(ISSN 0971 - 1864)

The Journal of Institute of Public Enterprise

Vol : 46 July – December, 2023 No : 2

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Vol : 46, No : 2 The Journal of Institute of Public Enterprise July – December, 2023

The Journal of
Institute of Public Enterprise

Aims and Scope

The Journal of Institute of Public Enterprise is a peer-reviewed journal devoted to publication of professional and academic research on the policy and functional facets of public sector enterprises, public policy and public systems. The aim of the journal is to provide a platform for researchers, academicians, practitioners and policy-makers from diverse sectors to stimulate scholarly debate in the contemporary issues and emerging trends in Public Policy, Public and Private Enterprise Management, Joint Ventures, Public Administration, Privatization and Disinvestment both in India and abroad.

- The views expressed in this publication are those of the individual authors and do not reflect the views of the Institute of Public Enterprise.
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- The publication of the Journal of Institute of Public Enterprise is supported by the grant received from Indian Council of Social Science Research (ICSSR), Ministry of Education, Government of India, New Delhi.

Published, Printed & Owned by : Institute of Public Enterprise, Hyderabad.
Place of Publication : Institute of Public Enterprise, Hyderabad.

(For information concerning the preparation of paper, see inside back cover)

The Journal of Institute of Public Enterprise

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Research Paper

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The Journal of Institute of Public Enterprise is supported by a grant-in-aid from the Indian Council of Social Science Research (ICSSR), Ministry of Education, Government of India, New Delhi, in recognition of its immense academic contribution.

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The Journal of Institute of Public Enterprise, July-December, 2023, Vol. 46, No. 2
ISSN : 0971-1864.

India's Covid-19 Policy Response : Challenges and Lessons for Effective Public Management of a Crisis

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The Covid-19 pandemic posed serious challenges to governments in policy-making and crisis management. While all countries initially relied on non-pharmaceutical interventions like lockdowns and distancing measures and subsequently on vaccination as effective strategies for containing the Covid-19 pandemic, there is a huge variation in the observed evolution of the pandemic across countries and within countries. The present study examines contextual factors behind the government's policy response in the form of a stringent national lockdown, subsequent devolution of authority to the local level, and its role in vaccination coverage in the containment of the pandemic. The empirical results that show an association of state-level factors in the spread of Covid-19 cases and mortality indicate the significance of policy responses at the state-level in the prolonged health crisis. The paper provides a contextual understanding of public policy in a federal structure and highlights the need for greater outlays for health expenditure besides increasing capacity and resources at the local level for effective management of a health crisis.

Keywords : Public Policy, Covid-19, Crisis Management, Non-pharmaceutical Interventions, Vaccination.

Introduction

The Covid-19 pandemic was a sudden exogenous shock that posed serious policy challenges to governments the world over. As of March 10, 2022, India had the second-largest number of cumulative confirmed Covid-19 cases after the US and ranked behind the US, Germany, Brazil, and Japan in cumulative cases per million people.

In the absence of vaccines or effective treatment, countries initially adopted Non-Pharmaceutical Interventions (NPIs), including domestic lock-downs, physical and social distancing measures, restrictions on public gatherings, school and workplace closures, travel restrictions, stay-at-home orders, the wearing of a face mask, mandatory quarantine, etc. (Hale et al., 2020).

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While almost all countries imposed restrictive measures by mid-March 2020, the timing and strength of these measures, as well as decisions regarding the easing of restrictive measures, varied across countries. The pace of vaccination also differed across countries. The progress of the pandemic and associated mortality exhibit vast differences across countries. The present study examines challenges and lessons for India in the use of NPIs and in implementing a vaccination programme for effective containment of the pandemic. We also use supporting empirical data to examine associated factors in the spread of Covid-19 across states in India. The results from the study show that contextual factors like India's large population, demographic and socio-economic differences across states, etc., as well as the federal structure of governance, have also determined pandemic outcomes. In the aftermath of the pandemic, the study offers a useful perspective for future management of a health crisis.

Literature Review

With coronavirus cases rising rapidly, World Health Organisation (WHO) declared Covid-19 a pandemic on March 11, 2020. NPIs were seen as primary health measures to curtail transmission and reduce mortality while giving countries time to ramp up their healthcare capacities. While empirical studies show that NPIs reduce transmission and save lives (Hsiang et al., 2020; Askitas et al., 2021), they come at a significant economic, social, and psychological cost. Reconciling trade-offs between health and socio-economic outcomes through effective implementation of fiscal support and other welfare measures is crucial to managing the crisis (Greer et al., 2020). The uncertainties and lack of definitive knowledge about the novel coronavirus and rapidly evolving variants of the virus posed several challenges to governments (Capano et al., 2020).

Human behaviour critically affects how a pandemic develops. Compliance with restrictive measures is determined by the amount of faith and trust that citizens repose in their governments (Besley & Dray, 2021). Bollyky et al. (2022), in a cross-sectional study, found that nations with high electoral democracy and high government trust had lower infection rates than other countries. Accurate and timely communication of risks and public information campaigns that address false news and anti-science rhetoric influence public attitudes favourably and promote prosocial behaviour (Bollyky et al., 2022; Sachs et al., 2022). Trust in political leadership and political and bureaucratic accountability are vital for

legitimacy and successful implementation of policies (Altiparmakis et al., 2021; Toshkov et al., 2022; Trivedi, 2020).

Effective management of the pandemic has been linked to state capacity, forms of governance, and cultural and institutional factors. Strong state capacity enables effective implementation of policies, while a legacy of good governance gives greater legitimacy to the actions of governments and fosters trust. Capano et al., (2020) link state capacity to policy design and the configuration of policy responses. Greer et al. (2020) argue that pre-existing political institutions can enable or constrain government responses in different ways. Toshkov et al. (2022), in a study of European responses to Covid-19 find that government response is a function of the capacities of the public administrative system and that less effective governments acted fast and heavy-handedly due to their limited capabilities in handling a major crisis. Yen et al. (2022) argue that more capable states (Singapore, South Korea, and Taiwan) initiated a faster crisis response, mobilised resources more extensively, and utilised diverse policy tools in contrast to the low-capacity states of Thailand and Indonesia. Besley and Drey (2021) find that high-income countries and countries with more political freedoms have generally fared worse than countries without civil liberties and/or with lower incomes. Cross-country cultural differences also influenced public attitudes towards NPIs and vaccination. South Asian countries with prior experience in respiratory diseases saw greater compliance with restrictive measures as opposed to Western countries that faced anti-mask and anti-vaccine protests.

While political, cultural, and administrative structures vastly influence a country's policies and outcomes, the spread of Covid-19 and associated mortality have also been attributed to country attributes like population size, share of elderly population, economic and human development, habitat-related variables, etc. (El Mouhayyar et al., 2022; Antonietti et al., 2021).

Methods and Data

The study adopts an analytical approach and uses empirical data and statistical analysis for associational rather than causal inference. Data for analysis is drawn from several sources. For country comparisons, we use data and charts from *Our World in Data accessed at https://ourworldindata.org/.* To assess Covid-19 progression over the three waves that India has witnessed, we use state-level data on total cumulative confirmed cases and deaths for 33 states and Union Territories (UTs) accessed from

the https://covid19tracker.in/ website, which is an initiative of IIT Hyderabad. As data on many variables is not available for the UTs of Ladakh, Lakshadweep, Daman & Diu and Dadra & Nagar Haveli, we have excluded them from the analysis. Data on per capita net state domestic product (pcnsdp) for 2019-20 at constant (2011-12) prices is obtained from the RBI Handbook of Statistics on Indian Economy (2022-23). We also use the RBI Handbook to compute the share of net state value added for agriculture, forestry, and fishing (agrishare) in total net state value added at constant (2011-12) prices for 2019-20. The proportion of urban population (urbanprop) is obtained from projected state urban population and projected state total population as of March 1, 2021 (Report of the Technical Group on Population Projections, 2020), while population density (popdensity) is constructed from data on projected state total population and area figures of the state in square kilometres (Census of India, 2011). The share of the elderly population (elderlyprop) is computed using the projected size of the elderly population (aged 60+) for 2021 from the Elderly in India (2021) and the projected state-wise population. A literacy index (literacy) is computed for each state as the geometric mean of standardised data on the percentage of literate women and the percentage of literate men in each state (age 15-49) collected from the National Family Health Survey, India (NFHS-5, 2019-21).

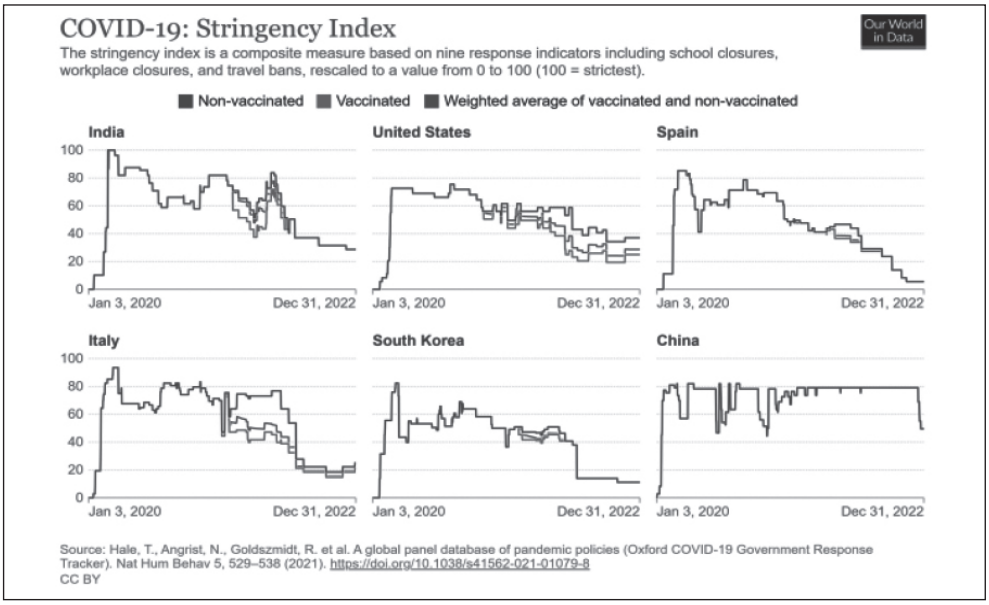
Analysis

Assessment of Vaccination and Non-Pharmaceutical Therapies as Policy Interventions in Covid-19 Containment

By mid-2022, India had seen three major waves in the Covid-19 pandemic. The first positive case of corona virus was recorded in Kerala on January 30, 2020. Following an alarming increase in cases around the world by early March 2020, many countries adopted pre-emptive measures. India also followed suit by suspending international flights, enforcing travel restrictions, and imposing a stringent 21-day national-level lockdown on March 25, 2020. By then, India had recorded around 500 cases and 10 deaths due to the coronavirus. India's initial response was quick and pre-emptive and was likely influenced by its large population size, limited resources, and ill-equipped public healthcare system to deal with a major health crisis. India's lockdown on March 25, 2020, which was rated 100 on the Covid-19 Stringency Index, was more stringent than measures adopted in the five countries that were worst affected by mid-March 2020, namely the USA, Italy, Spain, and South Korea, besides

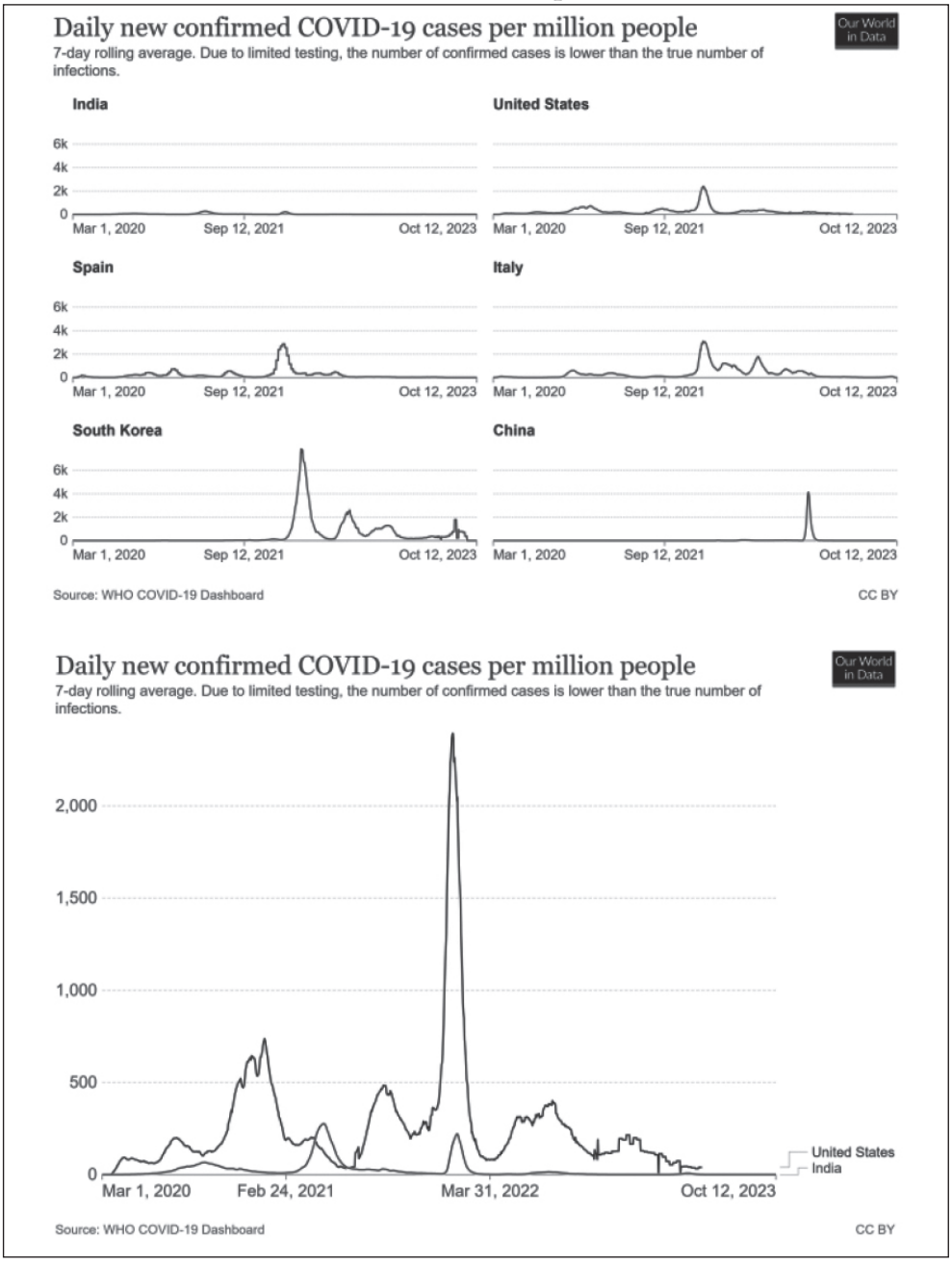
China, which together accounted for around 90 per cent of worldwide infections then. Figure-1 gives the Covid-19 Stringency Index for India and these five countries. Figure-1 shows that while all six countries adopted some form of restriction by the second week of March, subsequent relaxations or tightening of restrictions varied across countries. Hale et al. (2021), in a study of 183 countries, observe that the initial policy convergence seen in March 2020 is not seen in later policy decisions, so each country has its own pandemic peaks and troughs. This can be seen in the trajectories of daily new confirmed cases per million people for the six countries in Figure-2(a). Figure-2 (b) gives the trajectories of the pandemic for India and the US for comparison. The last major corona virus wave was the omicron wave, which saw a substantial increase in infections in early 2022 in many countries, including the US and South Korea. China followed a stringent zero-Covid policy for three years, as seen in the uniformly maintained high stringency index in Figure-1, and eventually eased restrictions following widespread protests from citizens, leading to a massive surge in infections in late December 2022. China's single large wave of infections witnessed late in the pandemic as seen in Figure-2(a), is in sharp contrast with the experience of other countries that have seen multiple waves since 2020.

Figure-1 : Country-wise Covid-19 Stringency Index



Source : Our World in Data.

Figures-2(a) & 2(b) : Country-wise Daily New Confirmed Cases Per Million People



Source : Our World in Data.

Further extensions to the lockdown continued in India until May 31, 2020. As policies began to be eased in June 2020, infections peaked around mid-September 2020 in the first wave, with nearly 1,00,000 new coronavirus cases daily and over 1,000 deaths daily. The pandemic illustrated the tough policy challenges for India. While the lockdown saved around 1,00,000 lives and gave the government time to ramp up health infrastructure, it also led to a crisis caused by the exodus from cities of large numbers of migrant workers in the informal sector who lost their means of livelihood (Lancet, 2020). The stringent lockdown led to a sharp 25 per cent decline in GDP in the first quarter of fiscal year 2021. But with supply-side structural reforms and measures to boost investment, including the Atmanirbhar Bharat Mission and support for the business sector, especially SMEs, etc., the economy saw a V-shaped recovery. At the same time, the government ensured continued and enhanced fiscal support for food security through the public distribution system, the employment programme (MGNREGS), and direct benefit transfers to women, widows, and pensioners (Government of India [GoI], 2021, Economic Survey).

After mid-September 2020, India witnessed a puzzling decline in cases, in sharp contrast to the US and other European countries, which saw a second and third wave of infections leading to enhanced restrictive measures. The contrasting experience can be seen in Figure-1 and Figure-2(a) and 2(b). By mid-February 2021, daily new cases in India were less than 10,000. The stringency index came down to 57.87 by early March 2021 as relaxations continued even though coronavirus cases showed a rising trend from mid-February 2021. The easing of economic restrictions and permissions granted for various social, religious, and political events that saw large gatherings of people and the sudden emergence of the highly transmissible and virulent delta variant led to a sharp surge in cases in the second wave in April and May of 2021. The second wave was devastating and was the deadliest of the three waves in India, with nearly 4,00,000 daily cases and nearly 3,000 daily deaths at its peak. In many cities, hospitals were overwhelmed and medical supply chains collapsed as a severe shortage of oxygen, hospital beds and medicines caused an unprecedented health crisis. Despite the severity of the second wave, the central government did not enforce a nationwide lockdown. Instead, state-level restrictions were imposed based on the prevailing situation in each state with the responses exhibiting considerable temporal variation (Nagesh et al., 2022). The stringency index climbed sharply from

57.87 on April 2, 2021, to 81.94 by May 10, 2021. Subsequently, infections declined in most states, but states in the North-East witnessed a significant spread as the delta variant reached these states after June 2021. The stringency index remained at around 70.83 until early September before declining to 51.39 by mid-November 2021. But from December 2021 infections started rising again resulting in the third wave caused by the omicron variant. Daily infections in India were a little over 200 cases per million people and daily deaths were negligible at less than one per million people during the peak of the third wave in late January 2022. The stringency index steadily increased to 83.80 by January 20, 2022, as infections peaked. As the wave subsided, most restrictions were eased and the index came down to 40.28 by April 1, 2022, with further declines in subsequent months as the virus became endemic and new coronavirus cases and deaths plateaued out. The third wave in India coincided with that in many other countries but had a smaller impact on India as compared to other countries, as can be seen in Figures-2(a) and 2(b). India's young population, the progress made in vaccination and natural immunity from exposure to the virus worked in the country's favour.

The development of effective vaccines was crucial for a return to normalcy. The unprecedented global efforts to find a vaccine for Covid-19 resulted in the first vaccines based on mRNA technologies (Pfizer-BioNTech & Moderna) being approved for emergency use as early as December 2020 (Sachs et al., 2022). India was at the forefront of vaccine development, with emergency use approvals granted in January 2021 to the indigenously developed Covaxin made by Bharat Biotech and Covishield developed by the Serum Institute of India-Astra Zeneca. Subsequently, approvals for several vaccines like Sputnik V, Moderna, Johnson & Johnson, and Zydus Cadila's vaccines were given by August 2021, with more approvals in early 2022 for Corbevax, Covovax, and Sputnik Light.

The vaccination drive in India started on January 16, 2021, in a phased manner, covering healthcare and frontline workers in the first phase. It was later extended to people above 60 years of age and those with comorbidities and further expanded to cover all adults and subsequently younger cohorts less than 18 years of age. While the vaccination pace was slow in the initial months due to supply constraints, logistics and vaccine hesitancy, it picked up rapidly after the second wave ended and by October 2021, total vaccine doses had crossed one billion. Within a year of starting the

vaccination programme, by January 2022, more than 70 per cent of adults were fully vaccinated (Times of India, January 17, 2022), and by July 2022, total vaccine doses administered had crossed two billion doses.

