and ICICI Bank in terms of capital sufficiency, earning quality and liquidity. Some ratios, such as operating expenses to total assets, business per employee and cost-to-income ratio, show a significant variation in management efficiency; however, other parts of management efficiency ratios show no such difference between SBI and ICICI Bank.

Asset quality ratios show no appreciable variation between SBI and ICICI's assets.

Statistical tools employed for analysis with the available data demonstrate reasonable conclusions for the better performances of ICICI Bank on various scores.

**Table 16.** Analysis of Liquidity Ratios t-Test: Two-sample Assuming Equal Variances.

Particulars	Loan to Deposit Ratio		Cash and Equivalent to Total Assets Ratio		Cash and Equivalent to Total Deposits Ratio		Deposits to Total Assets Ratio		Current Account Savings Account (CASA) Ratio	
	SBI	ICICI Bank	SBI	ICICI Bank	SBI	ICICI Bank	SBI	ICICI Bank	SBI	ICICI Bank
Mean	73.96	89.92	6.37	9.88	8.04	14.50	79.24	68.20	44.64	48.61
Variance	16.73	44.58	0.55	1.08	0.73	1.74	6.49	25.81	0.19	7.79
Observations	5	5	5	5	5	5	5	5	5	5
df	8	8	8	8	8	8	8	8	8	8
t Stat	-4.55829		-6.12371		-9.18144		4.34654		-3.13666	
P(T≤t) one-tail	.00093		.00014		.00001		.00123		.00694	
t critical one-tail	1.85955		1.85955		1.85955		1.85955		1.85955	
P(T≤t) two-tail	.00185		.00028		.00002		.00246		.01387	
t critical two-tail	2.30600		2.30600		2.30600		2.30600		2.30600	

## Conclusion

According to the study's findings, when employing the CAMELS model to compare financial performance between private and public sector banks, the former performs better.

1. To compete with private sector banks and improve their performance in terms of earning quality and liquidity position, public sector banks must place a greater emphasis on strategic decisions. Even because they are employed by the government, they should make more of an effort to retain adequate capital and manage their assets. They must act more professionally, just as independent participants in the financial industry.
2. SBI will have to be alert about its asset quality while expanding its ever-increasing loan book size. NIM should be consistent.
3. Merger of other associate banks of SBI have only increased the challenges for this giant state-run bank on several fronts in banking business. Customer service has to improve significantly notwithstanding the application of fintech in a massive way.
4. Professionalism has certainly acquired priority in the past few years but state interference should be strictly avoided.
5. ICICI Bank has to certainly prune down on its high-risk investments and not just concentrate on returns as a trade-off for risk.

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## References

- Angela, R., & Alina, C. S. (2013). Analyzing the financial soundness of the commercial banks in Romania: An approach based on the CAMELS framework. *Procedia Economics and Finance*, 6(2013), 703–712. [https://doi.org/10.1016/S2212-5671\(13\)00192-5](https://doi.org/10.1016/S2212-5671(13)00192-5)
- Baral, K. J. (2005). Health check-up of commercial banks in the framework of CAMEL: A case study of joint venture banks in Nepal. *The Journal of Nepalese Business Studies*, 2(1), 41–55. <https://doi.org/10.3126/jnbs.v2i1.55>
- Dincer, H., Gulsah, G., Nazife, O., & Kevser, S. (2011). A performance evaluation of the Turkish banking sector. *Procedia Social and Behavioral Sciences*, 24, 1530–1545. <https://doi.org/10.1016/j.sbspro.2011.09.051>



- Dzeawuni, W. A., & Tanko, M. (2008). CAMELs and banks performance evaluation: The way forward. *SSRN*, 1–21. <https://dx.doi.org/10.2139/ssrn.1150968>
- Echekoba, F. E., Egbunike, C. F., & Ezu, G. K. (2014). Determinants of bank profitability in Nigeria: Using CAMEL rating model. *IOSR Journal of Business and Management*, 16(9), 44–50.
- Golam, M. (2014). Use of CAMEL model: A study on financial performance of selected commercial banks in Bangladesh. *Universal Journal of Accounting and Finance*, 2(5), 151–161. <https://doi.org/10.13189/ujaf.2014.020504>
- Jaspreet, K., Manpreet, K., & Simranjit, S. (2015). Financial performance analysis of selected public sector banks: A CAMEL model approach. *IJABER*, 13(6), 4327–4348. <https://www.researchgate.net/publication/301681152>
- Mihir, D., & Annyesha, D. (2009). A CAMELs analysis of the Indian banking industry. *SSRN*, 1–10. <http://dx.doi.org/10.2139/ssrn.1666900>
- Mishra, A. K., Harsha, G. S., Shivi, A., & Neil, R. D. (2012). Analyzing soundness in Indian banking: A CAMEL approach. *Research Journal of Management Sciences*, 1(3), 9–14. <http://isca.in/IJMS/Archive/v1/i3/2.ISCA-RJMS-2012-028.pdf>
- Mishra, S. K., & Aspal, P. K. (2012). A CAMEL model analysis of state bank group. *Proceedings of 19th International Business Research Conference 2012*. <https://ssrn.com/abstract=2177099>
- Muhammet, M., Arnold, R., Reha, Y., & Ahmet, B. E. (2003). The effect of scale and mode of ownership on the financial performance of the Turkish banking sector: Results of a DEA-based analysis. *Socio-economic Planning Sciences*, 37(2003), 185–202.
- Rehana, K., & Irum, S. (2012). Gauging the financial performance of banking sector using CAMEL model: Comparison of conventional, mixed and pure Islamic banks in Pakistan. *International Research Journal of Finance and Economics*, 82(2012), 68–88.
- Sangmi, M. & Nazir, T. (2010). Analyzing financial performance of commercial banks in India: Application of CAMEL model. *Pakistan Journal of Commerce and Social Sciences*, 4(1), 40–55. <https://www.econstor.eu/handle/10419/187999>
- Siti, N. M., & Hafiza, A. H. (2015). Using the CAMEL framework in assessing bank performance in Malaysia. *International Journal of Economics, Management and Accounting*, 23(1), 109–127. <https://www.researchgate.net/publication/279200285>

# High-frequency Trading and Stock Markets: Past, Present and the Road Ahead

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## Abstract

High-frequency trading (HFT) is one of the most significant recent developments in the financial markets. This study aims to assess the present status of HFT in stock markets in India and across the world to identify subjective areas that can be used for carrying out research in HFT in relation to stock markets operating in India. The study will help to bring out significant areas of research gap which can help to regulate the HFT without much impact on the retail investors by reducing the leveraging effect of the prices. With the use of major studies that have highest citations during the previous ten years in the area of HFT, the regulatory measures and their impact on HFT were found to be an interesting area of research that is left unexplored. This study on whole has provided clear synthesis of HFT and its impact on stock markets over the decade which has helped to identify significant areas of research related to Indian as well as world stock markets.

## Keywords

Algo trading, high-frequency trading, stock markets, volatility

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## Introduction

The high-frequency trading (HFT) has significantly replaced the traditional trading among the high-volume trades and impacts the prices of securities in all markets. This form of trading and its role in the volatility of the prices are scrutinised by the regulators across the world. The growth of technology has created a space for algorithms for making HFTs which has caused significant growth in the number of transactions as well as securities. The HFT has a significant impact on the turnover of the shares which results in increased market value of the shares and leads to significant financial crash in the market. The algorithmic trading (AT) is traced from its evolution and is energising itself with technology to pose significant growth in the near future. The trades are set off automatically based on algorithms which give lesser pressure on the transactions and higher rewards for the risk taken by the investors.