India leveraged its innovation system for the development of vaccines. The rapid development of vaccines and scaling up of production represent global scientific collaboration as well as strong collaborative networks between university-industry-government representing the triple helix framework of innovation that has been fostered and promoted by the Indian government in India's biotechnology and pharmaceutical sectors since the mid-1980s. The National Expert Group on Vaccine Administration for Covid-19 (NEGVAC) was constituted in August 2020 for vaccine development and rollout. The vaccination programme saw close coordination between the centre and states. The centre formulated policies, gave emergency use approvals and financial support for vaccine production, and took charge of procurement and distribution, while states were responsible for logistics like the selection of vaccination sites, training of manpower, etc. Until May 2021, the central government took sole responsibility for vaccine purchase and the allocation of vaccines to states was based on case prevalence and vaccine off-take. Subsequently, states and private hospitals were allowed to procure vaccines at pre-determined prices. The changes to procurement policy and the adoption of dual pricing were made to incentivize producers to scale up production and to ensure greater access. The CoWIN digital platform was implemented for efficient distribution and monitoring of vaccines at national, state and district levels.

Sub-national Responses and State-Level Spread of the Covid-19 Pandemic

A distinct evolution in the use of NPIs was evident from June 2020 as the policy of nationwide lockdown gave way to an adaptive strategy at the state level that was based on a credible assessment of the Covid-19 situation at the local level. From June 2020, states began easing restrictions based on district profiling of infection hotspots. This was subsequently replaced by a more targeted approach through the identification of containment zones in localities and neighbourhoods by local government authorities like municipal bodies, panchayats, etc. States adopted similar restrictions as those mandated by the central government and followed advisories issued by the Ministry of Health and Family Welfare and the Ministry of Home Affairs. India faced

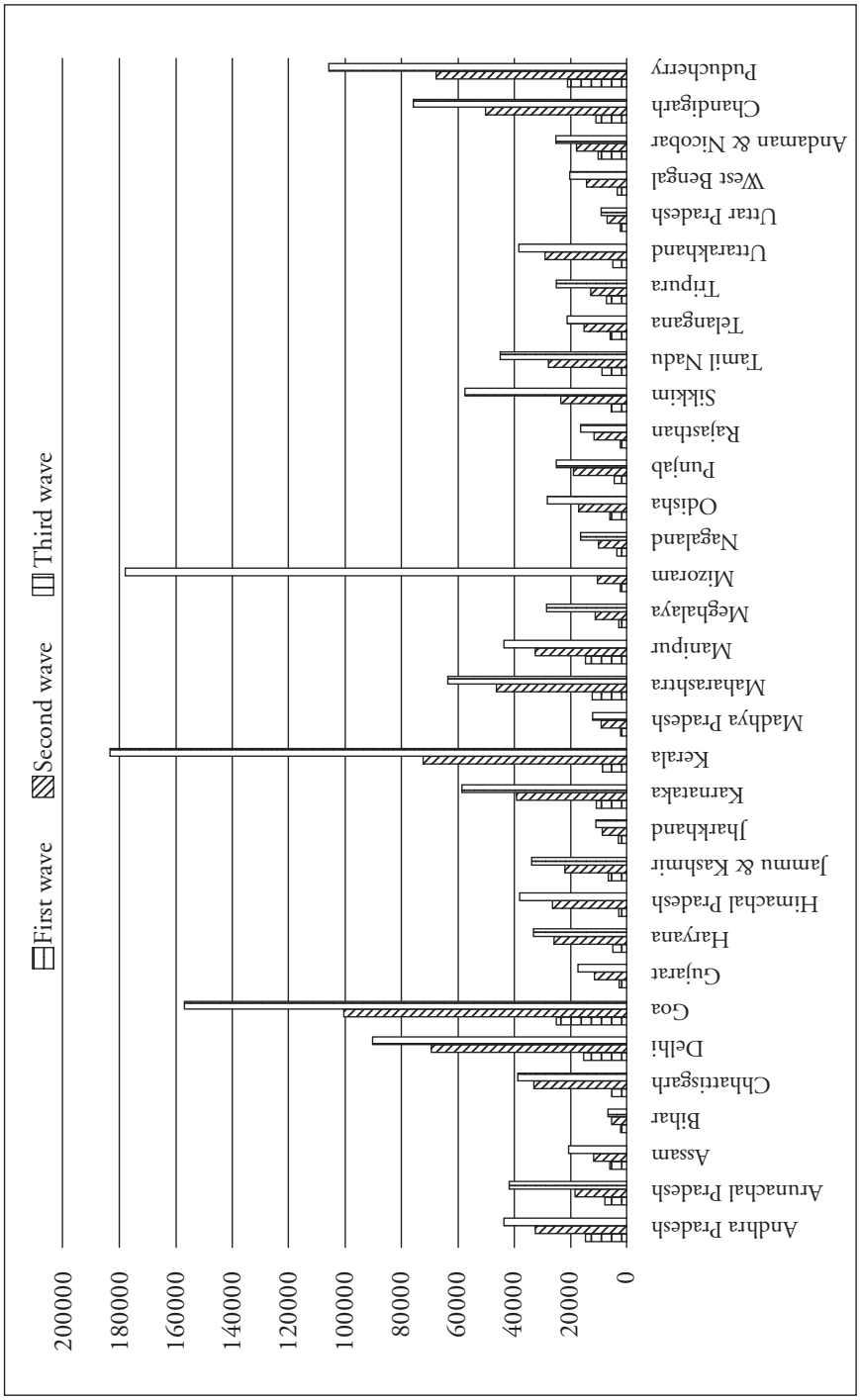
three major waves of infections, with the last surge of infections resulting in the third wave in early 2022. The state-level spread in the three waves, however, has not been uniform and shows marked disparities, as seen in Figure-3, which gives cumulative confirmed Covid-19 cases per million for 33 states and UTs of India at the end of each of the three waves. Table-1 gives the ranking of the top ten states at the end of each of the three waves. Goa, Delhi, Maharashtra, Puducherry, Chandigarh, Kerala and Karnataka are among the top ten ranked states/UTs through the pandemic. The second wave of infections saw a greater spread in Haryana, Uttarakhand, Himachal Pradesh, and Chhattisgarh. Kerala, which was successful in containing the pandemic in the early stages of the pandemic saw rising infections after the first wave ended, with a continuing high level of infections through the second wave and thereafter, so that the state ranked at the top by March 2022. The North-East states, especially Sikkim and Mizoram, saw widespread infections after June 2021, when the delta variant reached these states.

Table-1 : Top 10 Ranked States in Covid-19 Cumulative Cases Per Million at the End of First, Second, and Third Waves of the Pandemic

State Rank	First Wave (October 2020)	Second Wave (June 2021)	Third Wave (March 2022)
1	Goa	Goa	Kerala
2	Puducherry	Kerala	Mizoram
3	Delhi	Delhi	Goa
4	Andhra Pradesh	Puducherry	Puducherry
5	Maharashtra	Chandigarh	Delhi
6	Chandigarh	Maharashtra	Chandigarh
7	Karnataka	Karnataka	Maharashtra
8	Andaman & Nicobar	Chhattisgarh	Karnataka
9	Kerala	Andhra Pradesh	Sikkim
10	Tamil Nadu	Uttarakhand	Tamil Nadu

Source : Author's construction based on secondary data.

Figure-3 : State-Wise Cumulative Confirmed Covid-19 Cases Per Million Population at the End of First Wave (October 2020), Second Wave (June 2021) and Third Wave (March 2022)



Source : Author's construction based on secondary data.

Demographic features as well as urbanization and higher levels of economic development associated with greater human mobility and economic and social interactions are associated with state-level variation in the spread of the pandemic. At the end of the third wave, the states with the highest incidence of cases are Kerala, Goa, and Mizoram, besides Delhi, Maharashtra, Puducherry, and Chandigarh. These states rank high in income (Goa, Delhi, Sikkim, and Chandigarh rank highest), urban proportions (Chandigarh, Delhi, Goa, Kerala, Puducherry, Mizoram and Maharashtra), literacy (Kerala, Mizoram, Goa, and Puducherry), and non-agriculture's share in net state value added (Delhi, Chandigarh, Puducherry, Goa, Kerala, Sikkim and Maharashtra). Kerala is an outlier in the epidemiological transition, with the highest share of the elderly population, the highest literacy and a high proportion of the urban population.

While identifying the causal effects of government policy responses is difficult due to many confounding factors and endogeneity issues (Hale et al., 2021), we can establish an association between case prevalence and some state-level variables. We computed a rank correlation between cumulative cases per million in March 2022 and state-level variables like per capita net state domestic product (pcnsdp), share of value added by agriculture, forestry and mining in total value added (agrishare), proportion of urban population (urbanprop), literacy, percentage of sixty plus population to total population (elderlyprop) and population density (popdensity).

The results from Spearman's rank correlation (rho) highlighted in Table-2 report the estimated coefficients of the t-statistic and the 2-tailed p-value. The results suggest a significant positive relation between cumulative cases per million and pcnsdp, the proportion of urban population, literacy, and the proportion of elderly population, and a significant negative relation with agriculture's share in value added, indicating a robust relationship between the spread of Covid-19 and these state-level variables. Higher-income states, more urbanized states, and states with substantial contributions from non-agriculture sectors with higher literacy and a more sizeable share of the vulnerable elderly population have faced worse outcomes caused by the infectious coronavirus. The states of India vary considerably in socio-economic characteristics. Bihar, Jharkhand, Uttar Pradesh, Madhya Pradesh, and Rajasthan had the lowest spread among the Indian states, and also have the lowest pcnsdp, urban population share, literacy, and elderly population and a leading share of the agriculture sector in the state total value added.

Table-2 : Spearman's Rank Correlation Coefficient (Rho) between State-Level Cumulative Cases Per Million in March 2022 and State-Level Variables

	pcnsdp	agrishare	urbanprop	literacy	elderlyprop	popdensity
Correlation coefficient	0.60261*	-0.51761*	0.63703*	0.70962*	0.34258*	0.02173
t (31) (p-value)	4.2043 (0.0002)	-3.3603 (0.0021)	4.6013 (0.0001)	5.6075 (0.0000)	2.0303 (0.0510)	0.1209 (0.9045)

Source : Author's estimation based on secondary data

*Note : N=33 and * indicates significance at 5 % level.*

While some argue that differences in mortality across states should indicate the effectiveness of subnational policy responses (Trivedi, 2020), given the many issues with Covid-19 data, attributing outcomes to policy response and implementation in terms of case counts or some measure of mortality is a difficult exercise. Table-3 gives the top ten ranked states in cumulative cases and deaths per million people in October 2021, i.e., after the second wave ended in most states by June 2021 and after continued diffusion in Kerala and the spread of the delta wave to North-East states of the country. Table-4 gives Spearman's rank correlations of state-level variables and cumulative confirmed deaths per million in October 2021.

Again, state-level variables like pcnsdp, urbanprop, literacy, and elderlyprop are significantly and positively correlated with cumulative deaths per million, while agrishare has a significant negative association with the measure of mortality. Given that cumulative case counts and deaths vary in the same direction, the similarity in results in Tables-2 and 4 is not surprising. The ranking of states by cumulative deaths per million given in Table-3 shows that Goa, Delhi, Puducherry, and Maharashtra rank high in both cases and deaths per million. Kerala ranks at the top in cases but has a lower rank in terms of deaths, while Sikkim has a high incidence of cases but does not rank among the top ten states in deaths per million. While Covid-19 outcomes across states are associated with socio-economic factors, variations in mortality from Covid-19 in India across states have been related to the robustness of the prevailing public health system. Balakrishnan and Namboodhiry (2021) find evidence that differences in state-wise mortality were influenced by the level of public health

Table-3 : Top 10 Ranked States in Covid-19 Cumulative Cases Per Million and Cumulative Deaths Per Million in October 2021

State Rank	Cumulative Cases Per Million (October 2021)	Cumulative Deaths Per Million (October 2021)
1	Kerala	Goa
2	Goa	Delhi
3	Mizoram	Puducherry
4	Puducherry	Maharashtra
5	Delhi	Kerala
6	Chandigarh	Chandigarh
7	Maharashtra	Uttarakhand
8	Sikkim	Manipur
9	Karnataka	Sikkim
10	Andhra Pradesh	Karnataka

Source : Author's construction based on secondary data.

Table-4 : Spearman's Rank Correlation Coefficient (Rho) between State-Level Cumulative Deaths Per Million in October 2021 and State-Level Variables

	pcnsdp	agrishare	urbanprop	literacy	elderlyprop	popdensity
Correlation Coefficient	0.5876*	-0.5635*	0.5963*	0.7719*	0.3376**	0.02163
t (31) (p-value)	4.0429 (0.0003)	-3.7978 (0.0006)	4.1353 (0.0003)	6.7614 (0.0000)	1.9967 (0.0547)	0.7091 (0.4836)

Source : Author's estimation based on secondary data.

*Note : N=33 and * indicates significance at 5% level and ** indicates significance at 10% level.*

expenditure. While state expenditure on healthcare varies significantly across states, richer states spend a lower proportion of their GSDP on healthcare. Bihar, Uttar Pradesh, Chhattisgarh, Assam, and Himachal Pradesh have lower per capita income than Delhi, Kerala, Haryana, Goa, and Maharashtra but spend a larger share of GSDP on healthcare (Government of India [GoI], Economic Survey, 2021). Thus, higher-income states that have faced worse

outcomes and saw greater spread and higher mortality in the Covid-19 pandemic spend less on healthcare as a matter of choice while not being dictated by financial constraints, thus pointing to the need for a radical restructuring in priorities and budgetary allocation for health (Balakrishnan & Namboodhiry, 2021).

The Covid-19 pandemic saw many challenges for policy-making and offers useful lessons for public management in a crisis. While the strong central response in March 2020 was criticised by many as harsh and heavy-handed, it was praised as being timely, comprehensive, and robust by WHO (Lancet, 2020). A strong executive, the use of hortatory tools in public messaging, and a collective national response attributed to a 'rally around the flag' phenomenon all contribute towards the containment of a health crisis (Singh, 2023; Altiparmakis et al., 2021; Yen et al., 2022). The sudden lockdown brought to the fore the challenge of reconciling health and economic outcomes. The false sense of optimism following the success in dealing with the first wave of infections lulled central and state governments into complacency, and the sudden mutation of the virus as well as the delay in imposing more stringent restrictions led to a serious health crisis in the second wave.

The successful development and administration of vaccines were crucial to the containment of the Covid-19 pandemic. India leveraged its many strengths, including the historical role of state capacity in strengthening the innovation system, its history of successful immunisation programmes, and scientific and technological strengths that permitted indigenous development of vaccines, production at scale, and the use of data-driven technology platforms for efficient supply chain management and delivery of vaccines to over a billion people.

Historically, in post-independent India, the state was envisaged to play a leading role. The initial centralized nature of the response and the subsequent emergence of states as key actors establish the resilience of existing federal structures of governance in response to a sudden exogenous shock (Singh, 2023). The reliance on subnational-level containment measures after June 2020 represented an adaptive response to minimise economic losses and deaths. As the virus enters the endemic stage, managing future waves requires identifying new strains, developing booster doses for new variants, and nudging society towards protective behaviours like wearing masks and distancing measures that have minimal social and economic costs (Petherick, 2021).

The significant variation in the state-level spread of the pandemic has valuable lessons for managing a health crisis. India has a federal structure that comprises 28 states and eight union territories (UTs). Health is a state subject and therefore expenditure on healthcare by states assumes centrality in the light of a health crisis. According to the 2017 National Health Accounts, states accounted for 66 per cent of healthcare spending. However, budget allocation for healthcare by states remains low, and there is considerable variation across states in their expenditure on healthcare, with richer states spending a lower proportion of their GSDP on healthcare. Thus, there is a need for appropriate budgetary restructuring with a greater focus on health in the spending priorities of states (Government of India [GoI], Economic Survey, 2021; Balakrishnan & Namboodhiry, 2021).

Government budget allocation for healthcare in India is among the lowest in the world, with India's ranking at 179 out of 189 countries (Government of India [GoI], 2021, Economic Survey). Greater prioritisation of healthcare and increased budget allocation in central and state budgets can significantly improve access and quality of healthcare in India (Balakrishnan & Namboodhiry, 2021). The pandemic reinforces the need to build strong public health systems, especially primary healthcare, rooted in local communities and local governance systems.

Conclusion

India has shown greater resilience than most countries and was one of the fastest-growing major economies in fiscal year 2022–23 (World Bank, 2023). The Covid-19 pandemic has demonstrated a crucial role for government policy and management in determining pandemic outcomes. The speed, strength, and coherence of policy responses and interventions are of utmost importance in dealing with a crisis. The early adoption of NPIs in India prevented an immediate health crisis, whereas timely vaccine coverage provided herd immunity, protected vulnerable at-risk populations, and enabled a return to normal life. Scientific expertise, technocratic forms of governance, and the use of digital platforms like the AarogyaSetu App and CoWIN for surveillance, monitoring and vaccine rollout enabled a data-driven approach that became central to policy response and the effective handling of the health crisis. Reconciling trade-offs through the implementation of social policies designed in response to challenges from the crisis and nurturing social and civic solidarity foster trust and compliance in dealing with a national crisis.

The crisis has demonstrated that India's federal institutions are relatively resilient, especially at the subnational level (Singh, 2023). The crisis offers useful lessons for coordinating central and decentralised decision-making and a whole-of-government approach to effective public management (Trivedi, 2020). Institutional reforms that enhance state capacity and strengthen local administrative machinery can improve the efficacy of policy frameworks. At the same time, enhancing the capacity of the healthcare sector, investing in primary healthcare infrastructure, and addressing inequities in healthcare and other basic needs must form an essential part of a preparedness strategy to cope with any future health crisis.

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The Journal of Institute of Public Enterprise, July-December, 2023, Vol. 46, No. 2
ISSN : 0971-1864.

Efficiency of Public Road Transport in Rajasthan : Using the Data Envelopment Analysis Approach

Devinder Singh Hooda* & Nitisha Sehrawat**

The key purpose of the paper is to examine the efficiency of state transport undertakings in Rajasthan state. This paper seeks to analyse the general status of public transport in the state and the efficiency of the Rajasthan state transport undertaking. The Rajasthan State Road Transport Corporation (RSRTC) is run by the state government which is the largest service provider of intercity buses that connect with the different districts of Rajasthan and its neighbouring states. The Data Envelopment Analysis (DEA) technique has been applied to measure the efficiency score. In the DEA approach, the Charness, Cooper and Rhodes (CCR, 1978) and Banker, Chames and Cooper (BCC, 1984) models were applied to calculate the overall technical efficiency (OTE) and pure technical efficiency (PTE). The efficient DMUs were set as a benchmark unit for inefficient units to make them efficient. The average efficiency score of OTE, PTE, and scale efficiency (SE) for Rajasthan roadways is 0.83, 0.84 and 0.98. The study found the total average efficiency for all the depots on Rajasthan roadways in 2020–21 is 0.88. Data Envelopment Analysis (DEA) suggested that if a DMU is inefficient, it can improve its efficiency score only by making the changes in its output and input assumed to be constant. Therefore, the efficiency score indicated that there are only 12 percentage points of improvement required in output. The study recommends that for long-term efficiency, the most efficient depots should act as benchmark units for inefficient depots.

Originality/Value : *The present paper considers 50 large-size depots (large in fleet and daily passengers carried) in Rajasthan for evaluating efficiency for the period 2020–21. The results of the study conclude that public transport should be exhilarated by the government so that it may reduce congestion on roads and pathways towards sustainability.*

Keywords : Decision Making Units, Efficiency Units, Fleet Size, Public Transport, Technical Efficiency.

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Introduction

The transport sector is crucial for a nation's growth and development, with three major modes: railways, roadways, and airways. Road transport is essential for mobility, with public and private operators involved. State road transport operations are the source of public transport, formed as statutory corporations with the goals of economy, efficiency, and safety. Separate state transport undertaking have been developed in practically every state of the nation to address people's transport demands (Aneja & Sehrawat, 2022; Hooda & Sehrawat, 2023). State undertakings cater to public needs, while private operators compete, leading to congestion and environmental degradation. Public transport leads to sustainability and reduces the number of private vehicles, making it accessible and economical for all the sections of the society. Economic activities have increased due to this, increasing the demand for transport. Public road transport is associated with various aspects of economic development and affects almost every sector, including railway and airway modes. State transport undertakings provide inter-bus services in major Indian cities, accounting for 62 per cent of trips, a higher percen-tage than in Beijing, Chicago, and London, according to Gopinath Menon and Chin (2004). India's state transport undertakings handle 62 per cent of trips, requiring significant investment but not yet reaching profitability (Singh, 2017). Urbanisation began before independence but gained momentum after 1991, with the urban population increasing from 11.4 per cent in 1901 to 31.16 per cent in 2011. The main focus after independence was connecting rural areas to urban cities, with a total of 1811 billion passenger kilometres in 1993-94.

This paper aims to analyse and evaluate the efficiency of public transport in Rajasthan. The transport corporation commenced operations in the state on October 1, 1964. The Rajasthan State Road Transport Corporation (RSRTC) introduced several types of buses. RSRTC, with around 5,000 buses in 56 depots, serves 33 Rajasthan districts and their destinations. In 2020-21, it won the Transport Minister Road Safety Award for the lowest accident rate due to the transport minister's efforts in ensuring road safety. The RSRTC experienced significant growth in its first 25 years, with a fleet of 5,000 fleets and a considerable increase in depots from 10 to 56. However, a major strike in 1990 severely impacted its performance. The chairman, Kaurani, made efforts to improve efficiency, and the paper aims to assess the depot-wise efficiency of the RSRTC.

Literature Review

There are some eminent researchers related to the transport sector, and their contribution is commendable in this area. Road transport is a crucial mode of transport for urban and rural linkages (Agarwal, 2010). The importance of public road transport is not limited to the mobility of people; moreover, it is also contributing to employment in the form of administration and workshop staff. (Agarwal et al., 2010, 2014; Balenzentis, A., & Balenzentis, 2011; Kumar, S.S., & Vankatesh, 2004; Padam & Singh, 2011) contributed significantly in the area of public transport and productivity. In India, there are around 64 state transport undertakings that are used for public road transport. The motivation behind the study is to explore the depot-wise efficiency of Rajasthan state. While calculating the technical efficiency of decision-making units, a vast disparity among their efficiency scores was found. (Kumar, S.S., & Venkatesh, 2004). A lot of research has been done to evaluate the efficiency and productivity of different state transportation undertakings. However, no tactile strive was found in the existing literature to study this within STUs, that is at depot level. (Agarwal et al., 2011; Bishnoi, N.K., 2007) tried to extract the efficiency of state transport undertakings at the national level. This study is important because it focuses on the depot-level efficiency of public transport in the state of Rajasthan. However, it is quite interesting and effective to see how various depots of Rajasthan roadways are working efficiently at the level within STU (Aneja & Sehrawat, 2022). Further, to find out the probable areas of strength and weakness, it is necessary to evaluate the depot-wise performance level of Rajasthan roadways (Hooda & Sehrawat, 2021).

The key objective of this paper is to examine the general status and the efficiency of Rajasthan state transport undertaking. Based on the efficiency score, an attempt has been made to identify the inefficient decision-making units. Furthermore, this paper also seeks to find out the input and output relationship.

Research Methodology

This study employs an objective-specific technique to assess the effectiveness of fifty operational depots owned by the RSRTC. The Rajasthan statistics abstract and the yearly transport department reports were the sources of secondary data. Efficiency is associated with production, with input and output variables chosen for efficiency evaluation. The methodological design includes processes for selecting input

and output variables, ensuring a thorough grasp of the system's efficiency.

1. To extract the efficiency score of Rajasthan roadways at the depot level, the first step is to identify the homogeneous units for efficiency evaluation. The study considers fifty depots of RSRTC as homogeneous decision-making units and the period of this study is 2020-2021.

2. Selection of suitable inputs and outputs.

Fleet size refers to the total number of buses in excellent condition, sometimes mismatched owing to breakdowns or delays in maintenance and repairs. Staff represent a variable in organisations that affects the serviceability of state transport undertakings. It covers all employees, whether contractual or permanent, as well as management, administrative and labour-class members. Fuel consumption is the total amount of fuel consumed by a bus in a single day, indicating the ratio of effective kilometres driven to total fuel consumption. A sizable proportion of travellers rely on public transit for their daily necessities. While bus utilisation refers to the overall effective bus kilometres driven by buses on a particular day, the combined number of passengers is employed to measure the serviceability of state transport initiatives.

Results and Findings

After identifying the inputs and outputs for efficiency analysis, Table-1 represents the concerned data for Rajasthan roadways for the year 2020-21.

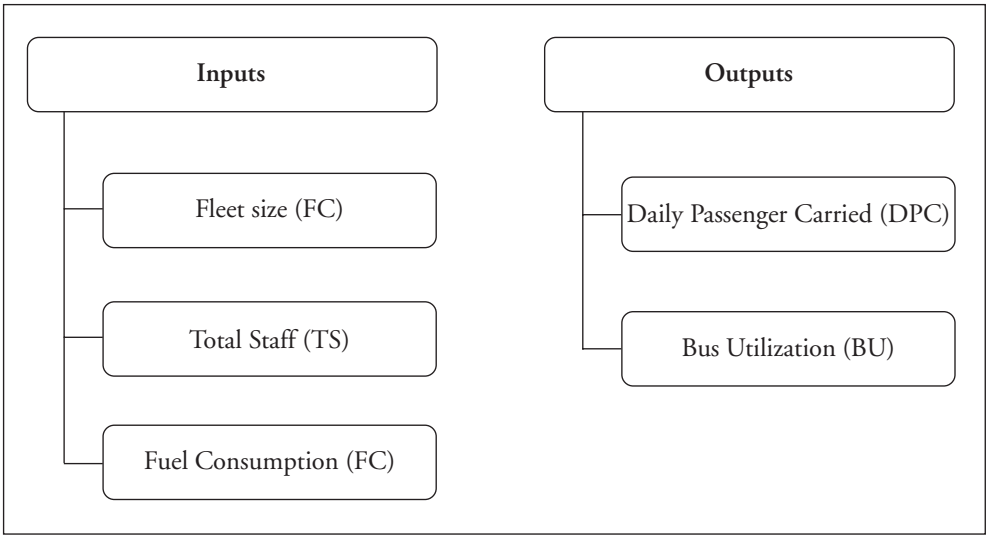

Table-1 : Depot-wise Observed Data of Rajasthan Roadways for 2020-21

Depots	Outputs		Inputs		
DMUs	**DPC***	**BU**	**FS**	**FC**	**TS**
Abu Road (R1)	13.27	358	44	5.26	110
Ajaymeru (R2)	28.93	304	85	5.22	251
Ajmer (R3)	23.38	319	86	5.31	290
Alwar (R4)	44.25	328	108	5.27	421
Anoopgarh (R5)	28.2	386	59	5.26	171
Banswara (R6)	20.34	360	70	5.14	229
Baran (R7)	20.03	33	75	5.23	213
Barmer (R8)	22.22	426	70	5.46	194
Beawar (R9)	24.79	397	78	5.3	193
Bharatpur (R10)	26.11	342	72	5.35	335
Bhilwara (R11)	27.6	377	98	5.33	263
Bikaner (R12)	33.88	410	91	5.28	334
Bundi (R13)	18.76	309	58	5.32	220
Chittorgarh (R14)	25.57	359	92	5.28	290
Churu (R15)	28.55	346	66	5.33	192
Dausa (R16)	18.47	331	47	5.52	248
Dholpur (R17)	19.29	385	61	5.33	260
Didwana (R18)	20.68	323	51	5.34	166
Dungarpur (R19)	17.64	361	69	5.13	235
Falna (R20)	12.03	273	37	5.21	108
Ganganagar (R21)	42.32	360	100	5.3	304
Hanumangarh (R22)	66.54	371	100	5.24	298
Hindaun (R23)	19.5	328	61	5.26	203
Jaipur (R24)	29.53	472	118	5.29	578
Jaisalmer (R25)	8.12	466	29	5.26	88

(Contd...)

Jalore (R26)	17.79	320	64	5.21	162
Jhalwar (R27)	20.03	338	89	5.27	212
Jhunjhunu (R28)	38.84	388	85	5.38	347
Jodhpur (R29)	26.94	371	108	5.32	335
Khetri (R30)	18.67	383	57	5.23	205
Kota (R31)	21.98	357	87	5.29	318
Kotputli (R32)	23.87	316	58	5.29	208
Lohagarh (R33)	22.06	329	73	5.2	324
Matsya Nagar (R34)	27.85	376	84	5.26	292
Nagore (R35)	29.04	423	83	5.33	311
Pali (R36)	28.46	389	63	5.19	172
Phalodi (R37)	18.87	379	55	5.4	144
Pratapgarh (R38)	9.85	385	33	4.98	100
Rajsamand (R39)	9.97	336	31	5.48	126
Sardarshahar (R40)	30.38	401	62	5.38	229
SawaiMadhopur (R41)	12.85	318	33	5.33	103
Shapura (R42)	22.19	269	42	5.88	183
Sikar (R43)	22.19	373	119	5.35	506
Sirohi (R44)	51.75	358	55	5.2	137
Sri Madhopur (R45)	37.96	363	45	5.28	226
Tijara (R46)	20.2	331	48	5.49	174
Tonk (R47)	27.77	313	83	5.46	286
Udaipur (R48)	25.07	412	103	5.19	360
Vaishali Nagar (R49)	40.96	360	108	5.25	509
Vidyadhar Nagar (R50)	29.65	273	56	5.83	321
Mean Value	**25.5038**	**351.7**	**70.98**	**5.3138**	**249.68**

Source : Statistical Report of Rajasthan Transport.

*DPC in lakhs

Selection of Model

This study examines the efficiency scores of 50 depots in Rajasthan, which are homogeneous decision-making units. A non-parametric technique called Data Envelopment Analysis (DEA) is employed to extract the efficiency score of each DMU. The CCR model, introduced in 1978, calculates overall technical efficiency based on a constant return to scale. The BCC model, developed in 1984 by Banker, Charnes, and Cooper, extracts Pure Technical Efficiency (PTE) using a variable return to scale. The DEA approach evaluates efficiency scores using two measures : input-oriented and output-oriented (Farrell, 1957). In this paper, an output-oriented methodology is employed to assess the efficiency ratings of depots in Rajasthan. The output model suggests that if a DMU unit is inefficient, it can increase its efficiency score by changing its output while keeping the input constant (Agarwal et al., 2010).

Model :

$$\text{MAX } E_k = \frac{\sum_{n=1}^{a} u_{nl} x_{nl}}{\sum_{m=1}^{b} v_{ml} y_{ml}}$$

Let there are l^{th} set of homogenous DMUs.

DMU_i = (1, 2, 3……. lth)

Each DMUs having set of inputs and outputs

Inputs, Xni; (n=1,2,3……a)

Outputs, y_{mi}; (m=1,2,3……b)

u_{nl}; weight given to input,

v_{ml}; weight given to output

The value of E_k lies between zero to unity ($0 \leq E_k \leq 1$); If $E_k = 0$ DMU considered as inefficient unit, $E_K = 1$ (fully efficient)

Efficiency Results

Selected DMUs denotes R1, R2, R3…. R50 (name of depots which are mentioned in Table-1). BCC and CCR models have been employed for examine the efficiency of Rajasthan state transport. The overall technical efficiency extracted with the help of CCR model and BCC model applied for the pure technical efficiency. Scale efficiency has been measured with the purely technical and overall technical efficiency scores of DMUs. In Table-2 it is observed that the scores of OTE and PTE are slightly different for each DMUs. The OTE score defines the efficiency of virtual output and inputs (Agarwal et al., 2010). On the same side, PTE defines the managerial efficiency of DMUs.

Table-2 : Efficiency Scores of Selected DMUs for 2020-21

DMUs	OTE	PTE	SE	DMUs	OTE	PTE	SE
R1	0.80	0.80	1.00	R26	0.73	0.75	0.98
R2	0.73	0.74	0.99	R27	0.76	0.76	1.00
R3	0.72	0.73	0.99	R28	0.90	0.92	0.98
R4	0.81	0.81	1.00	R29	0.83	0.84	0.99
R5	0.90	0.90	1.00	R30	0.86	0.87	0.99
R6	0.83	0.87	0.95	R31	0.79	0.79	1.00
R7	0.34	0.34	1.00	R32	0.74	0.74	0.99
R8	0.92	0.95	0.96	R33	0.75	0.77	0.98
R9	0.90	0.91	0.99	R34	0.86	0.86	1.00
R10	0.78	0.79	0.98	R35	0.94	0.95	0.99
R11	0.85	0.86	0.99	R36	0.92	0.94	0.98
R12	0.94	0.94	1.00	R37	0.83	0.85	0.97
R13	0.69	0.70	0.99	R38	0.88	1.00	0.88
R14	0.81	0.82	1.00	R39	0.77	0.84	0.91
R15	0.81	0.82	0.99	R40	0.92	0.94	0.98
R16	0.72	0.76	0.96	R41	0.76	0.85	0.89
R17	0.84	0.85	0.99	R42	0.69	0.70	1.00
R18	0.74	0.75	0.99	R43	0.79	0.80	0.99
R19	0.82	0.86	0.95	R44	1.00	1.00	1.00
R20	0.62	0.63	0.98	R45	1.00	1.00	1.00
R21	0.87	0.88	0.99	R46	0.74	0.77	0.96
R22	1.00	1.00	1.00	R47	0.71	0.73	0.96
R23	0.74	0.74	1.00	R48	0.92	0.95	0.97
R24	1.00	1.00	1.00	R49	0.86	0.86	0.99
R25	1.00	1.00	1.00	R50	0.64	0.70	0.91

Source : Author's calculation.

The average efficiency scores of OTE, PTE and SE for Rajasthan roadways are 0.83, 0.84 and 0.98, respectively. According to the CCR model, only five depots have an efficiency score of 1. Nineteen DMUs show that they maintain an above-average score. These are as follows : R5 (Anoopgarh), R6 (Banswara), R8 (Barmer), R9 (Beawer), R11 (Bhilwara), R12 (Bikaner), R17 (Dholpur), R21 (Ganganagar), R28 (Jhunjunu), R29 (Jodhpur), R30 (Khetri), R34 (Matsya Nagar), R35 (Nagore), R36 (Pali), R37 (Phalodi), R38 (Pratapgarh), R40 (Sadarshahar), R48 (Udaipur), R49 (Vaishali Nagar). The results exhibit that there are around 26 depots where the input and output relations could be more efficient. To make these units efficient, there should be an increment in the output. This analysis is particularly output-oriented, so inputs are assumed to be constant.

The PTE of selected DMUs is crucial for analyzing managerial efficiency (Aneja & Sehrawat, 2020). The BCC model extracts PTE scores, with OTE and PTE scores varying for each DMU. The BCC model extracts PTE scores, with OTE and PTE scores different for each DMU. PTE scores are crucial for efficiency analysis, as pre-technical efficiency is directly linked to human resources. Five DMUs exhibit overall and managerial efficiency, while R38 (Pratapagarh) is also managerially efficient. The mean PTE is 0.84, with around twenty depots needing improvement in human resources. Scale efficiency, the ratio of OTE to PTE, is used to determine the appropriate size of DMUs. The majority of DMUs are 98 per cent efficient, with an average score of 0.98, suggesting a need for minor improvements.

Based on the above results, the BCC models rank depots using CCR models, with Hanumangarh, Jaipur, Jaisalmer, and Sirohi performing efficiently. Nagore, Bikaner, Barmar, Udaipur, and Pali also rank in the top ten. Baran performed poorly, while Falna, Vidyadhar, Shapura, Bundi, Tonk, Ajmer Dausa, Ajaymeru, and Jalore needed to focus on efficiency.G

With the help of CCR models, BCC models rank the depots. In Table-3, it has been observed that Hanumangarh, Jaipur, Jaisalmer and Sirohi perform efficiently. Nagore, Bikaner, Barmar, Udaipur and Pali have also secured ranks in the top ten depots. Baran performed worst among all the depots. Falna, Vidyadhar, Shapura, Bundi, Tonk, Ajmer Dausa, Ajaymeru and Jalore need to focus their operations to become efficient units.

The descriptive statistics in Table-4 summarise the detailed data from Table-1. Here, the maximum, minimum,

Table-3 : Ranking of Top and Bottom Units

Top Ten	Rank	Bottom Ten	Rank
Hanumangarh	1	Baran	50
Jaipur	1	Falna	49
Jaisalmer	1	Vidyadhar Nagar	48
Sirohi	1	Shapura	47
Sri Madhopur	1	Bundi	46
Nagore	6	Tonk	45
Bikaner	7	Ajmer	44
Barmer	8	Dausa	43
Udaipur	8	Ajaymeru	42
Pali	10	Jalore	41

Source : Author's calculation.

Table-4 : Descriptive Statistics of Input and Output

	FS	FC	TS	DPC	BU
Max	119	5.88	578	66.54	472
Min	29	4.98	88	8.12	33
Average	70.98	5.31	249.68	25.50	351.70
SD	23.50	0.15	104.99	10.62	62.49

Source : Author's calculation.

average and standard deviation are measured. The Sikar depot has the highest number of buses (119) and the lowest fleet in Jaisalmer (29). The highest staff is at the Jaipur depot, and the lowest is at the Jaisalmer depot. The Hanumangarh depot has the highest number of buses carrying passengers, indicating a significant population reliant on Rajasthan roadways, while the Jaisalmer depot has the fewest daily passengers transported by Rajasthan roadways. All these factors highlight that the Jaisalmer depot's small operation compared to other depots suggests that people in the area are not entirely reliant on Rajasthan Roadways. The analysis reveals that

Jaisalmer, despite a few buses, staff, and passengers, has high efficiency in public transport, pointing out that the size of the operation does not significantly impact efficiency. The data's variation is observed with the standard deviation, indicating that the efficiency of Jaisalmer is not affected by its size. The standard deviation quantifies the dispersion of values from the mean value. Notably, fuel usage varied little between depots, whereas other parameters such as FS, DPC, and BU varied widely from the mean value.

The correlation matrix displays the correlation coefficients of different variables. The input and output correlation matrix in Table-5 explains the relationship between selected inputs and outputs. There is a negative relationship between fleet size and fuel consumption. The value of correlation lies between zero and one. Fleet size and total staff are both highly correlated with each other, and fleet size is moderately related to the daily passengers carried. There is a minor inverse relationship between FC and DPC. The input and output matrix effectively capture all possible values, aiding in the identification and visualisation of data patterns.

Conclusion

This study has analysed the general status and efficiency of the Rajasthan state transport undertaking. The paper considers 50 large-size depots (large in fleet and daily passengers carried) in Rajasthan for evaluating efficiency during 2020–21. It reveals that Rajasthan roadways have OTE, PTE, and SE scores of 0.83, 0.84, and 0.98 for 2020–21. The total average efficiency score is 0.88, indicating a 12-point improvement in output. The output model suggests that a DMU unit can enhance its efficiency score by altering output and input, which are assumed constants. The study, using descriptive statistics and efficiency

Table-5 : Correlation Matrix of Input and Output

	FS	FC	TS	DPC	BU
FS	1.00	-0.16	0.85	0.53	0.17
FC	-0.16	1.00	0.05	-0.01	-0.18
TS	0.85	0.05	1.00	0.46	0.18
DPC	0.53	-0.01	0.46	1.00	0.12
BU	0.17	-0.18	0.18	0.12	1.00

Source : Author's calculation.

scores of DMUs, points out that the size of the operation does not matter in terms of efficiency. Jaisalmer's public transport operation is small, but its efficiency is low due to inefficient use of inputs and outputs. To enhance productivity, new buses and additional staff should be introduced. Top-ranking depots have an efficiency score of one, indicating good road conditions compared to other inefficient depots. Infrastructure significantly enhances efficiency by reducing accidents, saving time, and improving fuel efficiency. All these factors indicate that policy should work on specific areas such as the construction of roads, generating job opportunities, introducing capital input (the fleet) in the public transport sector, and introducing new capital in the form of the fleet. Based on the results and discussion, the study suggests promoting public transport in the state and using efficient depots as benchmarks for long-term efficiency. Future research should focus on energy consumption, pollution, and hazardous materials in public road transport, as well as examining financial parameters like revenue and cost-benefit analysis of state transport undertakings.