This trading form has caused vital crash in the financial markets which has led to several measures to regulate AT. The trading using the algorithms places orders based on the pre-determined values which can be attributed to significant returns. The usage of algorithms has significantly changed the pattern among the traders and it is causing significant noise in the regular market activities based on the leveraging effects. The number of firms dealing in the HFT has got considerable rise in the country and the growth of these companies reflects the need. The transactions are channelised through algorithms which most of the time enables the investors to return with lesser risk.

The study aims to assess the present status of HFT in stock markets in India and across the world to identify subjective areas that can be used for carrying out research in HFT in relation to stock markets operating in India. The study will help to bring out significant areas of research gap which can help to regulate the HFT without much impact on the retail investors by reducing the leveraging effect of the prices. The study has used major studies that have highest citations during the previous ten years in the area of HFT. This will help classify the areas that have significant presence of research carried out and identify various potential areas of research that can improve the knowledge towards the HFT. The research carried out so far in HFT can be discussed in the following structure.

## High-frequency Trading in Stock Market

In recent years, rapid technical advances, and their widespread use, notably in equities markets have fuelled the growth of HFT. A thorough knowledge of HFT's impacts, as well as the possible hazards and possibilities it may bring in terms of market performance such as volatility, liquidity, pricing efficiency, and price

discovery, are explored in this study. HFT and AT may have a number of positive benefits on markets, despite widely held unfavourable beliefs. However, under some conditions, this form of trading might lead to market instability. To resolve issues in the near term, well-chosen regulatory actions are required. Considering the many uncertainties and data gaps, further research is required to better inform long-term policy decisions as per the research stud (Linton & Mahmoodzadeh, 2018). Due to time priority rule, resources are allocated based on tick size when price competition is restricted. Three effects of speed competition are shown. The one single penny tick size has a greater impact on price competitiveness in lower-priced equities with a large market capitalisation.

With regards to both the financial and real sectors, these advances may have a detrimental influence because of distortions such as misinformation, market speculation, and increased volatility as transactions increase velocity (Baron et al., 2014). The performance and competitiveness of HFTs have a substantial influence on stock prices. Latency metrics demonstrate considerable differences in HFT trading performance, which are accounted for by relative delays. HFT firms benefit from increased latency rank because of colocation enhancements (Baron et al., 2014). Market creation and cross-market arbitrage require speed because of the short-lived information and risk management channels that it supplies.

When it comes to speed, it is all about comparison. For the quotation stuffing hypothesis (Biais et al., 2011) established support using NASDAQ channel assignment. According to Gai et al. (2013) classic definition, rivalry in velocity but not price causes externalities. HFT is either helpful or bad for the markets, according to experts.

The impact on the lowest tercile of stocks is the opposite of what one would expect from a rise in the average AT intensity (Ma & McGroarty, 2017). This article examines dark pools, which are stock trading platforms with no pre-trade transparency. Trading in dark pools has steadied at or below 10% and is consistent across stock groups from different countries. In major financial markets throughout the world, technical, institutional, and market trends have all adopted HFT trading, which leverages prices (Shafi et al., 2019). Both these incidents and the extent to which HFT tactics have been discovered on Asian regional stock exchanges exhibit some striking similarities (Kauffman et al., 2015). HFT and algorithm trading in Indian Stock Markets are based on Grounded Theory. HFT has also had an impact on financial market connections as a result of financialisation. The VIX Index, a measure of volatility derived from SPX option prices, has an inverse relationship with SPX option prices that most traders are unaware of. To better understand how index options interact with the high-order moment models that replicate their behaviour, this study is being conducted. Future theory development may benefit from an awareness of the logic vs. perception issue in option pricing theory (Shafi et al., 2019). Limit up Limit down rule (LULD) and HFT behaviour in connection to the price limit

are the subject of this research. This research investigates five different hypotheses, including trade interference, volatility spillovers, and delayed price discovery. On maker-taker markets, magnet effects and HFT function around a price restriction. In maker-taker and inverted markets, when a subset of sample stocks is moving above and below the \$3 barrier as prices approach their upper and lower limits. Although trading is disturbed, volatility is decreased in the near term without delaying the discovery of price. Due to the impending price limit, traders encounter a 'magnet effect'. There was a decrease in HFT trading activity on the maker-taker market following the trading halt, but no change on the inverted market (Lin, 2018).

In the trading market, traders make decisions depending on whether or not a particular phenomenon is widely recognised. Algorithms and HFT are familiar concepts to Indian traders. The current Indian market is hampered by AT and HFT (Chakervarti & Chaitanya, 2016). Investors now have additional alternatives because of technology advancements. As of 2010, the Tokyo Stock Market's Arrowhead trading platform had been established by the Tokyo Stock Exchange. HFQ has increased from 0% to 36% of trade activity on this platform in the last year. Extreme market circumstances coupled with HFQ might lead to systemic hazards, such as flash crashes. CoVaR and correlations can be used to mitigate the systemic hazards posed by HFQ, but circuit breakers and other limits should be applied to do so (Jain et al., 2016). HFTs and buy-side algorithmic traders (BSTs) use two different types of algorithmic trading tactics (BATs). Trading volumes between BATs and HFTs are quite comparable, although the BATs have a greater within-group similarity than do the HFTs. Similarity in directionality of execution metrics between groups is also apparent. BATs are more likely than HFTs to engage in contrarian trading behaviour, according to a new study. The existence of commonality and contrarian trading among ATs ensures market stability and price discovery in the market (Arumugam & Krishna Prasanna, 2021). Advances in technology and novel concepts have spurred global financialisation. Among the many technological advances developed to keep pace with the financial sector's rapid evolution and to reduce risk while increasing profit is AT. Despite the widespread use of AT, there is a lack of scientific research on the evidence of its efficacy. No evidence exists to support the assertion that AT and HFT definitions are interchangeable. An understanding of the impact of an ever-increasing number of financial transactions on the world economy must be based on evidence. AT, which we see as a component of financialisation, can be accurately described and identified in the Indian stocks market. There is a lot of interest in how financialisation's transaction velocity-symbolising AT influences prices (Dubey et al., 2017).

There is no correlation between foreign institutional investments (FIIs) and domestic institutional investments (DIIs) in India, based on the most recent high-frequency data (Iskandar, 2018).

HFT has a significant influence on Tehran Stock Exchange stock returns, causing market shockwaves. Because of the disparities in firm size, the HFT volume and returns for small and large businesses differ (Sarлак & Talei, 2016).

## **High-frequency Trading and Liquidity**

HFT has a significant influence on Tehran Stock Exchange stock returns, causing market shockwaves. The statistics basis includes all Tehran Stock Exchange companies that have traded in the stock market during the past two years. Some large and small companies have assets logarithms that are significantly different from the average. It is difficult to predict the direction of Tehran's stock market because of its non-linear dynamics and the HFT of significant enterprises. Because of these disparities in firm size, the HFT volume and returns for small and large businesses differ. High-frequency market makers are generally unable to offer stable liquidity as a result of these restrictions (Ait-Sahalia & Saalam, 2017). HFTs are expected to lower their liquidity provision as a result of volatility (Ait-Sahalia & Saalam, 2017). Liquidity is not affected in the same way by internationalisation in all companies and nations (Ma et al., 2016). There were potential repercussions on Bulgarian capital market when new EU rule targeting HFT is put into effect (Stefanova, 2018). Ethical standards are necessary to ensure fair and stable marketplaces in the financial sector (Dalko & Wang, 2018). According to some proponents, HFT is a net liquidity supplier, although this is not the case. HFT significantly affected spoofing and quote stuffing on the market (Wang et al., 2016). During instances of extreme high and low returns, illiquidity has a greater influence (Bhattacharya et al., 2022). In summary, ephemeral orders are not the cause of market illiquidity and so should not be characterised as 'spoofing' described under the Dodd-Frank Act (Li, 2018). A stochastic order-driven model with waiting has a major influence on order books that are diverse in nature.

For large-cap equities, there is a decrease in liquidity during the time when HFT activity is strong, but an increase for small-cap stocks (Wang et al., 2016). AT in the Indian equities market has been hindered by the usage of an orders-to-trades ratio charge. The second charge had little or no effect on the order-to-trades ratio or the quality of the market (Aggarwal et al., 2017). Market characteristics including trade time, tightness, depth and robustness may all be measured using liquidity as a metric, according to the literature (Hou et al., 2017).

Traditional market makers are unable to compete with high-frequency market makers in terms of speed and information (Ait-Sahalia & Saalam, 2017). During market collapses, market-aggregate margin trading has a far greater influence on selling and investor order submission tactics than individual margin trading (Hu et al., 2021).

Despite a more thorough analysis revealing that the new situation benefits only HFT, this macro phenomenon disappears in markets containing both institutional investors and HFT, leaving institutional investors even with increased trading expenses (Lachapelle et al., 2016). It is clear that machine-based liquidity provision markets have the potential for systemic instability, and our findings support regulators' worries (Raman et al., 2015).

## HFT and Volatility

The volatility of the market is significantly affected by the operation of HFT which is caused by AT. There are many who argue that it gives an opportunity for traders to calm down and make sensible judgments at times of high volatility in the market. Opponents downplay its importance, calling it a roadblock to a free market in price discovery. The calls for increased market regulation got stronger in the wake of the 2007–2008 Crisis and the 2010 Flash Crash. Because of this, it is doubtful that circuit breakers will go out of use (Sifat & Mohamad, 2019). During the V-shape bounce, there was an initial surge in selling, followed by a surge in purchasing. There were a lot of ups and downs in the market. As a consequence of this catastrophic occurrence, many people are left wondering what caused and aggravated the Flash Crash in the first place (Dalko, 2016). Sociological issues about the connection between investment businesses and society are impacted by illiquidity and dispersed execution (Pitluck, 2011). This publication is one of the first systematic assessments of theoretical and empirical research on the magnet effect as this new sub-discipline evolves (Sifat & Mohamad, 2020).

Market volatility, liquidity shocks and stock returns were found to have a direct correlation with the use of HFT. Faster trading and greater governance, as well as a lack of prohibitions on short sells, all have a role (Ma et al., 2018). There is new evidence that increased automated trading leads to lower intraday liquidity management and a decreased risk of extreme intraday price fluctuations (Aggarwal & Thomas, 2014). The HFT has significant impact on the stock market's volatility from a variety of angles. Volatility in the stock market and foreign commerce are mutually exclusive, since volatility decreases trade and exacerbates the country's current and capital account deficits (Bhowmik, 2013). The Securities and Exchange Board of India recently implemented a securities legislation known as the volume limit. It examines existing research on the detrimental effects of high sales volumes on the stock market's stability. The recent growth of HFT in India is exorbitant. The volume limit control works by decreasing the substantial price implications caused by legitimate transactions. There is insufficiency in the regulations when HFTs use spoofing to manipulate order display (Dalko & Wang, 2019).

Using high-frequency data, authors can identify the precise time intervals impacted by upcoming events (Agarwalla & Pandey, 2012). Semi-martingales based on high-frequency financial returns are the subject of an economics research. The effect of various stock specific and market-wide events on intraday volatility dynamics in the Indian market was thoroughly investigated. The high-frequency asset returns to its basic components (continuous, tiny jumps and big jumps) (dan Rosad, 2015). Investors might use these trends to construct heuristics, which would allow them to recognise probable bubble and herd scenarios before they occur (Ghosh & Kozarevic, 2019).

The research articles studied for the present study purpose and their contribution to literature are explained in Table 1.



**Table 1.** A Summary of Articles Reviewed.

Authors	Year	Title	Contribution
Linton & Mahmoodzadeh	2018	The Implication of High-frequency Trading for Security Markets	To identify potential dangers and opportunities for financial stability as well as other market outcomes including volatility, liquidity, pricing efficiency and price discovery, this article looks at how high-frequency trading (HFT) may evolve in the future.
Ma & McGroarty	2017	Social Machines: How Recent Technological Advances have Aided Financialisation	This study investigates how these social machines evolve to be.
Baron et al.	2019	Risk and Return in High-frequency Trading	With the study of high-frequency traders' behaviour and competition the researchers constructed latency measurements and discover that variations in relative latency account for large differences in HFTs' trading performance.
Ye et al.	2013	The Externalities of High-frequency Trading	The study demonstrates that while there is no detectable impact on liquidity, price efficiency or trading volume when exogenous technology shocks increase the trading speed from microseconds to nanoseconds, the order cancellation/execution ratio increases drastically from 26:1 to 32:1.
Boehmer et al.	2012	International Evidence on Algorithmic Trading	This study investigates the impact of algorithmic trading (AT) intensity on equity market liquidity, short-term volatility, and informational efficiency in 42 equity markets around the world between 2001 and 2011.
Petrescu & Wedow	2017	Dark pools in European Equity Markets: Emergence, Competition and Implications	This article assesses the advantages and disadvantages of using dark pools, both from the point of view of specific traders and for market efficiency and financial stability.
Linton et al.	2013	The Regulatory Challenge of High Frequency Markets	The challenges of regulating in a high-frequency environment are discussed in detail in this article, along with how these concerns differ from regulatory issues regulators have faced in the past.

*(Table 1 continued)*



*(Table 1 continued)*

Authors	Year	Title	Contribution
Kauffman et al.	2015	Will High-frequency Trading Practices Transform the Financial Markets in the Asia Pacific Region?	The article suggests that appropriate regulations must be implemented to control and restrict the actions of high-frequency traders.
Shafi et al.	2019	High-frequency Trading: Inverse Relationship of the Financial Markets	The objective of this study is to better understand how SPX and VIX index trading relate to one another and to raise market awareness using high order moment models that simulate the behaviour of these index options.
Lin & Swan	2017	Limit Up Limit Down, Exchange Access Fee and High-frequency Trading Around Price Limits	It is found that LULD does interfere with trading activity, but it also reduces short-term volatility without delaying the price discovery process.
Chakervarti & Chaitanya	2018	Algorithm Trading and High-frequency Trading Boon or Bane in Indian Context	This study uses grounded theory to carefully examine algorithm trading and high-frequency trading in Indian Stock Markets to identify the reasons in a qualitative manner.
Jain et al.	2016	Does High-frequency Trading Increase Systemic Risk?	The research has provided a methodology for determining if HFQ raises systemic hazards and emphasises the necessity to use correlations and CoVaR techniques to control these risks through circuit breakers and other restrictions.
Arumugam & Prasanna	2021	Commonality and Contrarian Trading Among Algorithmic Traders	In this study, HFTs and buy-side algorithmic traders (BATs) are two diverse categories of ATs whose trading behaviour is examined. The outcomes show a significant trade similarity between HFTs and BATs.
Dubey et al.	2017	Evidence of Algorithmic Trading from Indian Equity Market: Interpreting the Transaction Velocity Element of Financialization	The researchers in this study, in order to demonstrate algorithmic trading and understand it as the transaction velocity component of financialisation, take the advantage of the Indian equity market's explicit definition and identification of AT.
Dhananjaya	2020	Do Domestic Institutional Investors (DIIs) Neutralize the Impact of Large Reversal by Foreign Institutional Investors (FIIs)? Recent Evidence from Indian Stock Market	The researcher in this article tried to identify how domestic institutional investors (DIIs) and foreign institutional investors (FIIs) interact in India, by using recent high-frequency data.