Author's Contribution

Devinder Singh Hooda, *cultivated the first draft, conceptualization, methodology, cross checking and amended the references, final appraising, editing and rewriting the final draft of the paper.*

NitishaSehrawat, *writing and developing the first draft, conceptualisation, methodology, collecting and analysing the data, preliminary reviewing and writing the final draft.*

All the authors read and approved the final manuscript prepared for submission.

Conflict of Interest

The authors of the paper declare that there is no conflict of interest in relation to the research paper, authorship and publication of this article.

Funding Acknowledgements

This research paper is not funded from any funding agency

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The Journal of Institute of Public Enterprise, July-December, 2023, Vol. 46, No. 2
ISSN : 0971-1864.

The Role of Social Media Advertising for the Promotion of Brand Building through Digital Technologies : A Case Study of the State Bank of India

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SBI's journey of digital transformation commenced with the establishment of its first computerized branch in 1992. Since then, SBI has continually expanded its array of digital banking products and services. In 2013, SBI took its first steps into the realm of social media with the launch of its official Facebook handle. This was soon followed by the introduction of other social media handles of Youtube, Twitter, LinkedIn, Instagram and Pinterest. Moreover, SBI has also added 'SBI Mingle', 'SBI Aspirations' and 'SBI Yono' to its portfolio of digital platforms. By harnessing these diverse digital channels, SBI endeavored to cultivate a robust brand image among its existing and prospective customers, employees and the general public. Utilizing its social media handles extensively, SBI employed advertising to promote its products, services and legacy. The advertisements posted on these platforms effectively tapped into various aspects of human needs, human relations and human emotions, while some also served an educational purpose. An analysis of the efficacy of SBI's social media campaigns revealed several key factors : i) The necessity of individual bank accounts for all family members, ii) The success of India's financial inclusion campaigns, iii) The substantial customer base of SBI, and iv) The rapid growth of internet literacy in India, particularly in the domain of social media usage have prompted SBI to design its social media campaigns wisely.

Keywords : Digital Transformation, Social Media Handles, Human Needs, Human Relations, Human Emotions.

Introduction

The Honourable Finance Minister, Government of India, Mrs Nirmala Seetharaman, presented awards to State Bank of India(SBI) as the best public sector bank and digital bank runner-up for 2019-20[1] at Financial Express's India's best bank awards function held in Mumbai on August 26th, 2022. SBI was awarded second place among public sector banks on September 16, 2022, by the Finance Minister for its

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overall performance on the PSB Reforms EASE Agenda 4.0.[2] It received the top spot for tech-enabled banking and came second for smart lending, 24-hour banking and prudent banking[3].

These awards symbolized the significant influence and importance attributed to the incorporation of cutting-edge technologies, particularly digital technologies, in the operations of the SBI.Using these latest technologies and technology-enabled tools, SBI aimed to provide good value to its customers by improving its digital banking platforms and changing its processes to reduce costs and increase productivity[4]. By utilising these cutting-edge technologies, SBI sought to provide a positive customer experience by giving its customers, the option to choose from several banking channels, including internet and mobile banking[5].

It was quite fascinating to research the ways in which SBI introduced and managed various digital banking platforms and social media accounts, as well as the multiple social media advertising strategies it used to reach out to various segments of the banking population and identify the human traits that these advertisements appealed to.

Origin and Growth of State Bank of India

i) Origin

The Bank of Calcutta was founded in 1806 and is credited as the forerunner of the State Bank of India (SBI)[6]. The Bank of Calcutta was renamed as the Bank of Bengal in 1809. The Bank of Bombay was established in the year 1840 and the Bank of Madras followed in 1843. The Imperial Bank of India was formed in the year 1921 as a result of the merger of the Bank of Bengal, the Bank of Bombay and the Bank of Madras.

The Imperial Bank of India and the former state-associated banks were amalgamated on the recommendation of the All India Rural Credit Survey Committee to create a state-sponsored and state-partnered bank. Thus, with the passage of an Act in the Indian Parliament on July 1, 1955, the State Bank of India was established. The State Bank of India (Subsidiary Banks) Act of 1959 authorised the SBI to acquire eight former State-associated banks as subsidiaries, later renamed Associates. Since then, the bank has spread its wings and expanded across the length and breadth of the country. Its spread was such that the word 'bank' almost became synonymous with the name 'State Bank of India' in

many parts of India, even though other nationalised banks also played a significant role in their respective regions of the country.

ii) Consolidation Phase

The Indian banking system chose "consolidation" as a solution to outperform the competition and withstand the competitive pressures of the other players in the market, leverage new technologies and other skills like risk and compliance, increase capital efficiency, leverage synergies, increase the ability to absorb the losses and increase the big lending, etc.

SBI attracted attention from everyone due to its "consolidation effort" because it was the India's largest public sector bank. Consolidation largely took place in the form of mergers between SBI and its associate banks in this situation. Beginning in 2008 with the merger of State Bank of Saurashtra with SBI[7], the merger of its associate banks with SBI was completed in 2017 with the merger of its five former associate banks. During the same year, Bharatiya Mahila Bank merged with SBI[8]. Through all these mergers, SBI grew to be one of the largest banks in the world.

iii) Digital Transformation

SBI's digital transformation[9] began in 1992, with its first computerised branch in Bombay, followed by launching of its first ATM in Jamshedpur in 1993. It launched its internet banking portal in the year 2000. The first "ATM cum Debit Card" from SBI was released in the year 2002. SBI launched "SBI Freedom", its mobile banking service in the year 2009.

SBI introduced the mobile wallet 'State Bank Mobi Cash Easy' during the fiscal year 2012-2013[10]. SBI launched "SBI ePay," a payment aggregator service, during the fiscal year 2013-2014 to facilitate e-Commerce and m-Commerce transactions[11].

SBI introduced "sbiINTOUCH" during the 2014-15 fiscal year, an integrated large network of banking systems and digital and mobile platforms. Customers who used these outlets would be able to self-serve and access a variety of financial services.

SBI launched "State Bank Buddy" during the 2015-16 fiscal year as a mobile wallet and payment channel for the benefit of everyone, including SBI's customers and the general public. The wallet was available in 13 different languages.

The "SBI Pay" app, a mobile-based payment system, was launched by SBI during the fiscal year 2016-17 to allow customers to send and receive payments.

The Virtual Payment Address system and the National Payments Corporation of India's Unified Payment System were the foundations of the "SBI Pay" app. SBI developed yet another updated digital technology product during this year. 'State Bank MobiCash in 'assisted mode" was launched in collaboration with Bharat Sanchar Nigam Ltd to bring the benefits of digitalization to rural areas.

SBI Yono,' a banking and lifestyle app, was launched by SBI during the fiscal year 2017-18[12]. The first entirely digital service platform in India – 'SBI Yono', was an 'integrated omni channel digital service platform.'[13] A thorough business to customer marketplace was developed to help expedite Yono's customers with their banking and other lifestyle needs. The Yono was established not only to offer banking services but also other financial products that include investments, insurance, credit cards, and lifestyle necessities like "booking & renting cabs, entertainment, eating experience, travel and stay, medical needs, etc."[14]

In addition to its long-standing banking operations through physical branches, SBI now offered its goods and services on a variety of platforms, including ATMs, online banking, social media channels, mobile banking and digital banking.[15] SBI used several traditional and digital communication channels to provide all its stakeholders with accurate information about its activities, performance, and product efforts[16].

iv) Key Indicators

According to the SBI Annual Report 2021-22, by March 31, 2022, SBI had 467.7 million customers, 22,266 branches, 142.0 million financial inclusion accounts, and 65,030 ATMs, including 12,872 automated deposit and withdrawal machines (ADWMs). SBI had a market share of 27.58 per cent in debit card spending, 15.15 per cent in the number of POSs and 95.5 per cent in alternate channel transactions.

Usage of Social Media Channels

SBI had been astute in utilising information technology to provide services to its customers. For interaction and communication with its current and prospective customers, the bank used a variety of social media platforms like Facebook, Twitter, YouTube, Linkedin, Instagram and Pinterest. SBI's journey with social media began in 2013. SBI used social media channels in a phased manner to address its enormous customer base and potential customers.

The bank began its social media journey with Facebook, which was launched on November 7, 2013. This was followed by the launch of SBI's

YouTube channel on January 23rd, 2014 and the launch of SBI's Twitter handle on April 4th, 2014. In September 2015, SBI launched Instagram and Pinterest handles in an effort to further expand its presence on social media channels.

The goal of SBI's social media handles, which included its Linkedin handle as well, to interact with its tech-savvy younger customer base. These handles allowed users to access SBI through all the major social media platforms. The creation and execution of the SBI's integrated marketing initiatives were under the purview of the marketing and communications division. The bank's public relations efforts, product marketing, brand promotion, and other digital initiatives were handled by this division.

SBI sought to create a positive brand perception for the bank by hiring the services of a reputable PR firm. The SBI's social media branding initiatives included continuously streaming online videos to educate viewers about the company's products and services, developing the bank's profile, emphasising the latest offers, sharing updates and offering message services, etc.

i) Facebook

SBI's Facebook page offered links to a variety of live events, including press conferences, panel discussions, conclaves on current issues in banking and other fields, guest lectures, special lectures and updates on the company's goods and services and advertised various co-branding offers, etc. Aside from sharing news about events sponsored by SBI, the SBI Facebook page also posted images and videos of those events besides advertisements of SBI. Also, SBI's Facebook page featured videos of consumer testimonials.

ii) Booming Followers

In addition to using its Facebook page extensively, SBI also used its handles of Pinterest, Linkedin, YouTube, Twitter and Instagram to firmly establish its brand "SBI." SBI improved customer service through the usage of these social media channels. In order to reach a wide number of potential applicants, SBI also used these social media channels, Linkedin, Facebook and Instagram, to publicise its recruitment advertisements[17]. SBI also utilised these social media handles to raise consciousness among its staff and the general public on some themes of national importance[18].

As of 2021-22, SBI's Facebook handle had 17.7 million plus followers, LinkedIn handle had 2.3 million plus followers, Instagram handle had 2.1 million plus followers, Twitter handle had 4.4 million plus followers and

YouTube handle had 4,00,000 plus subscribers[19].

Consequently, SBI achieved the distinction of possessing the maximum number of Facebook and Twitter followers among all the banks of the world. In addition, SBI achieved the feat of having the maximum number of Instagram and LinkedIn followers among all the Indian banks.

Other Digital Platforms

i) SBI Aspirations

The SBI introduced an energetic internal social media platform named 'SBI Aspirations' with the objective of fostering collaboration among its employees to enhance productivity, innovation and knowledge. This social media platform also aimed at promoting a synergetic work culture while offering solutions. Notably, 'SBI Aspirations' found extensive usage by senior executives including the chairman of the bank to effectively communicate with all the employees.

ii) SBI Mingle

In July 2016, the SBI introduced 'SBI Mingle,' a pioneering social media platform designed exclusively for 'Facebook' and 'Twitter' users.

'SBI Mingle' commenced its journey by offering essential services such as balance enquiry, mini statement, and funds transfer. However, the bank envisioned expanding its service offerings in the future. Subsequently, SBI planned to introduce numerous other services, including cheque book requests, cheque processing stoppage, mobile banking and internet banking registration, SMS alerts registration and ATM/debit card blocking capabilities.

Social Media Advertising Campaigns

SBI's social media advertising campaign involved the dissemination of video advertisements showcasing its products, services and rich legacy across multiple social media handles. These advertisements skillfully appealed to various facets of human needs, human relations and human emotions.

Certain advertisements subtly endorsed SBI's products and services, embedding the core theme within the narratives centered around 'human needs,' 'human relations,' and 'human emotions.' On the other hand, others employed direct portrayal of various characters to effectively communicate the intended message.

Furthermore, SBI's social media handles featured advertisements with a vital social awareness aspect. Specifically, some of these advertisements served to raise public awareness about cybercrimes

and imparted knowledge on vigilance against such criminal activities by offering safety tips.

i) 'Friendship' Advertisement

A promotional campaign, designed to emphasise the significance of understanding mutual needs within the context of friendship, portrayed a boy and his pet dog.

The promotional campaign delineated a young man regularly escorting his pet dog to a local park, engaging in joint jogging sessions. Initially, during their early years of development, the boy and the dog ran alongside each other. However, as the boy transitioned into adolescence, he chose cycling as his mode of transport and the dog skilfully accompanied him in close proximity. Subsequently, upon reaching adulthood, the young man chose to jog on a designated track, but his aging pet dog found it hard to maintain pace due to its advancing age.

Amid his concerns for his loyal pet dog, incidentally he came across a SBI advertisement prominently featuring the bank's name and logo within a newspaper, which being read by a person sitting on a cement bench in the park. The subsequent scene portrayed the young man driving a car apparently taking a loan from SBI. The advertisement culminated with the depiction of the young man driving his 'Pet Dog' apparently in the recently procured car, accompanied by the concurrent appearance of the tagline, 'SBI – That's What Friends Are For'.

The advertisement indirectly mentioned how the concept of friendship proficiently tended to the needs of the needy within the interplay involving the young individual and his pet dog. Concurrently, it subtly emphasized how the SBI, positioned as a 'support in times of necessity,' effectively catered to the requisites of the customer, in a manner that demonstrated enhanced efficacy.

ii) 'NRI Banking Needs' Advertisement

In the first advertisement within a series focused on NRI banking needs, emphasized the emotional aspect of a 'marriage event' about to take place in a family. The advertisement depicted a scenario where an argument arose between the bride's father and her brother, who resided in New York, regarding the brother's arrival in advance from the USA to attend the wedding in India.

In the video call between the father and the son, the father expressed his concern over his son's late arrival (just two days before the marriage) and criticized

him for not planning in advance. He outlined a list of activities, including opening a bank account, which the son would have to attend upon his arrival, leaving him with limited time to spend with the family during the marriage celebrations. To this, the son responded by showcasing his preparedness, stating that he had already opened the SBI account from New York itself. He displayed his mobile, revealing the SBI account homepage and logo and confidently asserted that all banking-related tasks could be efficiently handled from his current location (New York).

The advertisement concluded with a voice message highlighting the convenience of opening an SBI account from anywhere in the world, thanks to SBI's NRI services.

The advertisement revolved around highlighting the functioning of SBI NRI services in expanding banking convenience over vast international areas. This applicability remained pertinent even within the realm of momentous life events like family weddings. Thus, the advertisement proficiently conveyed the inherent convenience and worldwide reach intrinsic to SBI's banking solutions tailored to cater to the needs of NRIs.

iii) 'SBI Maestro Debit Card' Advertisement

In another advertisement that featured on SBI's YouTube handle, the focus centered around 'human needs,' 'human relations' and 'human emotions.' The theme of the advertisement revolved around the heart warming relationship between a 'grandmother' and her two grandsons.

In the advertisement, the elder grandson attempted to impress his grandmother by astutely fulfilling her age-related needs, such as gifting her a walking stick, pain relief spray and fruits, to alleviate her knee problems. He seemingly borrowed the idea from his younger brother, who had initially planned to purchase these items to ease the grandmother's discomfort from knee joint pains. Unfortunately, the younger grandson encountered difficulty in locating an ATM to withdraw money for the purchases and by the time he returned home with the gifts, the elder brother had already presented the gifts and received the grandmother's praise.

Later, while walking through the market street, the younger brother was captivated by a 'good shawl' and desired to gift it to their grandmother on her birthday to keep her warm during the winter. However, he faced the same challenge of finding an ATM, only to

discover it was closed. Meanwhile, the elder brother effortlessly purchased the shawl using the SBI maestro debit card and handed it to his younger brother to present to their grandmother. In response to his younger brother's curiosity about how he always managed things so efficiently, the elder brother explained that the SBI maestro debit card could also function as a daily shopping card, allowing him to make payments for purchases without handling cash. The subsequent scenes showcasing the younger grandson presenting a shawl to their grandmother, thereby eliciting her appreciation and commendation on this particular occasion.

The advertisement concluded with a voice message asserting that the 'SBI Maestro Debit Card' is akin to having 'New Cash,' emphasizing its convenience and versatility for seamless daily shopping transactions.

The advertisement highlighted the convenience and adaptability of the SBI maestro debit card in facilitating swift and cashless transactions, while also emphasising the significance of considerate gestures within family relationships.

"To be Nice on 'Social Media'" Advertisement

SBI launched a distinctive video campaign that urged the public to exhibit kindness on 'social media' as in their personal interactions. This initiative, directed towards 'societal change,' implored people to maintain a calm and polite demeanor when engaging on social media platforms. The advertisement featured a man who displayed exemplary kindness in his offline interactions with the people around him but underwent a notable behavioral shift when he went online, transitioning from 'nice' to 'rude.'

The video campaign highlighted this change in behavior, emphasizing the importance of treating others with equal kindness and respect on 'social media' as one would do in 'personal life.'

v) 'Cyber Security' Advertisements

SBI, through its social media advertisements, frequently imparted essential safety tips to its valued bank customers on 'Cyber Security.'

a) 'Not to Share Vital Details' Advertisement

In one of its advertisements, SBI adopted a gentle approach to alert customers about the importance of remaining vigilant during online banking activities. The advertisement conveyed its message through well-defined characters, providing a romantic analogy to illustrate the significance of safeguarding personal information.

In a poetic manner, the advertisement advised online banking customers to share love but refrain from sharing OTP (One-Time Password), to give heart while keeping their PIN details confidential and to spread smiles without divulging CVV (Card Verification Value) and password information.

By skillfully incorporating these 'romantic elements of life,' the advertisement subtly emphasized the need for customers to exercise prudence and care when engaging in online banking transactions.

b) 'Not to be Greedy' Advertisement

In another advertisement, SBI highlighted the perils of succumbing to the human weakness of 'greediness,' cautioning online banking customers against falling prey to this vulnerability. The advertisement portrayed scenarios where customers could be enticed, diverted and tempted by cybercriminals, leading to potential financial losses if they were not vigilant against such malicious activities.

The advertisement demonstrated how a gang of cybercriminals exploited the human weakness of 'greediness' to defraud online banking customers, ultimately resulting in monetary losses. Concluding with a crucial suggestion, the advertisement advised viewers not to open 'Unauthorised APPs,' 'Unknown Links,' or 'Unsecured Websites.' By adhering to these safety measures, customers could effectively safeguard themselves against potential cyber threats.

An Analysis

SBI, being the oldest and largest public sector bank in India, enjoyed certain advantages due to its legacy and size. As a result, customer perceptions of the bank and its reliability were influenced by these factors. SBI's pioneering approach in embracing computers and digitalization in the Indian banking sector proved to be highly beneficial in catering to its extensive customer base of over 45 crores.

Moreover, in the rapidly technologically advancing Indian society, the widespread use of the internet, particularly social media, significantly impacted bank customers. Given the scarcity of time, reluctance to transact in physical queues and the wide availability of computers and mobile phones, online banking customers became increasingly exposed to internet advertisements, particularly social media campaigns. In such a digital environment, marketing communications played a crucial role in the bank's publicity strategy.

The Marketing and Communications department of SBI took care of the brand promotion, product marketing, public relations activities of the bank and digital initiatives of the bank. The success of the government's financial inclusion campaigns, coupled with the evolving roles of family members in a fast-changing society, drove SBI to tailor its social media campaigns around 'human needs,' 'human relations' and 'human emotions.' This approach successfully appealed to the 'family needs,' 'family relations' and 'family emotions' of the targeted groups, particularly in a still more traditional segments of Indian society.

India comprise of 28 States and 9 Union Territories and there are 22 major languages recognized by the Constitution of India in its 8th Schedule[20]. Besides these official languages, there are numerous vernacular languages and dialects spoken daily across the country. However, SBI's internet and social media advertisements primarily used only two languages - English and Hindi. To ensure wider comprehension and effectiveness of advertising, it is imperative for SBI's internet and social media advertisements to be made available in different local languages, catering to the diverse Indian population, especially those who are not well-versed in Hindi or English.

Despite the rapid penetration of the internet in rural areas of India, which constitute more than two-thirds of the Indian population[21], the rural internet penetration amounted to slightly under 40 per cent, contrasting with the urban penetration that exceeded 60 per cent. Nevertheless, in absolute numerical figures, the rural regions boasted 351 million users, surpassing the 341 million users recorded in urban localities[22]. However, there are still challenges in the form of internet know-how and language barriers in the form of understanding English and Hindi communications. To address this, SBI can establish social media handles in various Indian languages and post advertisements in respective languages, facilitating better communication with its audience and achie greater advertising effectiveness.