*(Table 1 continued)*

*(Table 1 continued)*

Authors	Year	Title	Contribution
Sarlak & Talei	2016	Impact of High-frequency Trading on the Stock Returns of Large and Small Companies in the Tehran Stock Exchange	The outcomes show that high-frequency trading by major corporations has an impact on the turnover of small businesses and that the dynamics of stock returns on the Tehran Stock Exchange are non-linear functions.
Sahalia & Saglam	2017	High-frequency Market Making: Implications for Liquidity	Using several liquidity indicators, the researcher discovers that the market maker offers more liquidity as he moves more quickly but backs off when volatility rises.
Ait-Sahalia & Saglam	2013	High-frequency Traders: Taking Advantage of Speed	The researcher provides a model of dynamic trading where a strategic high-frequency trader receives an inaccurate signal about future order flows and utilises his speed advantage to improve his quoting policy.
Ma et al.	2016	International Stock Market Liquidity: A Review	This article reviews the literature on liquidity in global stock markets, recommends opportunities for future research, and shows the contrasts and similarities in empirical findings among existing studies.
Stefanova	2018	High-speed Technology Trading Innovations and Capital Market Performance in Bulgaria	Empirical studies done in this article significantly highlight how HFT enhances the quality of financial markets through greater liquidity, decreased transaction costs and quick price discovery.
Dalko & Wang	2018	High-frequency Trading: Deception and Consequences	The article goes into detail regarding the harm caused by spoofing and quote stuffing, two common high-frequency trading practices.
Dalko & Wang	2020	High-frequency Trading: Order-based Innovation or Manipulation?	In this research, the three effects that high-frequency traders have had on the market—increased volatility, a rise in unethical practises and a possibility for instability are highlighted. The study is justified by recent regulatory improvements and successful prosecutions of deceptive HFT methods.
Bhattacharya et al.	2021	Does Time-varying Illiquidity Matter for the Indian Stock Market? Evidence from High-frequency Data	This study observes that in the situation of open interest and volatility, illiquidity plays a significantly uneven role in describing stock returns in both up- and down-market scenarios.

*(Table 1 continued)*

*(Table 1 continued)*

Authors	Year	Title	Contribution
Kun	2018	Do High-frequency Fleeting Orders Exacerbate Market Illiquidity?	The findings show that transitory orders have very little impact on market illiquidity and do not contribute to either the amplified impact of prices or the decline in revenue for the market maker.
Wang et al.	2017	Market Decline, High-frequency Trading and Liquidity Commonality	Results show that for large-cap equities, HFT participation offers liquidity under wildly fluctuating market conditions.
Aggarwal & Panchapagesan	2017	Do Regulatory Hurdles Work?	The study examines two scenarios in which the Indian equities market's orders-to-trades ratio cost served as a barrier to algorithmic trading. To determine the causal influence of the charge in both situations, the researcher employs a difference-in-difference estimation technique.
Salighehdar et al.	2017	Cluster Analysis of Liquidity Measures in a Stock Market Using High-frequency Data	To identify commonalities and differences among liquidity measurements, researchers study their connection. Then, in order to quantify how similar, the liquidity measurements are to one another, researchers assess their correlation.
Art-Sahalia & Saglam	2016	High-frequency Market Making	The article gives the first rigorous, model-based evaluation of the effects of four hotly debated high-frequency trading regulations.
Hu et al.	2021	Deleveraging Commonality	This article uses empirical evidence to demonstrate that, even after adjusting for market index and market-wide liquidity, stock-level margin trading still considerably moves with market-aggregate margin trading.
Lachapelle et al.	2016	Efficiency of the Price Formation Process in Presence of High-frequency Participants: A Mean Field Game Analysis	In this study, a random order-driven market system with awaiting costs is examined for orderbook with diverse dealers. The researcher has used a natural framework for mean field game theory with anonymous players. The author offers both numerical experiments and analytical solutions.
Raman et al.	2020	Man vs. Machine: Liquidity Provision and Market Fragility	This study compares how human and algorithmic traders participate and offer operational liquidity during 'abnormally' difficult days to how they behave throughout 'normal' times, with an eye on the implications for the strength and fragility of markets.

*(Table 1 continued)*

*(Table 1 continued)*

Authors	Year	Title	Contribution
Sifat & Mohamad	2019	Circuit Breakers as Market Stability Levers: A Survey of Research, Praxis, and Challenges	This article attempts to explain the regulatory rationale and synthesises three decades' worth of theoretical and empirical works. It also highlights limitations, issues and methodological flaws undermining. Findings and offers guidance for future research in an environment where markets are becoming more complex.
Dalko	2016	Limit Up–Limit Down: An Effective Response to the 'Flash Crash'?	This article's goal is to evaluate limit up–limit down (LULD), a new rule from the US Securities and Exchange Commission, in light of manipulating high-frequency trading. A 'fair and orderly' market may be maintained and widespread crises can be avoided even in the age of computerised trading by promoting quantitative regulation measures that can be automated using high-speed computers.
Pitluck	2011	Distributed Execution in Illiquid Times: An Alternative Explanation of Trading in Stock Markets	This article argued that despite temporary spikes in liquidity, global stock markets are typically illiquid, and it was suggested that local investors might be quick and stealthy, whereas international corporations are forced to move more slowly due to their increased illiquidity.
Sifat & Mohamad	2020	A Survey on the Magnet Effect of Circuit Breakers in Financial Markets	The researchers in this article synthesise the theoretical and empirical research on the magnet effect hypothesis and identify the flaws in these studies that need to be fixed in the academic community before regulators start to take their findings more seriously.
Ma et al.	2018	Market Volatility, Liquidity Shocks, and Stock Returns: Worldwide Evidence	In 41 countries between 1990 and 2015, the researchers examine at how market volatility, liquidity shocks and stock returns interact. The results show that liquidity plays a significant role in how market volatility influences stock returns in global markets.

*(Table 1 continued)*

*(Table 1 continued)*

Authors	Year	Title	Contribution
Aggarwal & Thomas	2014	The Causal Impact of Algorithmic Trading on Market Quality	By introducing co-location, an exogenous occurrence known to increase algorithmic trading after it occurs, the researchers attempt to address the difficulty in establishing the casual impact of algorithmic trading. The results indicate that increasing AT reduces the liquidity risk and it is suggested that securities with higher AT activity have more advantages than disadvantages.
Bhowmik	2013	Stock Market Volatility: An Evaluation	With the aid of significant economic literatures, the research examined a wide range of aspects of stock market volatility, including measurement and the nature of volatility's influence.
Dalko & Wang	2019	Volume Limit: An Effective Response to the India Flash Crash?	The article evaluates the Securities and Exchange Board of India's most recent securities regulations, known as the volume limit. It examines the research on the detrimental effects of high selling volumes on stock market stability.
Agarwalla & Pandey	2012	Whether Cross-listing, Stock-specific and Market-Wide Calendar Events Impact Intraday Volatility Dynamics? Evidence from the Indian Stock Market Using High-frequency Data	This research examines the impact of several stock-specific and market-wide events on intraday volatility dynamics in the Indian market using high-frequency stock price data. It was found that the intraday volatility in the Indian Stock Market has a 'reverse J' shape and is substantially higher than what has been reported in other markets.
Ait-Sahalia & Jacod	2012	Analyzing the Spectrum of Asset Returns: Jump and Volatility Components in High-frequency Data	This article outlines a straightforward but effective methodology for breaking down asset returns sampled at high-frequency into their basic components (continuous, small jumps, large jumps), assessing their relative magnitudes, and analysing their finer details, such as the level of activity of the jumps.
Ghosh & Kozarević	2019	Multifractal Analysis of Volatility for Detection of Herding and Bubble: Evidence from CNX Nifty HFT	This research explores the herding and bubble detection in a capital market underlying's volatility domain. The empirical study of the 'financial Reynolds number (ReHFT)' derived from the CNX Nifty HFT domain using MFDFA has shown that ReHFT strongly exhibits herding characteristics.