Future Perspective

SBI has been committed to accelerate its digital program, which includes expanding the scope of the Yono App and leveraging advanced analytics[23]. By making use of the advanced analytics the bank aims to gain a deeper understanding of internal data and optimize its usage for maximum benefit[24].

As part of its digital transformation, SBI plans to modify the scope of 'Yono mobile application' to evolve it into a complete digital bank[25]. To bolster its

digital banking operations, the SBI has appointed Mr. Nitin Chugh as Deputy Managing Director and head of digital banking[26].

SBI places significant emphasis on promoting financial and digital literacies to support people and safeguard them from frauds etc.[27]

In the Indian context, an analysis of the demographic distribution of internet users according to age-based categorisation[28] has revealed an anticipated significant alteration in the distribution trend during the period of 2019-25 in comparison to the period of 2013-19. Within the time frame of 2013-19, the segment of individuals aged 12-17 constituted 34 per cent of the total, while those aged 18-34 accounted for 31 per cent. Individuals falling within the age range of 35-54 constituted 29 per cent and those aged 55 and above comprised 7 per cent of the total internet users. However, the projected distribution for the period 2019-25 indicates a shift to 19 per cent for the age group below 12-17, 14 per cent for the 18-34 age bracket, 40 per cent for individuals aged 35-54 and 26 per cent for those aged 55 and above.

This observable change would yield a significant influence on the manner in which the SBI would tailor its approach in designing the social media advertisements to address distinct audiences within varying age-groups. The integration of technological expertise, proficiency in digital banking, robust cybersecurity protocols and analogous deliberations assumed a crucial necessity for the upcoming Internet promotional campaigns undertaken by the financial institution. This necessity is especially pronounced in relation to the bank's social media advertising endeavours, given the requi-site alignment with the evolved distribution patterns of internet utilization among discrete age-group cohorts of customers.

The RBI introduced the digital rupee (e₹) or eINR or E-Rupee as a tokenized digital version of the Indian rupee on December 1st, 2022. SBI, along with three other Indian banks, played a pivotal role in piloting this central bank digital currency (CBDC) in four cities of Mumbai, New Delhi, Bengaluru and Bhubaneswar. The service is set to be extended to several other cities like Ahmedabad, Gangtok, Guwahati, Hyderabad, Indore, Kochi, Lucknow, Patna and Shimla. The digital rupee was started as an alternative to paper cash for enhanced durability and cost-effective monetary transactions[29].

This case study was written based on the secondary data sources. The secondary data was collected from various public domains, published Annual Reports of SBI, different newspapers/magazines/articles and various other internet sources etc.

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The Journal of Institute of Public Enterprise, July-December, 2023, Vol. 46, No. 2
ISSN : 0971-1864.

Unified Payments Interface Adoption and the Business Growth

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With the introduction of Unified Payments Interface (UPI), India's digital payment landscape has changed. While several scholars have researched UPI adoption from the standpoint of customers, the topic of its popularity among small businesses has received little attention. The study utilised multiple regression analysis to analyse the impact of various parameters on the adoption of UPI by small merchants in Ahmedabad and Gandhinagar. The study also investigates whether their monthly income has changed after adopting the UPI. The findings suggested that social influence and performance expectancy were significant predictors of business growth. Further, the monthly income was positively influenced after the adoption of UPI.

Keywords : Business Growth, Digital Payments, Payment Apps, Social Influence, Unified Payment Interface.

Introduction

The Government of India launched the Digital India programme with the vision of transforming India into a digitally empowered society and a knowledge-based economy (PIB, 2022). The digital journey of India is remarkable. It is worth noting that in India, the wireless subscriber base was 1142.09 million at the end of March 2022, as per the annual report of TRAI 2021–22. India had the world's second-largest internet population at 797.61 million users in 2022. Due to the increased availability of cheap smartphones and the Indian government's initiative to open the market with new telecom spectrum licences, mobile internet has played an instrumental role in India's digital progress (Basuroy, 2022).

Due to user-friendly technology, many tasks can be performed with the use of mobile phones, and the payment of goods and services without the need for cash is one of them (Yeboah et al., 2020). In this context, India's UPI real-time payments system has been revolutionary for the fintech sector. UPI has reshaped the way Indians make payments. It allows users to transfer

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money instantly from one bank account to another, be it from a customer to a business or between individuals (Kaparon, 2023).

UPI is an indigenously developed, efficient and secure system developed by the National Payments Corporation of India (NPCI) in 2016 (Prasanna, 2023). Over the years, UPI has become the default payment option due to its ease of use and interoperability (Kaparon, 2023). The majority of peer-to-peer transactions are being done with UPI these days. The Financial Express stated on January 10, 2023, citing data from the NPCI, that the UPI recorded over 7.82 billion transactions worth Rs.12.82 trillion in December 2022, marking an all-time high achievement since its launch in 2016. This achievement has propelled India to the forefront of global payment systems, as reported by FIS, a global financial technology leader which analyses payment patterns in 40 countries (Yadav, 2023).

UPI is providing significant growth opportunities for merchants and small vendors operating in organised and unorganised sectors in India. These vendors can receive electronic payments through UPI in a simple, secure, and affordable way. This study explores the use of UPI among small vendors, focusing on its potential to reduce transaction costs and improve cash flow management (Tamuli, 2023). It aims to understand the factors influencing UPI adoption and its impact on business growth post-UPI implementation.

Literature Review

Modern and digitally advanced technologies, especially mobile payments, have transformed the payment ecosystem worldwide. Research on the use of mobile payments is on the rise. Many researchers from diverse countries and disciplines have contributed to this phenomenon by presenting different perspectives from stakeholders towards this payment option. As per Oh (2006), studying electronic payment systems from a stakeholder perspective can lead to a better understanding of the diffusion process of the systems. Consumers, merchants, financial institutions, and infrastructure providers are all stakeholders in the digital payment system. The majority of studies reviewed in the literature have primarily focused on consumers perspectives, as noted by various researchers (Arvidsson, 2014; Bagla & Sancheti, 2018; Shahid, 2022; Agarwal & Karim, 2015; Al-Razgan et al., 2021; Baabdullah et al., 2019; Gupta & Kumar, 2020; Philip, 2019). The findings of a study by Sharma et al. (2022) further validated this fact.

These authors conducted a blend of systematic literature review and bibliometric analysis to determine mobile payment adoption. A significant research gap was brought to light in this most recent study since many studies they examined were from a customer perspective. They emphasised that more research should look at mobile payment acceptance from the viewpoints of many stakeholders. Dahlberg et al.(2008) also discovered that customer viewpoints and technology were the main subjects of study on mobile payments. Given this framework, the present study focuses on the merchant's viewpoint of mobile payment uptake, particularly concerning UPI.

The Unified Theory of Acceptance and Use of Technology (UTAUT) model is a widely used framework for understanding user acceptance of information technology (Thakur & Srivastava, 2014). The UTAUT model is more popular than the Technology Acceptance Model (TAM) due to its integration of eight technology acceptance theories, including reasoned action, motivation, social cognitive theory, TAM, planned behaviour, diffusion of innovation, personal computer utilisation model, and combined TAM-TPB (Odoom&Kosiba, 2020). Based on an expansion of the widely used TAM in research, the study uses the UTAUT model. This model specifies four conditions, i.e., performance expectancy, effort expectancy, social influence and facilitating conditions relevant to describing user intention and behaviour (Venkatesh et al., 2003).

Performance expectancy is a crucial component of the UTAUT model, influencing the adoption and usage of information systems (Onaolapo & Oyewole, 2018). Venkatesh et al. (2003) define it as an individual perception of how a system will enhance their job performance. The study examines merchant adoption of mobile payment, focusing on performance expectancy, which includes perceptions of payment efficiency, convenience, and speed (Odoom & Kosiba, 2020). One factor influencing an individual's inclination to use new technology is their level of effort expectation (Nikolopoulou et al., 2021). It has to do with how simple it is to use technology. This study explores the social impact of merchants' expectations of how simple it is to use UPI to receive and make payments, with a particular emphasis on subjective norms, which refer to the social pressure to engage in an activity (Trivedi & Soni, 2020).

The study elucidates the social influence of peers and superiors in the technology domain, specifically business

partners, consumers, and peers, on the adoption of UPI (Bozan et al., 2016). Social influence measures the influence of these individuals while facilitating conditions that include an organisational and technological environment which supports technology use as well as users' knowledge, ability, and resources (Odoom & Kosiba, 2020).

The study also considers merchants' ongoing desire to implement UPI in addition to the four UTAUT model elements. As noted by Odoom and Kosiba (2020), there has not been much empirical research on the continuous use of mobile money services. However, Wang et al. (2019) found that post-adoption usage and post-purchase intentions/behaviour indicate the intention to continue using the system, which is a key measure of the success of information system satisfaction.

Previous research has examined the influence of technical elements on company performance (Abbasi & Weigand, 2017; Mahakittikun et al., 2021). Firm performance can be measured using financial or non-financial metrics. According to Chong (2008), financial success may be measured by profit before tax, profit per employee, revenue growth and employee growth, whereas measuring non-financial performance includes market share, customer satisfaction, customer referral rate, and customer base expansion. Financial performance indicators have been more commonly employed than non-financial performance measurements (Mbogo, 2010). As a result, as a dependent factor, the current study used financial metrics to measure the performance of the businesses.

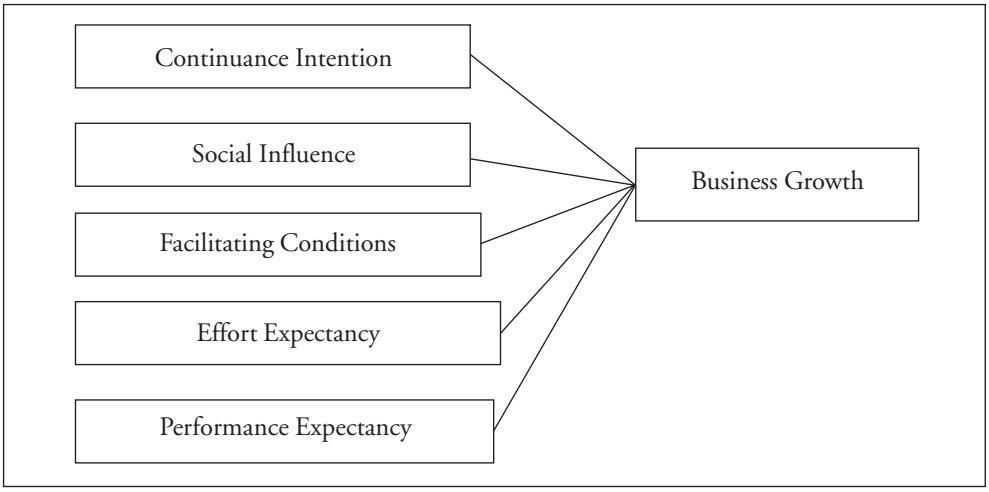
The study reviews the literature on mobile payment in India, revealing very few studies in the Indian context that analyse the impact of all UTAUT model constructs, particularly UPI. In addition to all the UTAUT constructs, the present study explores the impact of independent factor continuance intention on firms' performance, i.e., business growth.

The researchers analysed the influence of independent variables like continuance intention (CI), social influence (SI), facilitating condition (FC), effort expectancy (EE), and performance expectancy (PE) on the dependent variable, business growth (BG), using a regression model, as depicted in Figure-1.

Research Methodology

A descriptive, single cross-sectional research design was adopted for the quantitative study. A non-probability and convenience technique was used to collect primary data through a questionnaire from 266 small vendors. The

Figure-1 : Antecedents of Business Growth



Source : Researcher's Output.

sample size was determined using the Sample Size $(n_0)=Z^2*p*q\div e^2$Sample Size $(n_0)=1.96^2*0.5*0.5\div 0.06^2$. The final sample size turned out to be 230, with a response rate of 97 per cent. Twenty questionnaires were not returned despite multiple follow-ups and 16 questionnaires had unengaged responses. From April 2023 to May 2023, the data was collected from the Ahmedabad and Gandhinagar regions by personally visiting the small vendor's outlet. To facilitate the respondent and ensure proper filling, the questionnaire was filled out using the interview schedule method. The secondary data was collected for the purpose of a literature review by referring to various online and offline journals, books, newspapers and magazines. The data were analysed using Microsoft Excel and the Statistical Package for Social Sciences (SPSS-17). The dependent and independent variables were measured using a five-point Likert scale (5: Strongly Agree and 1: Strongly Disagree). The Cronbach Alpha value of 31 items measured on the Likert scale was satisfactory at 0.93 > 0.60. Data were analysed using descriptive statistics such as mean (X), median (M), mode (Z), Standard Deviation (SD), and percentage (%). Regression analysis was also used on the data to draw key conclusions.

Data Analysis and Findings

Males (73 per cent) and females (27 per cent) were approached for the survey. Ninety-six per cent of the respondents were below 50 years of age. Thirty-four per cent of the respondents

Table-1 : Demographic and Fundamental Details

Parameters	Variable	Frequency	%
Gender	Male	167	73
	Female	63	27
Age	Less Than 30	85	37
	30 to 40	85	37
	41 to 50	51	22
	Above 50	09	04
Educational Qualification	School Dropout	76	33
	Illiterate	73	32
	Graduate	79	34
	Others	02	01
Occupation	Tea Vendor	38	17
	Fruits and Vegetable Vendor	22	10
	Milk Vendor	12	05
	Newspaper Vendor	05	02
	Mom and Pop Store	13	06
	Scrap Collector	10	04
	Beauty Parlours and Hair Saloon	17	07
	Tailors	29	13
	Pan Shops	34	15
	Mechanics	20	09
	Others	30	12
Users of UPI	G-Pay	220	96
	Paytm	10	04

Source : Primary Data.

completed their graduation, whereas 33 per cent left their education at the mid-way point. Only small merchants were contacted. The other category in the survey included small vendors such as incense-stick (agarbatti) sellers, art and craft makers, electricians, fertiliser sellers, florists, furniture vendors, squash

sellers, barbers, manson, painters, pickle makers, and street food sellers. The entrepreneurs of the unorganised sector, whose businesses were not registered and who had to deal with different types of customers every day, were contacted for the survey.

Roadside vendor businesses shifted due to new customer acquisition and strict municipal corporation regulations prohibiting them from selling or providing services on the roadside and refraining from providing credit to customers. With the low per-unit sales price and the low volume, they often encounter the problem of currency change. In such cases, quick money realisation without any hassles of currency change or bad debt helped them to focus on their business. The survey surveyed small vendors who used UPI as a convenient tool, finding G-Pay the most user-friendly and easily accessible option.

Descriptive Analysis

The statement was agreed upon by those whose mean scores were above three and below three, respectively. Responses from respondents showed unanimity when the standard deviation was less than one.

Regression Analysis

The composite mean score of the items was computed for the construct to apply regression.

H_{01} : None of the independent variables (continuance intention, social influence, facilitating conditions, effort expectancy, and performance expectancy) is a significant predictor of the dependent variable (business growth).

H_{11} : At least one of the independent variables (continuance intention, social influence, facilitating conditions, effort expectancy, and performance expectancy) is a significant predictor of the dependent variable (business growth).

The results of multiple linear regression, which was run to test the collective significant effect between BG and CI, SI, FC, EE and PE, reported that the ANOVA (F-Statistics) with degrees of freedom (df : 5,224) was 62.99, with a p-value =0.00 < 0.05 (benchmark value) and R-Square R^2= 0.58. The set of individual predictors was examined, and it indicated that CI (t=0.50, p=0.62); FC (t=0.91, p = 0.36), and EE (t = 0.79, p = 0.43), were not significant predictors of BG. Only SI (t = 2.77, p = 0.00) and PE (t = 5.53, p = 0.00) were statistically significant in predicting BG. Thus, the regression equation worked out to be : *Business Growth = 0.85+0.03 (Continuance Intention) + 0.22 (Social Influence) + 0.78 (Facilitating Conditions) + 0.06 (Effort Expectancy) + 0.40 (Performance Expectancy)*.

Table-2 : Descriptive Statistics and Construct Details

Items	Measurement	Mean	SD	Construct Name	Citation
BG1	Last year we achieved a higher sales growth than our (direct/indirect) competitors.	4.47	0.75	BG	Eggers, *et al.*, 2013, Kiyabo, and Isaga (2020)
BG2	Last year we achieved a higher profit growth than our (direct/indirect) competitors.	4.16	0.72		
BG3	Last year we achieved a higher growth in employees than our (direct/indirect) competitors.	4.29	0.78		
BG4	Last year we achieved a higher growth in market share than our (direct/indirect) competitors.	4.20	0.80		
CI1	I intend to continue using UPI rather than discontinue its use.	4.43	0.74	CI	Odoom, 2020, Zhou *et al.* (2010)
CI2	My intentions are to continue using UPI than use any alternative means.	4.41	0.74		
CI3	If I could, I would like to discontinue my use of mobile payment.	4.17	0.85		
SI1	Most of my customers pay with UPI.	4.17	0.81	SI	Odoom, 2020, Zhou *et al.* (2010)
SI2	A lot of my business partners (including suppliers) use UPI.	4.35	0.78		
SI3	People I know in the same trade use UPI.	4.23	0.81		
SI4	I would recommend use of UPI to others.	4.33	0.78		
SI5	Those people that influence my behavior think that I should use UPI.	4.25	0.82		
SI6	Those people that are important to me think that I should use UPI.	4.10	0.80		

(Contd...)

SI7	I assume that people whose opinions I value would prefer that I use UPI.	4.22	0.78		
FC1	I could acquire the necessary knowledge to use UPI.	4.34	0.75	FC	Nordhoff *et al.*, 2020, Zhou *et al.* (2010)
FC2	I would expect the use of UPI to be compatible with other digital payment systems.	4.27	0.82		
FC3	I would expect to have the necessary knowledge to use UPI.	4.30	0.74		
FC4	I would be able to get help from others when I have difficulties using UPI.	4.33	0.79		
FC5	I have the necessary resources to use UPI.	4.30	0.78		
FC6	I have the necessary knowledge to use UPI.	4.45	0.74		
FC7	If I have difficulty using UPI, there will be professionals to help me.	4.31	0.85		
FC8	I could acquire the necessary knowledge to use UPI.	4.45	0.72		
EE1	Learning how to use UPI was easy for me.	4.50	0.72	EE	Odoom, 2020, Zhou *et al.* (2010)
EE2	It is easy for me to use UPI.	4.48	0.75		
EE3	It is easy for me to use UPI skillfully.	4.55	0.68		
EE4	Using UPI saves me a lot of time.	4.47	0.74		
EE5	My interaction with UPI is clear and understandable.	4.43	0.77		
PE1	I feel UPI is useful.	4.48	0.77	PE	Zhou *et al.* (2010)
PE2	UPI improves my payment efficiency.	4.57	0.67		
PE3	UPI improves my payment convenience.	4.57	0.73		
PE4	UPI lets me make payments more quickly.	4.67	0.63		

Source : Primary Data.

The paired T-test was run to check the difference in income.

H_{02} : There is no significant difference in income before and after using UPI.

H_{12} : There is a significant difference in income before the use of UPI and after the use of UPI.

The results of the (paired) dependent sample T-tests indicated that there was a significant difference in income between the pre-test and the post-test ($t(229) = -9.06$, $p = 0.00 < 0.05$). The pre-test (mean = ₹31,128.86 and SD= ₹21,320.23) and the post-test (mean = ₹38,626.09 and SD= ₹30,496.03) scores indicated a huge positive difference in income after using UPI.

Conclusion and Future Research

The study analysed the adoption of UPI among small merchants in Ahmedabad and Gandhinagar, Gujarat, India. It revealed valuable insights into the elements influencing business development after respondents adopted the UPI. The data highlighted that small retailers in the chosen cities preferred to keep using UPI (CI). They also thought that the individuals whose opinions they valued wanted them to utilise UPI (SI).

They concurred that they have the skills and assets required to use UPI (FC) and also expressed their opinion that using UPI was incredibly time-saving and user-friendly for them. UPI also improved their payment efficiency and offered them convenience (PE). The overall results showed that PE and SI could forecast business growth significantly.

In the future, researchers may undertake comparative studies across different regions of India to identify the variations in UPI adoption, conduct longitudinal studies to track adoption over time and conduct qualitative studies to understand target audience perceptions.

Policymakers can improve their outreach initiatives by setting higher performance expectations and leveraging social influence. The intention to continue UPI usage is a critical indicator showcasing India's untapped potential in the digital payment revolution.

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The Journal of Institute of Public Enterprise, July-December, 2023, Vol. 46, No. 2
ISSN : 0971-1864.

A Critical Review of India's Entrepreneurship Policy : Startup India

Durgesh Mani Tewari*

The Indian government launched the "Startup India" initiative in 2016 to promote entrepreneurship and establish a robust startup ecosystem. The initiative aims to streamline procedures, provide financial assistance, and promote industry-academia collaborations. Startups recognised by the Department for Promotion of Industry and Internal Trade (DPIIT) can avail themselves of tax benefits, streamlined compliance processes, and fast-tracked IPR approvals. Since its inception, over 98,000 startups have been established across 55 diverse sectors, generating more than one million direct jobs. However, despite the policy's success, challenges persist, such as regional disparities in startup recognition, sectoral imbalances, funding concentration, inadequate procurement, mismanagement of funds by SIDBI, low levels of interest in startup registration on the GeM portal, gender gaps, and slow startup transitions from ideation to scaling. Policymakers must address these concerns to prevent regional disparities in startup creation, regional concentration of funds, lack of funding, inadequate procurement, gender inequality, the inefficiency of DPIIT, and inefficient management of funds by SIDBI.

Keywords : Startup India, Entrepreneurship Policy, Startup Entrepreneur, Startup Ecosystem, Women Entrepreneurship, Incubators.

The Perspective

The Indian economy has been experiencing a period of "jobless growth" for nearly two decades due to slower employment growth than GDP. Despite intermittent attempts to address the issue of mass unemployment at different levels, the problem persists. The Government of India acknowledged that there are not enough "job creators" or entrepreneurs to accommodate all the "job seekers." It is globally recognised that start-ups drive economic growth, create jobs, and foster an innovative culture. Thus, to promote entrepreneurship at the national level and create a strong startup ecosystem, the GoI launched the flagship initiative "Startup India" in January 2016. The main objective of this initiative is to foster innovation and promote startups in the country by supporting startup entrepreneurs and making India a nation of job creators rather than job seekers.

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A startup recognised by the Department for Promotion of Industry and Internal Trade (DPIIT), creates an average of 12 jobs at the initial level, as per the five-year achievement report for Startup India. According to Bhattacharya (2008) study, only 33 per cent of Total Entrepreneurial Activity (TEA) can be classified as improvement-driven opportunity recognition or opportunity-TEA. Acs (2006) argues that entrepreneurial regimes based on necessity are less conducive to growth. Rault and Mathew (2019) studies show that the startup ecosystem has developed unevenly across cities and economic sectors, failing to empower the population overall. Venture capital is concentrated on graduates from a handful of prestigious education institutes in India and abroad. Tiwari et al.(2021) reveals that the Startup India campaign has effectively tackled regional entrepreneurial disparities in India by promoting startups in Tier-2 and Tier-3 cities, the Fund of Funds for Startups (FFS) is inefficient and inadequate to meet the ecosystem's funding needs, and the policy has not addressed the underrepresentation of female and minority entrepreneurs.

While India ranked fourth out of 51 with a score of 6.1 on the National Entrepreneurship Context Index (NECI), it's position also increased from 142 in 2014 to 63 in 2019 in terms of "ease of doing business" (EODB), from 81 in 2018 to 40 out of 132 in 2022 on the Global Innovation Index (GII) and19th out of 100 in 2022 on the Global Startup Ecosystem Index (GSEI). However, India ranks near the bottom on the Global Startup Index and is ranked as the third most difficult country to launch a startup out of 50 countries. But, India has made significant strides in recent years to support startup-related ecosystems in the economy, ranking 109th out of 145 nations in the 2012 World Bank Knowledge Economy Index and 75th out of 138 nations in the Global Knowledge Index (GKI) 2020. India's score value of 44.4 is lower than the global average of 46.7.

Against this background, the Startup India campaign's progress, ecosystem, and impact on the Indian economy are evaluated through a comprehensive process involving data from sources like the official website, PIB portal, Indiastat, media articles, startup reports, and published research. The analysis aims to summarise the outcomes and provide insights into the campaign's overall progress, with the results highlightedand discussed in the concluding section.

Introducing Startup India

Though there is no precise definition, the accepted characteristics of a startup

include its age, size of operations, scale of operations, and mode of funding. However, the most essential characteristic of a startup is growth. A startup in India was defined by the GoI in 2016 as an entity incorporated or registered in India, not before five years, with an annual turnover not exceeding ₹25 crores in any preceding financial year. Such entities work towards innovation, development, deployment, or commercialization of new products, processes, or services driven by technology or intellectual property. This definition was amended in 2019, increasing the maximum age of an entity to be considered a startup to 10 years and the turnover threshold to ₹100 crore. (DPIIT vide gazette notification No. G.S.R. 127(E) dated February 19, 2019).

In 2016, the Startup India movement announced an action plan with 19 items focusing on simplification, funding support, and industry-academia partnerships. Startups were granted tax benefits, easier compliance, and IPR fast-tracking. To qualify, startups must be recognized by the DPIIT (Startup India: Action Plan, 2016). Financial assistance is provided to Startups recognised by DPIIT through schemes like the Fund of Funds for Startups (FFS) and the Startup India Seed Fund Scheme (SISFS). However, funding and policies are influenced by the startup's stage, with DPIIT-recognised startups going through four stages : ideation, validation, early traction, and scaling. Ideation involves entrepreneurship with an innovative idea, validation involves the establishment and market entry, early traction establishing a mark with customers, early traction involves customer and KPI mark-building, and scaling involves achieving product-market fit and crossing the valley of death for expansion or capital raising (Startup India website).

Support to Promote Startups

The Indian government has implemented several support initiatives to foster a robust startup ecosystem. An overview of these programmes is summarised (compiled from a few reports and documents found on the official Startup India portal).

(a) Funding Support : The government established a FFS with a corpus of ₹10,000 crores to increase capital availability and catalyse private investments. The SISFS was created in 2021 with an initial outlay of ₹945 crores to assist early-stage entrepreneurs. The government also formed the Credit Guarantee Scheme for Startups (CGSS) with a corpus of ₹2,000 crore, which aims to issue credit guarantees up to a predetermined limit against loans given to recognised startups by member institutions.

(b) Regulatory Support : Since Startup India's inception, 53 regulatory reforms have been initiated by various departments and ministries to improve the startup ecosystem, boost business efficiency, raise capital, and decrease compliance burden.

(c) Procurement-Related Support : DPIIT-recognised startups can market their products and services directly to government agencies through the Government e-Marketplace (GeM) platform. Startups that meet requirements receive a registration-related relaxation.

(d) Support by Incubators : Incubators are organisations or teams of professionals that assist startups in their early stages by providing resources like infrastructure, mentorship, and financial support. India currently has over 400 incubators.

(e) Promotional Support : Many initiatives have been established on a national and global scale to encourage startups. These include, among other things, the following :

(i) Startup-specific Schemes and Initiatives : The Draft Compendium of Startup-Specific Schemes lists 47 schemes offered by assorted ministries and departments of the GoI across various sectors. These schemes provide startup businesses with financial support and other necessary resources involving an extensive range of sectors.

(ii) Women-specific schemes and initiatives to support Women's Entrepreneurship : The Startup India campaign in India has implemented various initiatives and schemes to support women entrepreneurs. States and UTs have also provided policies such as mentoring, monthly allowance assistance, skill upgrading, training programmes, product promotion, and subsidies.

(iii) International Collaboration : The Indian government has collaborated with 17 foreign nations to establish a soft-landing platform for entrepreneurs, utilizing various engagement models such as international government-to-government partnerships, participation in international forums, and hosting international events.

(iii) Support to formulate Startup policies : Startup policies are crucial for ensuring startups gain access to funding, mentorship, and market support. Thirty-one Indian states and UTs have implemented these policies, with 27 developed after Startup India's launch.

Evaluating Startup India Movement

India's startup scene has seen a significant increase since the launch of Startup India in 2016, with the number of

DPIIT-recognised startups rising from 452 in 2016 to over 98 thousand in April 2023. This is a significant increase from the less than 28 thousand startups founded between 2005 and 2015 (Figure-1).

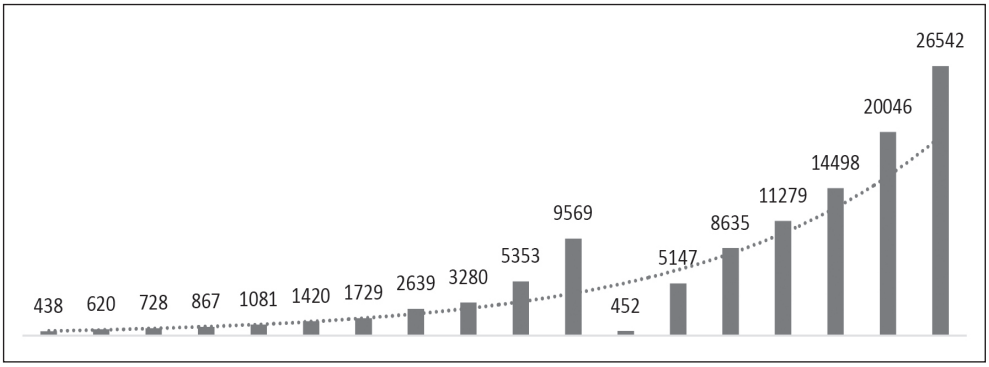
However, data show that six states — Maharashtra, Karnataka, Delhi, Uttar Pradesh, Gujarat, and Tamil Nadu— account for nearly 63 per cent of DPIIT-recognised startups, while 23 states and UTs account for only 10 per cent. It indicates that most startups are concentrated in a few key states and UTs, neglecting other states and UTs (Figure-2).

We determined the share difference between the DPIIT-recognised startup pool and the overall population of each state and UT (using the 2011 Census) (see Table-1). The 2011 Census revealed that only 11 states and UTs performed well in recognizing startups, while 19 performed very poorly. The top 5 states were Maharashtra, Karnataka, Haryana, Gujarat, and Telangana, while Bihar, UP, WB, MP, and AP performed poorly.

Between 2016 and 2022, around 84 thousand DPIIT-recognised startups created over 8.6 lakh new jobs. This year-over-year increase in jobs generated is significant, with the most recent startup recognition data of over 98 thousand and the official average number of jobs created per startup of 12. The total number of jobs created would be above 1 million (Figure-3).

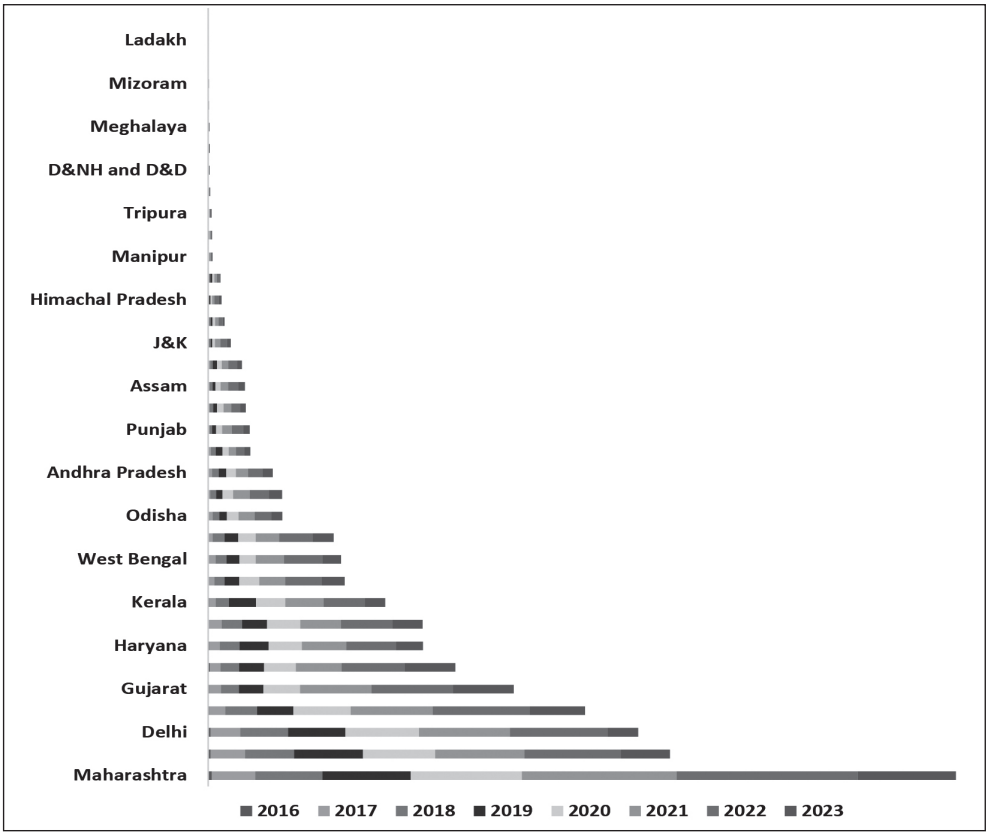
Calculating the year-over-year growth, the study reveals a steady decline in startup recognition and job creation rates from 2018 to 2022, except for startup recognition in 2021, as shown in Figure-4.

Figure-1 : Startup Creation/Recognition by DPIIT in India from 2005 to 2022



Source : Author's calculation based on dataavailable from PIB portal (2016 to 22) and from Rault & Mathew (2019) for the period 2005 to 2015 (situation as on 30 November, 2022).

Figure-2 : State/UT-wise Recognition of Startups By DPIIT for the Period 2016 to 2023*



Source : Author's calculation based on dataavailable from PIB and startup India's portal.

** 2023 data includes those startups which were recognised by DPIIT after November 2022 to April 2023.*

Table-1 : Performance of State/UT in Promoting Startups Vis-a-Vis their Share in the Total Population

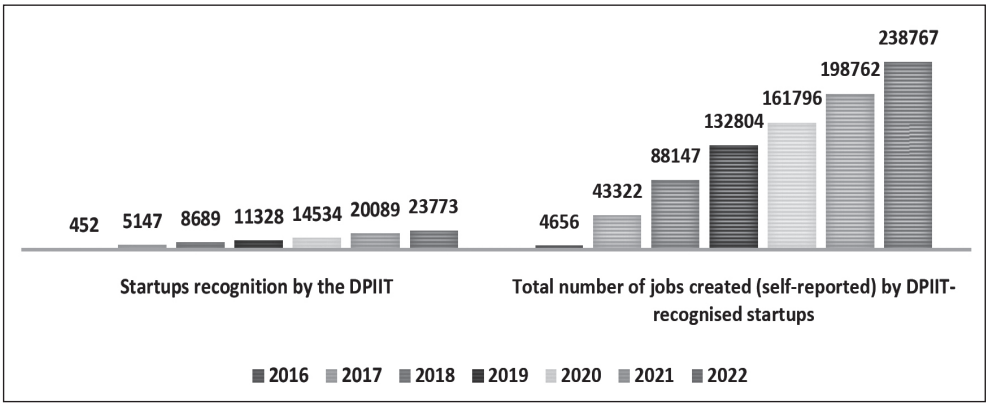
State/UT	Share of DPIIT-Recognized Startups (%)	Share of Population (as per 2011Census) (%)	Difference (%)
High Performing States/UTs			
Maharashtra	20.7	9.4	11.3
Karnataka	12.8	5.1	7.7
Haryana	5.9	2.1	3.8

(Contd...)

Gujarat	8.4	5.1	3.4
Telangana	5.9	3.0	3.0
Kerala	4.9	2.8	2.1
Tamil Nadu	6.8	6.1	0.8
Goa	0.5	0.1	0.3
Uttarakhand	0.9	0.8	0.1
Andaman & Nicobar	0.0	0.0	0.0
Puducherry	0.1	0.1	0.0
Sikkim	0.0	0.1	0.0
Poor Performing States/UTs			
Bihar	2.0	8.7	-6.7
Uttar Pradesh	10.4	16.8	-6.3
West Bengal	3.7	7.7	-4.0
Madhya Pradesh	3.5	6.1	-2.6
Andhra Pradesh	1.8	4.1	-2.4
Rajasthan	3.8	5.8	-2.0
Jharkhand	1.0	2.8	-1.7
Assam	1.0	2.6	-1.6
Odisha	2.0	3.5	-1.5
Punjab	1.2	2.3	-1.2
Chhattisgarh	1.2	2.1	-1.0
Jammu & Kashmir	0.6	1.1	-0.4
Tripura	0.1	0.3	-0.2
Himachal Pradesh	0.4	0.6	-0.2
Meghalaya	0.0	0.2	-0.2
Nagaland	0.0	0.2	-0.1
Manipur	0.1	0.2	-0.1
Mizoram	0.0	0.1	-0.1

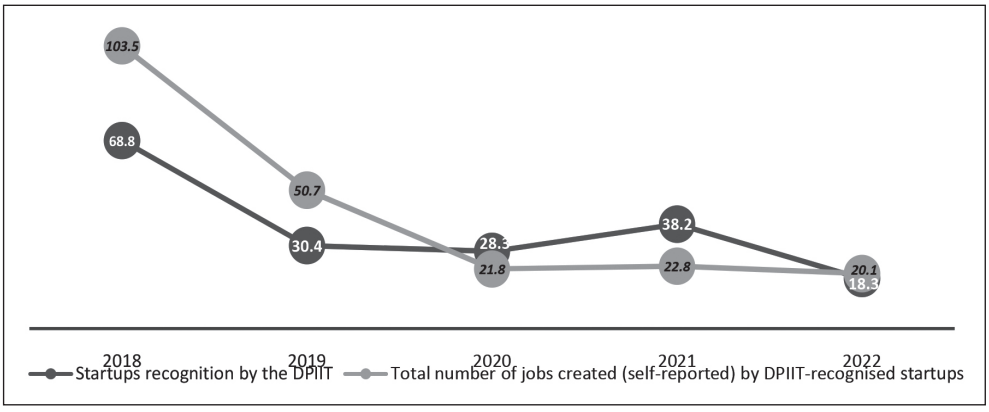
Source : Author's calculation based on data available from startup India's portal.

Figure-3 : DPIIT-Recognition of Startups and Number of Job Creation During 2016-22



Source : Author's calculation based on data available in PIB portal (as on 30 Nov. 2022).

Figure-4 : Y-O-Y Growth Rate of Startups Recognition and Jobs Reported During 2018-22



Source : Author's calculation based on data available from PIB portal (as on 30 Nov. 2022)

Weestimate an average of 68 DPIIT-recognised startups per 1 million people, indicating that startups can only create 820 jobs for one million job seekers. India's unemployment rate was 7.5% in February 2023, with Haryana having the highest rate at 29.4 per cent. DPIIT-recognised startups can only reduce the overall unemployment rate by 1.2 per cent. Table-2 shows that recognized startups are not causing a sufficient impact on the unemployment rate in each state or UT. The data from the CMIE show that Haryana, Rajasthan, J&K, Jharkhand, HP, and Bihar have the highest unemployment rates.