## **Conclusion**

The HFT in India and as well across the world is controlled based on various technical regulations and with the advent of technology, the HFTs are able to carry out the transactions. The literature explained above has given vital areas of research in improvising the HFT with minimal impact on the retail investors and crunch on prices of the financial securities. The reviews have also helped to learn various techniques of arbitrages, passive trading and spoofing, which has an impact on the leveraging effect of the prices. The liquidity of the market is having significant impact based on the operation of the HFT which is clearly explained by the market crash in the year 2010. The HFT has the potential to bring down the market based on its operation has significant impact on the liquidity of the market. The world over has gained significant knowledge about the vital impacts created in the areas of liquidity and volatility. The majority of the studies found in the literature that are highly cited are based on multi-national and other world markets. The Indian market related researches are very scarce in the literature. The Indian Stock Market has been affected vitally with the operation of HFT which is explained by the literature. The connecting link between the HFT with the operational areas of liquidity and volatility of stock market is hardly found in the literature. The various measures to eliminate the overcoming effects of spoofing and quotation stuffing are identified as potential area of research based on this synthesis. The regulatory measures and their impact on HFT were found to be an interesting area of research that is left unexplored. This study on whole has provided clear synthesis of HFT in the areas of liquidity and volatility over the decade which has helped to identify significant areas of research related to Indian as well as world stock markets.

## ***Implications of the Study***

This research study contributes to the regulators by providing insights to earlier research in HFT so that regulators can concentrate on devising more extensive regulatory policy. This study also contributes to the researchers in the area of HFT as this gives a condensed view of previous research done in studying impact of HFT on various layers of stock markets. This study mainly contributes to the HFTs and institutional investors by specifying what kind of impact it will have in their trading transactions and also the challenges it is posing.

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**References**

- Agarwalla, S. K., & Pandey, A. (2012). Whether cross-listing, stock-specific and market-wide calendar events impact intraday volatility dynamics? Evidence from the Indian Stock Market using high-frequency data. *SSRN Electronic Journal*, 1–22. <https://doi.org/10.2139/ssrn.2182429>
- Aggarwal, N., & Thomas, S. (2014, July). *The causal impact of algorithmic trading on market quality* (p. 36). Indira Gandhi Institute of Development Research.
- Aggarwal, N., Venkatesh, P., & Thomas, S. (2017, October). *When do regulatory hurdles work?* [https://www.cb.cityu.edu.hk/ef/doc/GRU/HFT%202017/2017October\\_OTRfee.pdf](https://www.cb.cityu.edu.hk/ef/doc/GRU/HFT%202017/2017October_OTRfee.pdf)
- Ait-Sahalia, Y., & Saalam, M. (2017). High-frequency market making: Implications for liquidity. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.2908438>
- Arumugam, D., & Krishna Prasanna, P. (2021). Commonality and contrarian trading among algorithmic traders. *Journal of Behavioral and Experimental Finance*, 30, 100495. <https://doi.org/10.1016/j.jbef.2021.100495>
- Baron, M., Brogaard, J., & Kirilenko, A. A. (2014). Risk and return in high-frequency trading. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.2433118>
- Bhattacharya, M., Bhattacharya, S. N., & Jha, S. K. (2022). Does time-varying illiquidity matter for the Indian stock market? Evidence from high-frequency data. *Australian Journal of Management*, 47(2), 251–272. <https://doi.org/10.1177/03128962211010243>
- Bhowmik, D. (2013). Stock market volatility: An evaluation. *International Journal of Scientific and Research Publications*, 3(10), 1–18.
- Biais, B., Foucault, T., & Moinas, S. (2011). *Equilibrium high-frequency trading*. AFA 2013 San Diego Meetings Paper [HEC Paris Research Paper No. 968/2013]. <https://doi.org/10.2139/ssrn.2024360>
- Chakervarti, D., & Chaitanya, D. (2016). *Algorithm trading and high-frequency trading boon or bane in Indian context* (Vol. 3, No. 8, pp. 8–9). [www.ijamee.info](http://www.ijamee.info)
- Dalko, V. (2016). Limit up–limit down: An effective response to the ‘flash crash’? *Journal of Financial Regulation and Compliance*, 24(4), 420–429. <https://doi.org/10.1108/JFRC-04-2016-0040>
- Dalko, V., & Wang, M. H. (2018). High-frequency trading: Deception and consequences. *Journal of Modern Accounting and Auditing*, 14(5), 271–280. <https://doi.org/10.17265/1548-6583/2018.05.004>
- Dalko, V., & Wang, M. H. (2019). Volume limit: An effective response to the India flash crash? *Journal of Financial Regulation*, 5(2), 249–255. <https://doi.org/10.1093/jfr/fjz006>
- dan Rosad, S. (2015). Proposal for a regulation of the European Parliament and of the Council on ensuring a level playing field for sustainable air transport—‘ReFuelEU aviation’. *Suparyanto Dan Rosad*, 5, 248–253.
- Dubey, R. K., Chauhan, Y., & Syamala, S. R. (2017). Evidence of algorithmic trading from Indian equity market: Interpreting the transaction velocity element of financialization. *Research in International Business and Finance*, 42, 31–38. <https://doi.org/10.1016/j.ribaf.2017.05.014>
- Gai, J., Yao, C., & Ye, M. (2013). *The externalities of high-frequency trading* [Working Paper] (pp. 1–46). University of Illinois. <http://www.sec.gov.edgekey.net/divisions/riskfin/seminar/ye031513.pdf>

- Ghosh, B., & Kozarevic, E. (2019). Multifractal analysis of volatility for detection of herding and bubble: Evidence from CNX Nifty HFT. *Investment Management and Financial Innovations*, 16(3), 182–193. [https://doi.org/10.21511/imfi.16\(3\).2019.17](https://doi.org/10.21511/imfi.16(3).2019.17)
- Hou, J., Zhao, S., Wang, H., & Bi, E. (2017). *Journal of Management Science and Engineering*, 2(2), 132–159. <https://doi.org/10.3724/SP.J.1383.202007>
- Hu, C., Liu, Y. J., & Zhu, N. (2021). Deleveraging commonality. *Journal of Financial Markets*, 53, 100582. <https://doi.org/10.1016/j.finmar.2020.100582>
- Iskandar. (2018). *Grou*, 23529(2), 1–45.
- Jain, P. K., Jain, P., & McInish, T. H. (2016). Does high-frequency trading increase systemic risk? *Journal of Financial Markets*, 31. <https://doi.org/10.1016/j.finmar.2016.09.004>
- Kauffman, R. J., Hu, Y., & Ma, D. (2015). Will high-frequency trading practices transform the financial markets in the Asia Pacific Region? *Financial Innovation*, 1(1), 1–27. <https://doi.org/10.1186/s40854-015-0003-8>
- Lachapelle, A., Lasry, J. M., Lehalle, C. A., & Lions, P. L. (2016). Efficiency of the price formation process in presence of high-frequency participants: A mean field game analysis. *Mathematics and Financial Economics*, 10(3), 223–262. <https://doi.org/10.1007/s11579-015-0157-1>
- Li, K. (2018). Do high-frequency fleeting orders exacerbate market illiquidity? *Electronic Commerce Research*, 18(2), 241–255. <https://doi.org/10.1007/s10660-017-9273-8>
- Lin, Y. (2018). Limit up limit down, exchange access fee and high-frequency trading around price limits. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.3019986>
- Linton, O., & Mahmoodzadeh, S. (2018). Implications of high-frequency trading for security markets. *Annual Review of Economics*, 10, 237–259. <https://doi.org/10.1146/annurev-economics-063016-104407>
- Ma, R., Anderson, H. D., & Marshall, B. R. (2016). International stock market liquidity: A review. *Managerial Finance*, 42(2), 118–135. <https://doi.org/10.1108/MF-04-2015-0096>
- Ma, R., Anderson, H. D., & Marshall, B. R. (2018). Market volatility, liquidity shocks, and stock returns: Worldwide evidence. *Pacific Basin Finance Journal*, 49, 164–199. <https://doi.org/10.1016/j.pacfin.2018.04.008>
- Ma, T., & McGroarty, F. (2017). Social machines: How recent technological advances have aided financialisation. *Journal of Information Technology*, 32(3), 234–250. <https://doi.org/10.1057/s41265-017-0037-7>
- Pitluck, A. Z. (2011). Distributed execution in illiquid times: An alternative explanation of trading in stock markets. *Economy and Society*, 40(1), 26–55. <https://doi.org/10.1080/03085147.2011.529333>
- Raman, V., Robe, M. A., & Yadav, P. K. (2015). *Man vs. machine: Liquidity provision and market fragility: August 2014*. <https://www.stern.nyu.edu/sites/default/files/assets/documents/Man%20vs%20Machine%20Liquidity%20Provision%20and%20Market%20Fragility.pdf>
- Sarlak, A., & Talei, Z. (2016). Impact of high-frequency trading on the stock returns of large and small companies in the Tehran Stock Exchange. *International Journal of Economics and Finance*, 8(4), 216. <https://doi.org/10.5539/ijef.v8n4p216>
- Shafi, K., Latif, N., Shad, S. A., & Idrees, Z. (2019). High-frequency trading: Inverse relationship of the financial markets. *Physica A: Statistical Mechanics and Its Applications*, 527, 121067. <https://doi.org/10.1016/j.physa.2019.121067>
- Sifat, I. M., & Mohamad, A. (2019). Circuit breakers as market stability levers: A survey of research, praxis, and challenges. *International Journal of Finance and Economics*, 24(3), 1130–1169. <https://doi.org/10.1002/ijfe.1709>



- Sifat, I. M., & Mohamad, A. (2020). A survey on the magnet effect of circuit breakers in financial markets. *International Review of Economics and Finance*, 69(May), 138–151. <https://doi.org/10.1016/j.iref.2020.05.009>
- Stefanova, J. (2018). High-speed technology trading innovations and capital market performance in Bulgaria. *Financial Studies*, 22(2(80)), 6–37. <https://www.econstor.eu/handle/10419/231660>
- Wang, G. H. K., Wu, Z.-X., & Zheng, H. (2016). Market decline, high-frequency trading and liquidity commonality. *Asian Finance Association (AsianFA) 2016 Conference* (Vol. 1, pp. 1–21). <https://ssrn.com/abstract=2727776>

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## Book Review

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**A. A. Shaikh & H. Karjaluoto, *Marketing and Mobile Financial Services: A Global Perspective on Digital Banking Consumer Behavior (Routledge Studies in Marketing)*, 2019, Routledge Publications-Taylor and Francis Group, 314 pp., ₹ 9693. ISBN: 9781351174466.**

The book under review interestingly throws light on the evolution, growth and future of mobile financial services (MFS). The book is designed to offer a unified perspective on the systems of mobile banking and payments as well as branchless banking. MFS have been an interest area of researchers and practitioners as though these systems appear as interrelated and interconnected there is a noticeable difference in their business models, regulatory frameworks and target market. The book under study adapts a comprehensive approach in promoting understanding of customer actions in e-banking. It also highlights the significant role played by the non-banking actors such as fintech firms, telecom, Amazon and PayPal in developing and deploying innovative financial and payment services. The first few pages of the book include half title, series page, title, copyright and acknowledgements. The content of the book is covered in three parts: Part I: Mobile financial services comprises three chapters, Part II: Mobile banking and payment services comprises seven chapters and Part III: Branchless banking services comprises three chapters and the index.

Part I 'Mobile financial services (MFS)' examines the introduction and growth of the mobile banking services. Chapter 1—'Introduction, definition and conceptualization'—begins with an explanation of the factors that have led to a momentous shift in the delivery of financial services in terms of recent innovations in mobile fintech and MFS. The chapter explores three critical research questions, namely meaning of MFS and its conceptualisation in the marketing and Information technology literature, segregation of MFS into mobile banking, payments and mobile money and the differentiation in the types of MFS.

This chapter addresses the fact that conventional model of mortar and brick banking has been replaced by this rapidly converging financial landscape. With a brief history of digital banking, the authors state that developments in digital banking started in 1960, received momentum in late 1980s and reached climax in 1990. In 2000, portable and wearable devices brought revolution in consumer mindset and lifestyle owing to massive social and economic impact. Finally, the authors quote the role of global advancements in developing mobile-based

innovative solution in the area of retail mobile financial banking services to varied cadre of population.

In a very lucid manner, the authors draw attention towards the significant role played by the retail banking sector in the Indian economy. The chapter offers an overview of bank-customer relationship and states how mobile devices contribute towards expansion of business portfolio by offering pure mobility to consumption of digital services. Pictorial presentation of a beautiful landscape of retail MFS and how these services are segregated into different types contribute towards retaining the attention of the reader. Significance of mobility is stressed upon by the authors as it offers higher degree of independence in terms of space and time with the usage of mobile devices in the banking and payment processes. This chapter also explains the major types of MFS, the varied benefits offered and emphasises the role of mobile banking as a powerful customer relationship management tool to build loyalty and mutually rewarding relationships with customers. At the end of the chapter, the authors conclude stating that mobile banking applications are gaining popularity in the emerging and developing countries. Mobile banking and payments are also expected to augment customer interactions with the delivery channels available in the digital retail banking sector.

In Chapter 2—‘Engaging non-active consumers to use mobile financial services: A developed country perspective’—the authors try to identify the factors that influence the usage of mobile services from the point of view of actual and continued usage of service. The main purpose of this chapter is to promote continued usage of MFS for enabling the non-active consumers to start use of and indulge in continuous usage of the MFS. The authors provide a novel insight into the factors that either encourage or deter the usage of latest MFS. In a very lucid manner, the authors explain that value addition and usefulness are the most important factors justifying the need for mobile banking services and thus develop a comprehensive understanding concerning the usage of MFS. Easy to use, secured, flawless functioning, tailored to cater to the need of diverse customer segments are some other factors influencing the usage. Finally, the authors emphasise that social aspects are equally important as they exert a strong influence on the use as well as continued use of the service. The present chapter also draws attention of the readers towards factors contributing to non-acceptance of new MFS and states the measures to overcome these issues. The chapter concludes by suggesting ways and means to engage the non-active consumers to use MFS.

Chapter 3—‘How emotions are considered crucial on an omnichannel banking environment in gaining customer loyalty’—endeavours to address the role of emotions in an omnichannel environment and how crucial it is to gain customer loyalty in retail banking in the era of digital transformation. The authors point out clear connections among positive and negative emotions, omnichannel experiences and loyalty. Banks should focus on providing high technology and high human touch for a successful digital transformation and aim at satisfying the customers with their service, as satisfaction leads to loyalty and emotionally involved customers are more loyal. The authors also stress on offering consistent, uniform and integrated experience to the customers in an omnichannel environment.