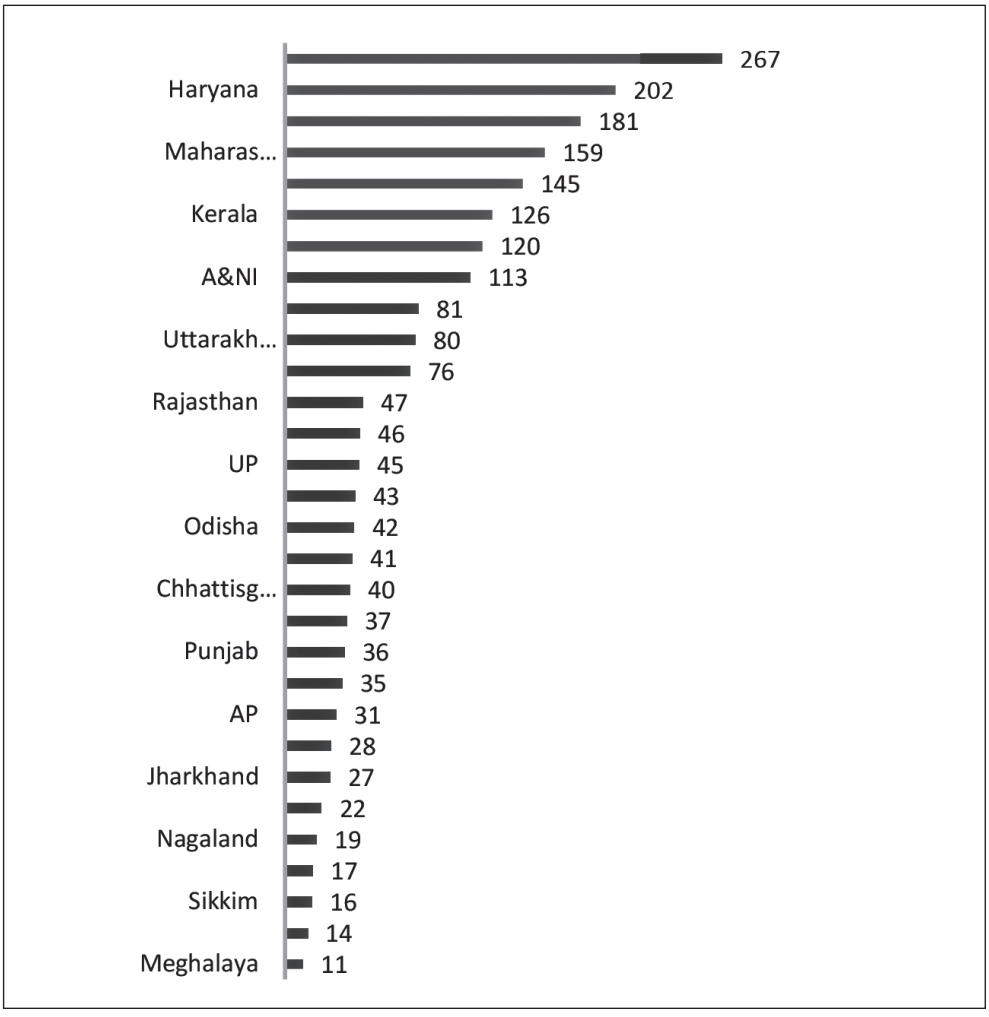
Table-2 : State/UT-Wise Unemployment Rate (UR) and Startups Role in Reduction of UR

State/UT	Unemployment Rate in Feb-23 (%)	Expected jobs Created by Startups of Total UR (%)
Haryana	29.4	0.8
Rajasthan	28.3	0.2
J&K	17.1	0.3
Jharkhand	16.8	0.2
Himachal Pradesh	13.9	0.4
Bihar	12.3	0.2
Tripura	11.7	0.2
Goa	11.1	2.9
Assam	8.6	0.4
Punjab	8.2	0.5
Andhra Pradesh	6.6	0.6
Telangana	5.8	3.0
Maharashtra	5.6	3.4
Kerala	5.6	2.7
West Bengal	4.4	0.9
Meghalaya	4.1	0.3
Uttar Pradesh	4	1.4
Tamil Nadu	3	3.3
Karnataka	2.5	8.7
Gujarat	2.5	5.8
Sikkim	2.4	0.8
Uttarakhand	2.3	4.2
Puducherry	2.2	4.2
Odisha	2.1	2.4
Madhya Pradesh	2	2.5
Chhattisgarh	0.8	5.9
All India	7.5	1.2

Source : Author's calculation based on data available from CMIE and startup India's portal.

The study analyzed the number of DPIIT-recognised startups per million people in each state/UT. Goa, Haryana, Karnataka, Maharashtra, and Telangana performed well, but most exhibited poor startup ecosystem development, highlighting regional disparities in startup creation. It is crucial to investigate whether this disparity is due to the state/UT itself or DPIIT's recognition process to prevent an unbalanced startup ecosystem in the nation (Figure-3).

Figure-5 : Number of DPIIT-Recognised Startups Per Million Population



Situation as on 30 November, 2022.

Source : Author's calculation using data available from startup India's portal and indiastat.

According to data on the distribution of startups by stage, at the national level in India, 26 per cent of DPIIT-recognised startups are in the ideation stage, 34 per cent are in the validation stage, 28 per cent are in the early traction stage, and 10 per cent are in the scaling stage (Table-3). Table-3 also summarises 15 major Indian state/UT for the various stages of DPIIT-recognised startups. Since the startup funding support largely depends on the stage to which they currently belong, this creates obstacles to receiving funding support. The Startup's transition from ideation to scaling impacts GDP and job creation; hence, it merits attention to assign more elevated stages as soon as DPIIT detects them promptly.

Table-3 : DPIIT-Recognised Startups and Their Stage-wise Status for all States/UTs

States/UTs	DPIIT Recognized Startups	Ideation (%)	Validation (%)	Early Traction (%)	Scaling (%)
Maharashtra	17934	23.2	34.4	29.8	11.0
Karnataka	11076	22.3	32.1	34.0	9.7
Delhi	10309	-	-	-	-
Uttar Pradesh	9041	33.6	32.2	24.0	9.3
Gujarat	7330	19.1	44.4	22.6	12.7
Tamil Nadu	5927	23.0	32.1	33.3	10.0
Haryana	5147	27.7	30.2	30.3	10.3
Telangana	5141	24.4	35.6	29.2	9.4
Kerala	4242	27.1	32.6	29.1	9.6
Rajasthan	3279	28.3	35.3	25.6	9.7
West Bengal	3192	27.3	35.4	27.0	9.5
Madhya Pradesh	3006	30.9	33.3	24.7	10.1
Odisha	1778	30.1	33.4	27.3	8.0
Bihar	1771	34.9	34.6	22.3	7.7
Andhra Pradesh	1546	30.5	32.6	26.7	8.6
All India	**97354**	**26.0**	**34.2**	**28.2**	**10.0**

Situation as on 21 April, 2023.

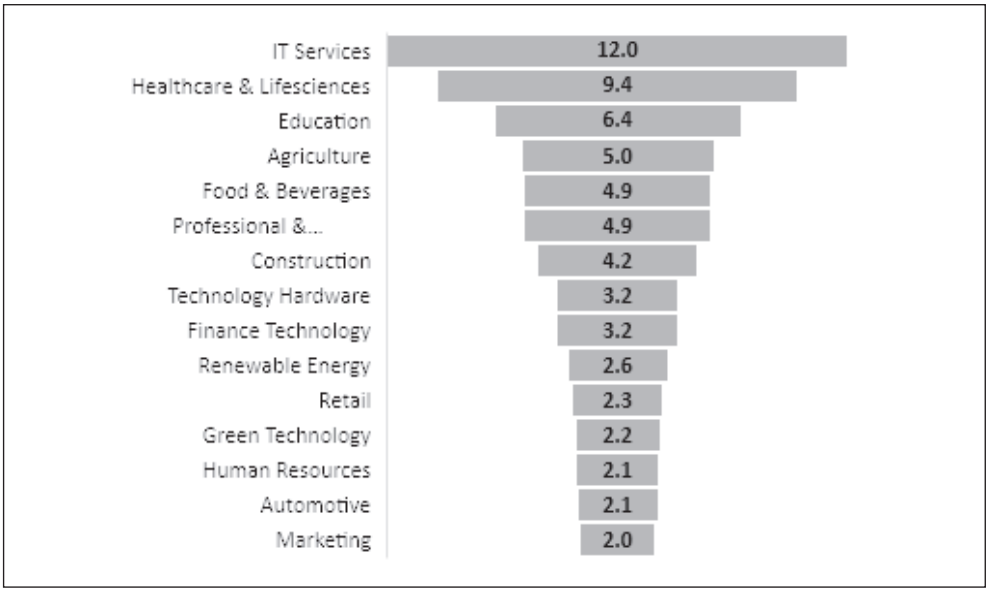
Source : Author's calculation based on data available from startup India's portal.

DPIIT has recognised and fostered startups in over 55 diversified sectors, contributing to innovation and strengthening the startup ecosystem. However, over 66 per cent of all identified startups are concentrated in 15 key sectors, indicating sector-specific inequality (Figure-6). To discern more innovation in less well-known sectors and ensure sector-specific balance, DPIIT should accord importance to other sectors outside the 15 major sectors and provide more support for startups in these less well-known sectors.

Women entrepreneurs play a crucial role in India's startup culture, with over 46 per cent of total DPIIT-recognised startups led by women. The top 5 states/UTs account for almost 25 per cent of all DPIIT-recognised startups run by women, while the combined percentage for the bottom five states/UTs is only 0.07 per cent (Table-4). It highlights regional disparities in supporting women entrepreneurs. Regional disparities exist, with J&K having the most sizeable gender difference (15.9%) and Kerala having the lowest (-11.4%). However, Meghalaya, Nagaland, West Bengal, and Punjab have gender equality (Figure-7).

Data available on the GeM portal shows that over 6 million merchants and service providers engage with

Figure-6 : DPIIT- Recognised 15 Major Sectors of Startups India



Source : Author's calculation based on data available from PIB portal (as on 28 Feb. 2023)

Table-4 : Top and Bottom Five State/UT having DPIIT-recognised Startups Led by Women

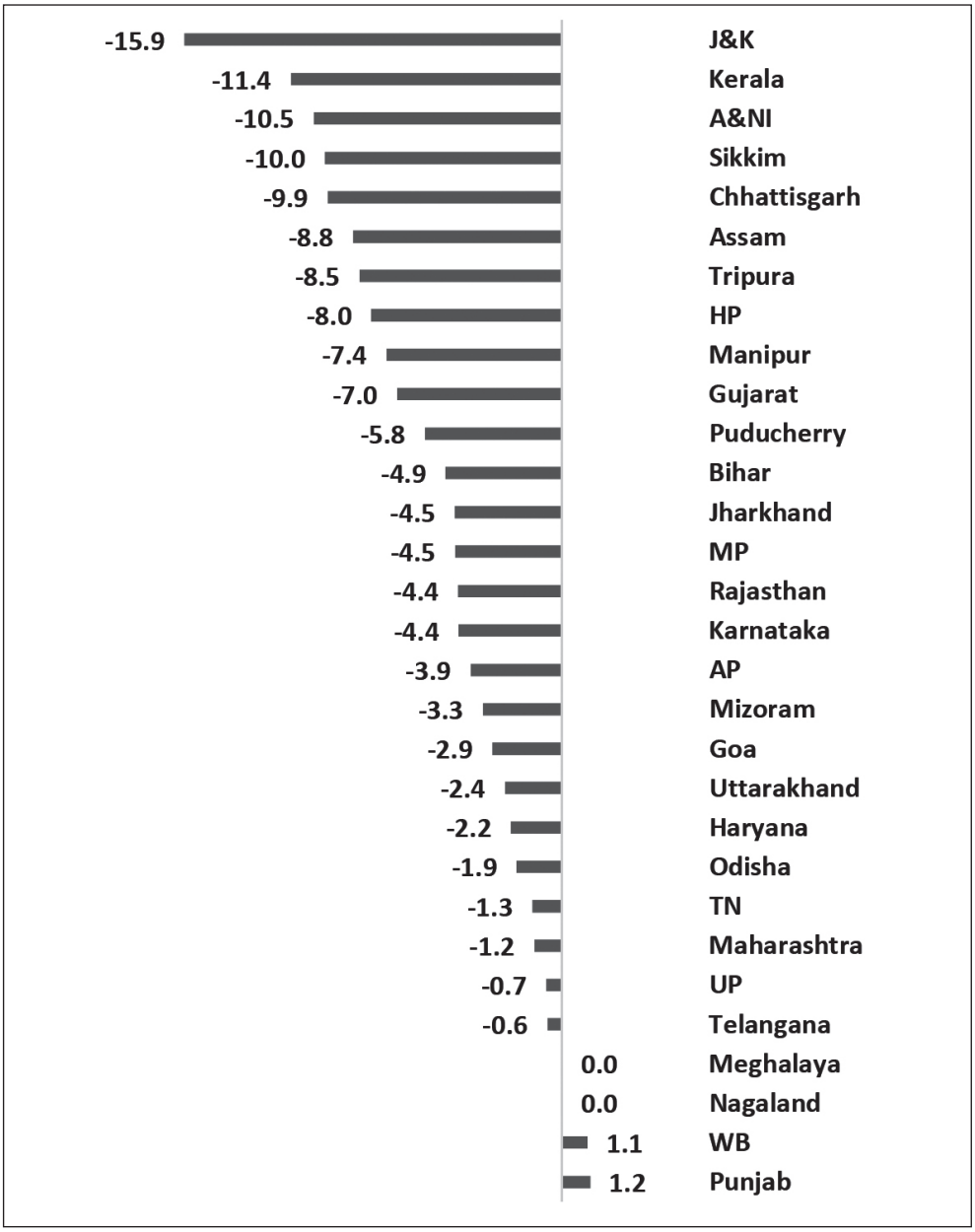
States/UTs	Total DPIIT-Recognised Startups	Total DPIIT-Recognised Startups Led By Women	Share of Women Led Startups in Total DPIIT-Recognised Startups for all State/UT (%)
Top 5			
Maharashtra	17985	8783	9.0
Karnataka	11085	5059	5.2
Uttar Pradesh	9057	4468	4.6
Gujarat	7353	3165	3.2
Tamil Nadu	5945	2898	3.0
Bottom 5			
Sikkim	10	4	0.004
Mizoram	15	7	0.007
Meghalaya	32	16	0.016
Andaman & Nicobar	43	17	0.017
Nagaland	38	19	0.019

Source : Author's calculation based on data available from startup India's portal.

around 68 thousand customers, with almost 1.5 crore orders surpassing ₹4.05 lakh crore delivered by businesses. Over 8.7 lakh MSE merchants and service providers got 52.4 per cent of these funds. However, just 14per cent of DPIIT-recognized firms have registered on GeMand achieved sales of ₹8,200 crores through 1.42 lakh received orders, representing only 2 per cent of the total order value received. (see Figure-8) (ToI, August 27, 2022).

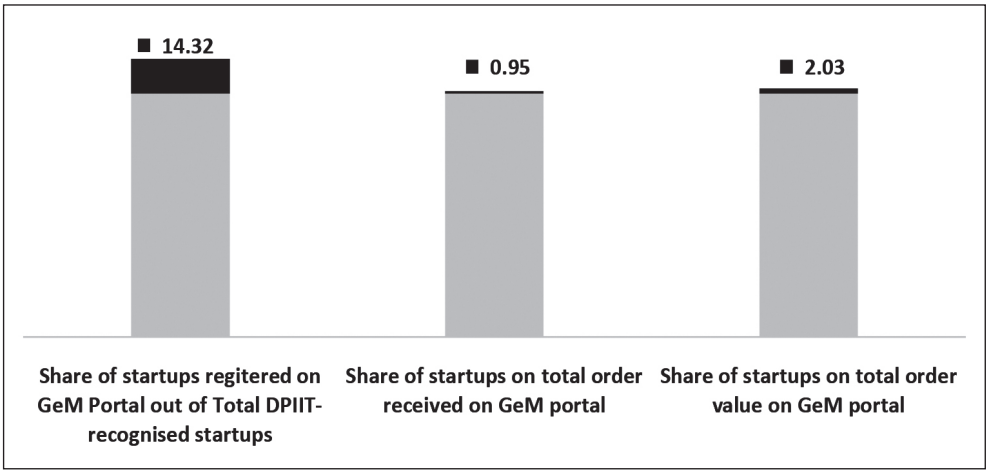
Data on funding support for startups shows that even though the FFS plan has been in place for seven years, SIDBI has committed 83 per cent of the total stated corpus (₹10,000 crores) to 103 AIFs for startup funding. Only 44.1 per cent of the committed money has been allocated to 74 AIFs, resulting in a total investment of ₹14,828 crores in 818 companies. Only four states received more than 86 per cent of total startup funding : Maharashtra (51.1%),

Figure-7 : State/UT-Wise Gender Gap in DPIIT-Recognised Startups Led By Women



Source : Author's calculation based on data available from startup India's portal.

Figure-8 : Procurement of Products/Services of DPIIT-Recognised Startups Through Gem



Source : Author's calculation based on data available from TOI, PIB and GEM portal.

Karnataka (20.7%), Delhi (9.1%), and Tamil Nadu (5.4%), while the remaining 27 states and UTs received less than 14 per cent as shown in Table-5. It indicates ineffective fund management and inadequate financing under the FFS plan.

The Seed Fund Scheme, a government initiative aimed at assisting start-up entrepreneurs, has awarded over ₹945 crores to 133 incubators across 23 states and UTs. Although more than 1,300 firms received backing, fewer than 23 per cent of the initial investment

Table-5 : Total Amount Allotted and Utilised Under the FFS Scheme

State/UT	Total Amount Allotted (₹ crore)	Total Amount Utilised (₹ crore)
Maharashtra	4241.2 (51.1)	1450.6(34.2)
Karnataka	1719.8(20.7)	754.2(43.9)
Delhi	751.0(9.1)	539.3(71.8)
Tamil Nadu	450.0(5.4)	279.1(62.0)
All India Total	8294.95(100)	3654.9(44.1)

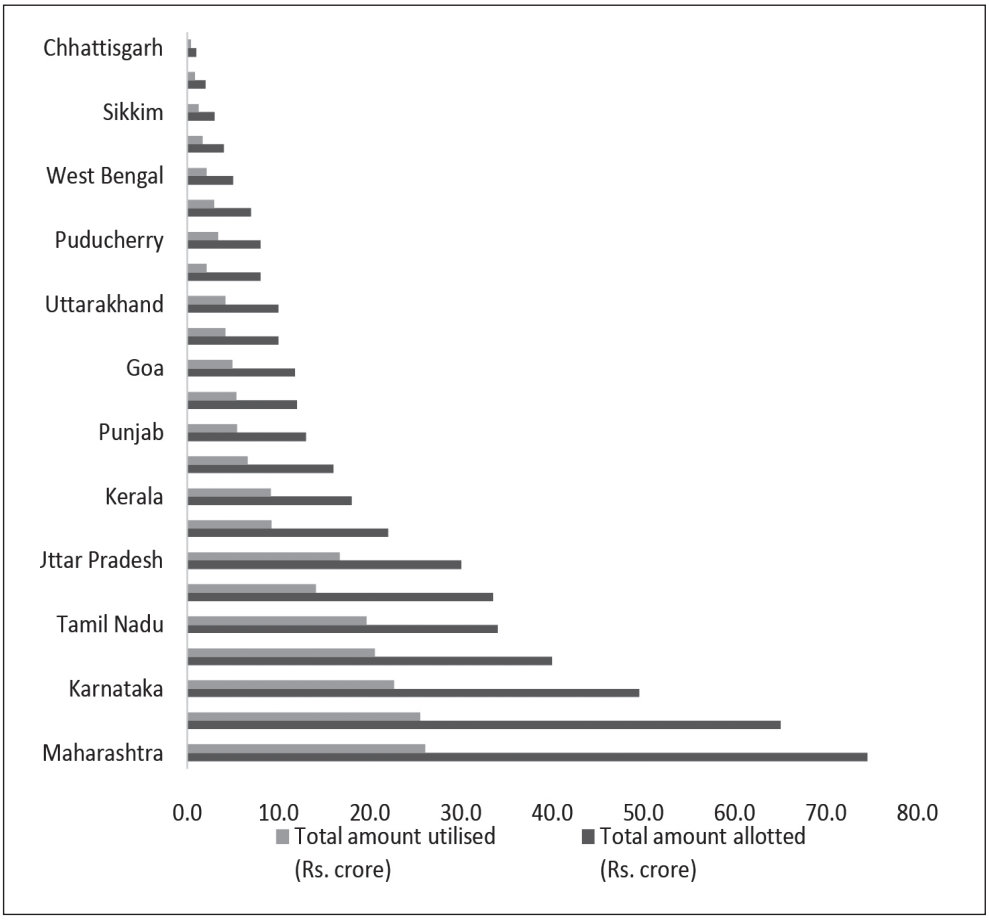
Source : Author's calculation based on data available from PIB portal (as on 28 Feb. 2023).

was used. With these states obtaining around 28% of the initial expenditure, just five states—Maharashtra (15.6%), Gujarat (13.6%), Karnataka (10.4%), Telangana (8.4%), and Tamil Nadu (7.1%)—received more than 55% of the total money given.Figure-9 shows the distribution of seed money by the state and UT, highlighting regional differences in the allocation and use of the programme.

Summing Up

Startup India, an Indian government initiative, aims to promote entrepreneurship and shift the focus from job

Figure-9 : State/UT-Wise Seed Fund Allocated and Utilised to the Selected Incubators



Source : Author's calculation based on data available from PIB portal (as on 31 Dec. 2022).

seekers to job creators. Since its introduction in 2016, it has resulted in over 98 thousand startups across 55 diverse sectors, creating over 1 million direct jobs. The GoI has introduced several schemes, including the FFS, SISFS, and CGSS. Over 50 regulatory reforms have been initiated to support the startup ecosystem, and women are encouraged to start their startups through various support programmes.