Adverse effect of shift to online banking is a weak emotional relationship between customer and bank. However, this can be overcome by engaging the customer in the service process for value formation and co-creation. The authors draw attention towards requirement of customer-focused leadership with non-existence of silo mentality regarding channel. An understanding of managerial mindset, systematically overestimated levels and key drivers of customer satisfaction is needed for gaining customer loyalty. The authors conclude this chapter by emphasising on the need for a true integration of all channels reflecting an omnichannel behaviour wherein customer emotions are not neglected and this is regarded as key to customer loyalty. Finally the authors emphasise on the need for the banks to develop customer dominant logic mindset to ensure that emotions are involved in customer interactions.

Part II 'Mobile banking and payment services' examines the overall digitalisation of business and resulting digital service provisions. Chapter 4—'The development of mobile banking services in a large Finnish financial organization'—opens by pointing out that online banking service provisions have paved the way for the new techniques of interacting with the clientele. Online banking services grew steadily and peaked around 2010 when m-banking services were rolled out. The authors point out towards the fact that digitalisation is portrayed as one of the major megatrends of present time. In fact, digitalisation is viewed as an opportunity to improve customer experience, create new business and streamline current processes.

The authors state that with an increase in the number of smartphone users, m-banking has become the fastest growing digital banking channel worldwide. Time and cost saving, ease of access and increased demand especially among younger generations constitute the driving force behind increased m-banking usage. The authors talk about various innovations such as incremental process innovation meant for boosting productivity and driving down costs, innovation to improve efficacy and quality and finally emphasis on radical service innovation. Finally, the authors conclude the chapter by suggesting various implications of digitalisation.

Chapter 5—'Factors influencing mobile banking continuous use in Sub Sahara Africa—A study of mobile banking users in Nigeria'—the authors consider the impact of voluptuous features in the app and its influence on the continuous usage particularly in the African emerging markets. Direct impact of regulatory framework on the competitiveness among service providers undermines continuous use of mobile banking. The authors highlight the direct positive effect of social influence on continuous intention. However continuous intention is further asserted by age as it constructively balances the existing relation between continuous usage and societal influence. The authors state that sustained use of m-banking is subject to a supportive environment. In the case of a developing country, factors such as interrupted power supply, shortage of a suitable policy framework for driving the internet penetration and mobile telecom are detrimental to the sustainable use of m-banking. The authors emphasise on promotion of power supply, affordable and reliable internet access, updation on m-banking applications by the service providers. The chapter also stresses on use of personal

communication, educative programs, harnessing the social media power by forwarding virtual community forums to enkindle significant discussion around various applications of m-banking and its sustenance and utility.

In transitioning to the next chapter, the authors state that influence of society, supportive conditions and privacy concerns of users are significant factors facilitating the continuous usage whereas right infrastructure, awareness, positive word of mouth, increased security features can sustain and enhance usage of m-banking. An important finding of this chapter states that performance and export prospect, societal influence and facilitating impact of the fundamental construct are controlled by demographic factors. This chapter also explains the wanted/unwanted, direct/indirect and expected/unexpected consequences of the adoption and usage of mobile payments.

Chapter 6—‘Mobile Payments where does it come from and what does it lead to’—begins with an introduction of mobile payments and emphasises on the need for research on behavioural outcome of new mobile payment technologies. The authors explain their viewpoint on the basis of Everett Rogers in 2003 theory of innovation diffusion. The theory has been criticised for being too simplistic and is augmented with theory on planned behaviour. This chapter can be summarised as a qualitative, exploratory and multiple case study focusing on a social system of a flea market, which is considered as a natural laboratory wherein researchers can observe and theorise market and consumer processes. The mothers were of the opinion that mobile pay and reshipper offered ease to them for shopping second hand goods for their children and mobile payments entail a number of opportunities leading to improved trust in some instances; however, these opportunities turned out to be risky in some other instances.

Here the authors also present an overview of history of mobile payments beginning from card payments to ATMs and then extending to several relatively successful mobile payment systems such as American PayPal and M-pesa and new mobile payment systems from Apple, Samsung and Google. The study was conducted in the flea market.

In this chapter, the authors also discuss the importance of references by family and friends (evaluations, comments and suggestions) and public sources, social media such as blogs forerunners seem to adopt a tutoring role in encouraging the adoption of new applications. Utility and value of mobile services are critical factors in deciding whether or not to utilise a new app. Users usually rely on services offered by a bank or another well-known and trustworthy provider of services. Trust plays a significant role in enhancing reliability that was one of the major finding in this chapter. In many cases, security and infrastructural issues, service dysfunction, technical problems and uncertainty created a lot of confusion for the users of mobile services.

The authors conclude stating that development of future MFS includes three phases, namely pre-usage phase in which there is a need to take care of uncomfortable or insecure customers, actual usage phase wherein there is a need to cater the needs of heterogeneous customers, tailoring the user interface to cater the needs of different customers and continued usage phase encouraged by other user experiences, recommendations and comments. In this chapter, authors try to

persuade non-active MFS users to start using the system and to keep using it. An attempt has been made to reveal underlying attitude, experience and future expectations of the non-active customers.

Chapter 7—‘Drivers of continuous usage: a consumer perspective on mobile payment service ecosystems’—states that there are lack of studies that go beyond adoption and explain the behavioural effects of mobile tech adoption. The present chapter examines the behavioural consequences, mobile payment has to its users, as a qualitative, explorative and multiple case study. The focus is on one social system that takes advantage of mobile payments in a specific context, subject to the study of women shopping in the flea market, mostly for their children. Data were collected through semi-structured interviews and self-ethnography. The authors point out towards the relevance of flea market as a wild market for observation and theorising market and consumer processes as forms of direct marketing and consumption. Finally, the chapter concludes by highlighting the significance of digital money in promoting self-disciplined buying, enhancement of trust and increase in second hand shopping and a negative outcome of mobile payments in the form of loss of financial overview and control.

In Chapter 8—‘Stand alone retail owners’ preference on using mobile payment at the point of sales (POS)’—the authors state that Africa has witnessed growth of mobile payment innovation to stimulate financial inclusion. The study focuses on standalone retailer preference on the acceptance of mobile payments in Tanzania and attempts to answer questions pertaining to ‘What factors influence standalone retailers on using mobile devices at the point of sales?’ The findings in the chapter state that emergence of cybercrime has limited the growth of mobile payment, and the Tanzanian market has been rendered competitive by seven communication service providers. The current study covers the gap of knowledge on understanding the acceptance on mobile payment usage with an emphasis on convenience store owners in Tanzania. Literature shows that in Africa, mobile payment at the point of purchase is very low. Factors such as nativity, security, ease of use, availability, convenience and intentions to use and complexity of technology play a great role in understanding the factors that enhance preference on using mobile payment at the POS.

Findings of this chapter state that perceived trust and social influence act as motivators to influence the consumers to use mobile payment whereas other factors such as cost, mobility, trust and usefulness also were significant in this regard. The authors emphasise that power outage, network failure and limited number of ePOS machines limit the usage of POS tools. This empirical study makes use of one dependent and six independent variables. The variables used were knowledge on the usage of mobile payment, informative education, and intention to use, convenience, usability, cost and privacy. The authors stress on the fact that more informative education is needed for convenient shop owners to accept mobile payment at POS (regarding how to use and access the services at registered stores). The finding that cost is not a significant factor in influencing the use of mobile payment by the shop owners is contradictory to the previous studies. Convenience emerged as one of the significant factors that influences the usage of mobile payment by retailers in Tanzania. Future studies are proposed to

make use of choice and diffusion of innovation theories to understand consumer preference on the emergence of these new technologies.

Chapter 9—‘The emergence of Indian mobile payments market: An institutional perspective’—focuses on market creation as well as change and addresses two prominent streams of research in this domain, namely firm-driven process and consumer-driven process. The authors rationalise on the role of contradiction and collaboration between banking and telecom companies in the emergence of mobile payments in India. This chapter also elaborates the institutional work performed by macro (firms, regulators) and micro (retailers, end consumers) elements/entities and states that several public and private sector banks such as SBI, HDFC and ICICI have launched their mobile payment services with different telecom operators.

The authors highlight the role of institutional work in perpetuation as well as changes in the existing field. The authors elucidate the meaning of institutional logics and its role in bringing about institutional and field change. Data concerning mutual fund and health care industry were collected through newspaper reports. The journey of mobile payment evolution in India is studied in four phases, namely the emergence of mobile banking and payments (1998–2003), formation of specialised mobile payment companies (2004–2010), growth of mobile payment companies (2011–2014) and formation of payment banks (2015 till present). In the initial years, it was a collaborative effort of telecom companies and banks but later on, the emphasis shifted on the telecom companies wherein coverage and convenience were two main components of the payment system.

This chapter also draws attention towards the proactive role of Government of India in the creation and regulation of mobile payments in India. The role of RBI legislations is worth mentioning in increasing the banking coverage and ensuring the security of financial transactions. Digital India policy and telecom regulatory authority of India, 2016 TRAI, simplified the rules and regulations to facilitate the mobile payment systems in the country. The mobile payment firms educated the consumers and were successful in positioning their product. The use of mobile payments as a convenient option and youthful lifestyle indicator effectively captured the psyche of the changing Indian consumer who wanted to emulate a fashionable and modern lifestyle. The chapter depicts a pictorial presentation of growth in the number of mobile users and mobile banking transactions over years stating that preponderance of young population has led to faster adoption of mobile payments. The authors also emphasise that market creation should not be seen as firm driven or consumer driven but as an interactive process of co-creation. Finally, the chapter concludes stating that collaborative institutional work by retailers played a significant role in the creation of mobile payments market.

In Chapter 10—‘Institutional logics as inhibitors or levers? The case of mobile payments in Finland’—the authors begin by stating that digital communication technologies most commonly referred as disruptive technologies have changed the way people communicate. Digitalisation is revolutionalising the creation of value in customer interactions. Organisations need to be more attentive to, and receptive to emerging opportunities, as well as be able to react flexibly to changing circumstances. The authors also throw light on the impact of institutional



considerations on the development of innovative payment services and build up an understanding on the uptake of new digital service innovations in the financial industry, including consumers, businesses, and retail banks.

The objective of this chapter was to identify the key institutional hurdles in establishing digitalised client interactions, as well as to understand the challenges that a newly founded business faces when launching a mobile payment service, using one case study as an example. The findings reveal that in a highly institutionalised payment context, institutional elements (normative, cultural cognitive and regulative) influence the acquisition of innovations in the area of digital service. Consumer behaviour and bank dominance are identified as cultural cognitive variables impacting innovations in payment service, as are security, banking industry cooperation, lack of skills and technical lock-in as normative elements.

Part III ‘Branchless banking services’ Chapter 11—‘Branchless banking and financial inclusion: Agents as facilitators of financial access’—begins with an introduction to financial inclusion as a means to serve the disadvantaged and low-income segments of an economy. The authors emphasise on the role of financial inclusion as a powerful tool for strong and inclusive growth thereby leading to growth in GDP through increased productivity. The authors point out towards initiative of universal financial access (UFA) and agency banking. The chapter also examines the critical role of agents in the financial service ecosystem and agency banking models for financial inclusion. In a very lucid manner, the authors explain the role and benefits of agency banking in bridging the access gap to formal financial services. The chapter throws light on banking opportunities and challenges along with an emphasis on the relevance of understanding consumer behaviour from the perspective of agent banking. Role of agency banking as a tool for financial inclusion and changing consumer behaviour towards driving financial inclusion is also highlighted from a theoretical perspective. The chapter further highlights the need for the financial service providers to identify, understand and leverage the collaborative efforts of ecosystem participants towards efficient deployment of agency banking in promoting access to financial service.

Chapter 12—‘How is the use of mobile services transferring lives in Ghana’—the authors focus on the emergence of mobile money as a revolutionary phenomenon in the developing world. There is a need for the financial institutions to better understand changing consumer behaviour and the elements that influence their decision to continue using a particular banking channel, such as MM (mobile money). The chapter throws light on the existence and usage of branchless banking systems in Ghana. This chapter provides an understanding of the African consumer mobile money financial industry, with a focus on the role of service agents in Ghana. The chapter seeks to answer the question concerning the influence of reliability and service quality of mobile money agents on consumer engagement and continued use of mobile money services. The findings, in the context of m-banking, state that credibility is of utmost importance. Further investigation reveals that the quality of mobile money agent service has a substantial impact on the affection, and cognitive process of consumer involvement along with trust in mobile money services. Customer involvement, according to



the authors, is a critical link to continued use of mobile money services. Mobile banking services are distinct in the sense that they operate on a separate business model that allows approved agents to provide financial services to underserved population.

In Chapter 13—‘Mobile financial services: Conclusion’—the authors summate the findings of all the previous chapters by juxtaposing a rapid diffusion of mobile devices across different regions and their extensive usage for information, communication and payment. The authors also discuss how the immense diffusion of the mobile technology and usage has inspired a huge digital migration from traditional to digital channels and on the other hand created a lucrative business proposition for the banking and other sub-sectors of the economy.

This edited volume provides an insight into the enormous benefits of MFS to the customers, financial institutions, fintech, and other service providers, the fast-evolving field of MFS contributes to the well-being of society, particularly in established and emerging markets.

The book under study maintains a strong focus on all three major MFS domains throughout the 12 chapters. This book will be beneficial for academicians who are investigating and teaching as well as for the professionals in the financial industry. The contributions in this edited volume endorse two major domains, namely mobile banking and mobile payments and mobile money or branchless banking. Pictorial presentation and segregation of various significant topics contribute towards enhanced understanding of the concept in an interesting manner. Table summarisation of research questions is addressed in the edited volume. The authors are of the view point that digital and mobile banking have tarnished human interaction, casting doubt on the justification for increasing customer experience.

The flipside is that digital and m-banking services have diluted the human interaction, which challenges the rationale of improving customer experience. MFS are required to be simple to use, work seamlessly, and be adaptable to different client segments and their various needs. As the service is so closely linked to users’ money and privacy, the security concerns are highly prioritised. To sum up, the development of MFS brings about fast changes in the consumer behaviour and attitude towards more convenient and always available services. The digital customer acquisition and providing low friction customer experience have become a daunting task for banks and other service providers globally. Each segment of consumers occupies a distinct position revenue probability and a different set of customer relationship. Understanding the core factors that influence the customer behaviour and attitude is key to the successful implementation of marketing and business strategy.

Overall, the book is analytical, comprehensive, informative and explanatory to read with great care. The chapters in the book are well written, and thorough research has been done on the subject under study. Extensive references have been provided at the end of each chapter. However, the book fails to highlight the comprehensive vision on the prospects of MFS in the future digital scenario. The focus of the book review is much detailed and comprehensive except the fact that

the authors fail to provide required attention to the latest digital innovations in the area of MFS. Lack of sufficient empirical findings for depiction of the challenges faced for promoting the adoption and usage of MFS, lack of appropriate and elaborative examples and repetition of some concepts are some other limitations of the book.

To a great extent, the book offers food for thought and offers directions for further research. The findings in the book will serve as a valuable resource not only to academicians and researchers in financial and digital marketing but also to regulators, policy makers, bank executives, fintech professionals and others interested in the intersectional working of mobile technology, social media and financial services. The authors make a sincere and valuable contribution towards formulating a cohesive framework to deal with the disruptive technological innovations.

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