Startup India faces several challenges. Some states and UTs have not yet developed startup policies, leading to potential limitations. The startup ecosystem is unbalanced due to regional differences in startup creation and DPIIT recognition. Despite the seven years since its launch, no action has been initiated to address these disparities. The year-over-year growth rate of startups receiving recognition decreases, indicating poor DPIIT performance. Despite creating over 1 million direct jobs, the growth pace is falling and does not address the present unemployment rate in each state and UT. Most well-known businesses are still in the concept phase, with startups and DPIIT performing poorly. DPIIT-recognised startups concentrate on popular industries, resulting in sector-specific imbalances in the economy. Startup entrepreneurs are less likely to register on the GeM website. Regional financial concentration, discrepancies in allocation, delays in disbursing pledged money, and the inability to use disbursed funds remain issues.

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The Journal of Institute of Public Enterprise, July-December, 2023, Vol. 46, No. 2
ISSN : 0971-1864.

Preference for High-risk (Stocks) vis-a-vis Low-risk (Other) Investments across Demographics : A Managerial Perspective

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The study examines individual investors' preferences for high-risk stocks and low and medium-risk investments across demographics. The techniques employed to analyse the data are weighted average scores, frequencies, cross-tab analysis and chi-square statistics. The results reveal that male investors are risk-takers, preferring high-risk investments, while female investors are risk-averse, opting for low- and medium-risk investments. Married respondents are risk-takers, while single investors are more risk-averse. As age and income increase, the risk-taking ability of individual stock investors in Punjab increases. The findings have implications for financial consultants, as they shed light on certain facets of individual investors and highlight the need for investment programmes to improve investment planning. The research also suggests that financial service providers should offer customised financial products to investors rather than a uniform approach for different investor categories.

Keywords : Individual stock investors, investment preferences, demographics, stocks (high-risk investment), other investments(low- and medium-risk investments).

Introduction

With the growing importance of the study of investment patterns and the behaviour of individual investors, the paper has focused on identifying the investment preferences of individual stock investors in Punjab. Every individual wants to invest money to get a return and make productive use of it. Investment management varies from businessman to salaried person. People of different ages, educations, genders, incomes, and family backgrounds are attracted to multiple investment activities, and the availability of money to invest decides whether the investor is potential or not. Investment needs rewards and commitment to the sources to reap benefits in the future (Bashir et al., 2013). Investment decisions depend on the types of investors, risk tolerance capacity, education, occupation, age, sex, income, marital status, family background, living area,

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environment, attachment to the financial advisor, etc. (Harikanth & Pragathi, 2012).

Needs of the Study and Objectives

Individual investors base their investing decisions heavily on demographics. The study is needed because, as in Punjab, there has been no research comparing the preferences of investors for stocks (high-risk investments) and other assets (low-risk investments) across their demographics. As a result, the current study seeks to fill the gap with the following goals :

- To identify the level of preference for stocks (high-risk investments) and other investments (low and medium-risk investments).
- To study the demographic profile and investment patterns of sample investors.
- To conduct a comparative analysis of investment preference for stocks (high-risk investments) and other investments (low- and medium-risk investments) across demographics

Database and Research Methodology

The present study is mainly based on primary data collected from 607 individual investors in Punjab. These investors were interviewed through a pre-tested, well-structured questionnaire, which was administered personally. The convenience sampling technique has been used to select the respondents. A list of regular investors was taken from broking houses and investors were selected from the list provided with the help of simple random sampling.

Review of Literature

Various studies have been conducted on the pattern of investments and analysed the investor's preferences for various investment alternatives, differences in preferences across the demographic dimensions, the relationship between the risk tolerance level of investors and other independent variables such as age and gender of an individual investor. The studies reviewed were :

Cohn et al. (1975) study found that wealth changes affect the proportion of individual portfolios allocated to risky assets. Using data from 972 US respondents, the study found that wealth increases led to a decrease in portfolio allocation to risky assets, and investors' risk-taking ability inversely correlated with wealth. Gupta et al. (1991) study on investor behavior revealed that shareholders were dissatisfied with information provided by brokers and companies, and investors preferred investing in the primary market over the securities market, based on descriptive analysis of their

profiles, portfolios, and risk perceptions. Ghazali and Othman's (2001) study on the Kuala Lumpur Stock Exchange revealed that 37 per cent of active investors were heavy, hit-and-run, and speculators, particularly during bull markets, compared to 63 per cent of passive investors. This highlights the importance of understanding investor behaviour in the market. Nagpal and Bodla (2007) studied investors' investment preferences in Haryana, Delhi, and Chandigarh. They found that insurance policies were the most popular investment, followed by fixed deposits with banks or post offices. The study identified three segments of investors : aggressive, moderate, and conservative, based on lifestyles. Bashir et al. (2013) analysed the risk level of salaried individuals according to their income, education and age, further identifying the risk differential between salaried males and females. Females were found more risk-averse than males. The young and educated were found attracted to new risky investment opportunities. Parimalakanthi and Kumar (2015) studied the individual investor behaviour of investors in Coimbatore. The authors found that the safety of the principal amount, liquidity, income stability, and appreciation are factors behind making investments for respondents. Investors prefer to invest their excess money in different avenues, depending on the level of risk they are willing to take. Kovacs and Asemi (2021) used cluster analysis and descriptive statistics to study the investment patterns of retail bank customers. They identified similar customer groups using these techniques, focusing on risk-taking attitudes and saving patterns. The results confirmed the method's effectiveness in identifying distinct customer groups and describing their investment patterns and factors.

Composition of Investment Preferences

In this section, responses were sought for thirteen major investment options on a five-point Likert scale ranging from most preferred to least preferred. To analyse these responses, weights were assigned to them (5 for most preferred, 4 for preferred, 3 for neutral, 2 for not preferred much, and 1 for least preferred).

Table-1 shows the most and least desired investments by individual stock investors in Punjab. Individual investors in Punjab ranked fixed deposits as their top investment, with gold coming in second. Real estate investments are the third most chosen investment choice, followed by equities or common stocks as the fourth preferred investment option and mutual funds as the fifth preferred investment option.

Table-1 : Investment Preferences of Individual Investors

Investment Alternatives	Most Preferred (Freq.)	Preferred (Freq.)	Neutral (Freq.)	Not Preferred Much (Freq.)	Least Preferred (Freq.)	WAS	Std. Dev.	Rank
Common Stock or Equity	156	183	214	45	9	3.71	.797	4
Gold	240	187	119	57	4	3.99	1.014	2
Life Insurance	10	49	196	250	102	2.37	.911	7
Fixed deposits	317	193	82	10	5	4.33	0.831	1
P. O. Schemes (NSC, KVP, IVP)	8	69	189	236	105	2.41	0.946	6
Infrastructure Bonds/ Government Securities	5	15	90	309	188	1.91	0.790	10
ULIP's	0	29	114	322	142	2.05	0.782	9
SIP's	0	49	193	250	115	2.29	0.865	8
Real estate	125	336	111	32	3	3.90	0.797	3
Debentures	0	0	0	69	538	1.11	0.318	13
Mutual Funds	67	185	224	103	28	3.26	1.016	5
Derivatives/Futures/ Options/Swaps	8	18	65	270	246	1.80	0.843	11
Others (like commodities)	0	15	17	185	390	1.44	0.674	12

Source : Based on Author's calculation of Primary Data.

From the above Table, it is analysed that individual investors place investment in common stock or equity in the fourth position; however, other high-risk investments, i.e., investments in derivatives, futures options, and others (like commodities), are among the least preferred. Conversely, preferences towards low- and medium-risk investments, i.e., fixed deposits, gold, and real estate, are relatively high.

Preference for Stocks (High Risk Investment) and Other Investments (Low and Medium Risk Investment)

Individual investors' preferences for stocks, i.e., high-risk and other investments, and low and medium-risk investments, are assessed, and it is discovered that investors prefer low and medium-risk investments with a WAS of 4.01 over high-risk investments with a WAS of 3.19. The results from Table-1 reveal that the individual investors in Punjab hold a risk-averse attitude.

Demographic Profile of Sample Investors

The present section discusses a brief profile of the sample respondents as per their demographics. These demographic variables have been considered the basis for studying the investment preferences of the individual investors in the sample by various previous researchers, viz., (Lewellen et al., 1974; 1977; 1997; Gupta, 1991; Rajarajan, 1998; Nagpal & Bodla, 2007). Accordingly, the profile of sample investors as per their demographics is displayed in Table-3 below :

Table-2 : Preference for Stocks (High Risk Investment) vis-a-vis Other Investments (Low and Medium Risk Investment)

Preference	Most Preferred (Freq.)	Preferred (Freq.)	Neutral (Freq.)	Not Preferred much (Freq.)	Least Preferred (Freq.)	WAS	Std Dev.	Rank
Stocks (High risk investment)	105	151	167	125	59	3.19	1.225	**2**
Other investments (Low and Medium risk Investment)	245	187	116	57	2	4.01	1.001	**1**

Source : Based on Author's calculation of Primary Data.

Table-3 : Demographic Profile

Demographics		Number of Respondents	Per cent	Cumulative per cent
(a) Age (in years)	Up to 30 years	113	18.6	18.6
	30-45 years	247	40.7	59.3
	45-60 years	171	28.2	87.5
	Above 60 years	76	12.5	100.0
(b) Gender	Male	417	68.7	68.7
	Female	190	31.3	100.0
(c) Marital Status	Single	150	24.7	24.7
	Married	451	74.3	99.0
	Other	6	1.0	100.0
(d) Education	Less than graduation	64	10.5	10.5
	Graduation	228	37.6	48.1
	Post-graduation (prof degree)	153	25.2	73.3
	Post-graduation (other than prof degree)	156	25.7	99.0
	Doctorate	6	1.0	100.0
(e) Occupation	Service-private	177	29.2	29.2
	Service-govt.	111	18.3	47.4
	Own Business	182	30.0	77.4
	Housewife	21	3.5	80.9
	Retired	13	2.1	83.0
	Professional	71	11.7	94.7
	Others	32	5.3	100.0
(f) Income (per annum)	Less than Rs.2 lakhs	33	5.4	5.4
	Rs.2 to less than Rs.4 lakhs	157	25.9	31.3
	Rs.4 to less than Rs.6 lakhs	239	39.4	70.7
	Rs.6 to less than Rs.8 lakhs	132	21.7	92.4
	Rs.8 to Rs.10 lakhs	40	6.6	99.0
	Greater than 10 lacs	6	1.0	100.0

Source : Based on Author's calculation of Primary Data.

Table-3 (a) reveals that the highest percentage (40.7 per cent) of the respondents belong to the lower middle age group of 30 to 45 years; 28.2 per cent fall in the upper middle age group of 45 to 60 years; and 18.6 per cent constitute the lowest age group of up to 30 years and the representation of senior citizens, i.e., those above 60 years old, in the sample, is respectable (12.5 per cent) and adequate. Table-3(b) shows that 60.7 per cent of the study's respondents are male, with the remaining respondents being female, indicating a male-dominated sample. Table-3 (c) indicates that 74.3 per cent of the sample respondents are married 24.7 per cent are unmarried and 1 per cent belong to the other category.

Table-3 (d) indicates that the highest percentage of sample respondents fall in the category of graduates, i.e., 37.6 per cent; 25.7 per cent of respondents fall in the category of post-graduates (other than a professional degree); 25.2 per cent of respondents fall in the category of post-graduates (professional degree); 1 per cent of respondents fall under the category of doctorate; and 10.5 per cent of the respondents have an educational qualification less than a graduate.

Table-3(e) shows that the highest proportion of sample respondents in Punjab are businessmen, with 30 per cent running their businesses. The second highest proportion includes respondents with service in the private sector, i.e., 29.2 per cent; 18.3 per cent of the respondents are in government service; 11.7 per cent of respondents are professionals; and the rest include retired, housewives, and others. Table-3(f) indicates that 39.4 per cent of the sample respondents in Punjab fall in the category of ₹4 lakhs to less than ₹6 lakhs, forming the highest per cent of the sample included in this category; 25.9 per cent of respondents have an income level of ₹2 lakhs to less than ₹4 lakhs, followed by 21.7 per cent earning an income of ₹6 lakhs to less than ₹8 lakhs; 5.4 per cent of sample respondents belong to the category of income less than ₹2 lakhs; 6.6 per cent of respondents fall in the category of earning ₹8 lakhs to ₹10 lakhs; and only 1 per cent of the respondents earning greater than ₹10 lakhs.

Preference for Stocks vis-a-vis Low Risk Investment across Demographics : A Comparative Analysis

This section explores whether there is any significant difference between preferences for stocks (high-risk investment) and preferences for other investments (low and medium-risk investment) across their demographic characteristics, such as age, sex, occupation, income, gender and educational qualification. The hypotheses to be tested here, as shown in Table-4 below, are:

Table-4 : Hypotheses for Investment Preference for Stocks (High-Risk Investment) and other Investments (Low and Medium-Risk Investment) across Demographics

Label	Hypothesis
H_{01a}	There is no significant difference in preference for stocks (high-risk investments) across age groups.
H_{01b}	There is no significant difference in preference for other investments (low and medium-risk investments) across age groups.
H_{02a}	There is no significant difference in preference for stocks (high-risk investments) across genders.
H_{02b}	There is no significant difference between the preference for other investments (low and medium-risk investments) and the gender of the investors.
H_{03a}	There is no significant difference between the preference for stocks (high-risk investments) and the marital status of the investors.
H_{03b}	There is no significant difference between the preference for other investments (low and medium-risk investments) and the marital status of the investors.
H_{04a}	There is no significant difference between preference for stocks (high-risk investments) and the education level of the investors.
H_{04b}	There is no significant difference between preference for other investments (low and medium-risk investments) and the education level of the investors.
H_{05a}	There is no significant difference between a preference for stocks (high-risk investments) and the occupation of the investors.
H_{05b}	There is no significant difference between preference for other investments (low and medium-risk investments) and the occupation of the investors.
H_{06a}	There is no significant difference between the preference for stocks (high-risk investments) and the income groups of the investors.
H_{06b}	There is no significant difference between preference for other investments (low and medium-risk investments) and the income groups of the investors.

To explore in depth whether these demographic variables exert a significant impact on their preferences for stocks (high-risk investments) and other investments (low- and medium-risk investments), a chi-square test has been applied, as shown in Table-5 below.

Table-5 : Preference for Stocks and Other Investments across Demographics

Demographics			**Preference for Stocks (High-risk Investment)**	**Preference for other Investments (Low- and Medium-risk Investment)**
(a) Age groups	Upto 30	Chi-square statistic	p=21.701 df=12 sig=.041**	p=46.616 df=12 sig=0.000***
	30-45			
	45-60	Null Hypothesis	H_{01a}; Rejected	H_{01b}; Rejected
	Above 60			
(b) Gender	Male	Chi-square statistic	p=24.80 df=4 sig=0.000***	p=72.646 df=4 sig=0.000***
	Female	Null Hypothesis	H_{02a}; Rejected	H_{02b}; Rejected
(c) Marital Status	Single	Chi-square statistic	p=13.360 df=3 sig=.090*	p=7.563 df=8 sig=.477
	Married	Null Hypothesis	H_{03a}; Rejected	H_{03b}; Accepted
	Other			
(d) Education groups	Less than graduates	Chi-square statistic	p=19.54 df=16 sig=.241	p=23.65 df=16 sig=0.097*
	Graduates			
	Post graduates-prof degree			
	Post graduates-other than prof degree	Null Hypothesis	H_{04b}; Accepted	H_{04b}; Rejected
	Doctorate			
(e) Occupation level	Service private	Chi-square statistic	p= 23.392 df=24 sig=.497	p=38.296 df=24 sig=.032**
	Service govt.			
	Own business			
	Housewife			
	Retired	Null Hypothesis	H_{05a}; Accepted	H_{05b}; Rejected
	Professional			
	Others			

(f) Income groups	Less than Rs.2 lakhs p.a.	Chi-square statistic	p=30.723 df=20 sig=0.059*	p=10.523 df=20 sig=0.958
	Rs.2 lakhs to less than Rs.4 lakhs			
	Rs.4 lakhs to less than Rs.6 lakhs			
	Rs.6 lakhs to less than Rs.8 lakhs	Null Hypothesis	H_{06a}; Rejected	H_{06b}; Accepted
	Rs.8 lakhs to Rs.10 lakhs			
	greater than 10 lakhs			

*Significant (p<0.10), **Significant (p<0.05), ***Significant (p<0.01)

Source : Based on Author's calculation of Primary Data.

Age Groups

In Table-5 (a), the chi-square results reveal that there is a difference in the preference for stocks and age groups of investors; hence, hypothesis $\mathbf{H_{01a}}$ is rejected. The results also show a difference in the preference for low- and medium-risk investment and the age groups of the investors; hence, hypothesis $\mathbf{H_{01b}}$ is rejected.

The cross-tab analysis reveals that young individual investors in Punjab prefer less risky investments, the reason being that they fall into low-income groups and do not have much confidence and funds to put their money at stake. Senior investors prefer fixed-income investments because of their lower volatility. Lower middle-aged investors (30-45 years old) have a neutral preference for both sets of investments.

Gender

In Table-5 (b), the chi-square results reveal that there is a significant difference in the preference of the investors for stocks and gender; hence, hypothesis $\mathbf{H_{02a}}$ is rejected. The results also show a significant difference in the preference for low- and medium-risk investment and the gender of the investors; hence, hypothesis $\mathbf{H_{02b}}$ is also rejected.

The cross-tab analysis reveals that male investors prefer to invest in stocks, i.e., 46.8 per cent of male respondents have a high preference for stocks as compared to only 23.5 per cent of male respondents having a high preference for other investments, revealing that male investors are risk takers. The female investors are risk-averse as they prefer to invest more in other investments

(low and medium-risk investments), i.e., 26.3 per cent of female respondents have a high preference for other investments as compared to only 3.2 percent of female respondents stating their high preference for stocks. The reason is that, in general, it is the practice of male investors to do significantly more of the technical analysis on their own before making investment decisions and spend more time taking investment decisions than women. Women tend to adopt more conservative investment strategies than men, investing in safer vehicles, such as CDs and government bonds, while men tend to be less conservative, investing in higher-risk products, such as high-growth stocks (Lascu et al., 1997).

Marital Status

The chi-square results reveal that there is a significant difference in the preference of investors for stocks and marital status; hence, the hypothesis $\mathbf{H_{03a}}$ is rejected. The results show no significant difference in the preference for low- and medium-risk investments and marital status of the investors; hence, the hypothesis $\mathbf{H_{03b}}$ is accepted.

The crosstab analysis as shown in Table-5 (c) reveals that married respondents, i.e., 38.6 per cent of respondents, have a preference for stocks as compared to only 19.5 per cent of respondents stating their preference for other investments. However, single investors prefer low- and medium-risk investments, with 44.7 per cent of single respondents having preference for other respondents as compared to only 11.3 percent having preference for stocks, revealing that single investors are more risk-averse. The reason being that single young investors lack funds in order to take risks and invest in high-risk investments; on the other hand, married respondents have more funds and risk-taking ability.

Education Level

Table-5 (d) reveals that no significant difference is found in the preference for stocks (high-risk investment) and educational level of the investors; hence, the null hypothesis $\mathbf{H_{04a}}$ is accepted. A significant difference is found in the preference for low- and medium-risk investment across the educational level of the investors; hence, the null hypothesis $\mathbf{H_{04b}}$ is rejected.

The crosstab analysis as shown in Table-5(d) reveals that investors with low qualifications, i.e., less than graduates and graduates are risk-averse people and prefer low- and medium-risk investments, i.e., 48.4 per cent less than graduates' respondents and 42.5 per cent of graduate respondents state their preference for other investments as compared to only 14.1 per cent less

than graduate respondents and 15.8 per cent of graduate respondents. However, post-graduates (with a professional degree) are found to be risk takers, as 41.2 per cent of respondents state their preference for stocks and only 19.2 per cent state their preference for other investments, i.e., the percentage of respondents for stocks is high when compared. Post-graduates (other than professional degrees) are found to have a neutral preference for both sets of investments. Docto-rates are found to have a neutral prefe-rence for stocks and a high preference for other investments.

Occupation Level

The results of Table-5 (e) reveal that there is no significant difference in the preferences of investors for high-risk investments and occupations of investors; hence, hypothesis $\mathbf{H}_{05a}$ is accepted, revealing no difference in preferences for stocks across occupations. Compa-risons of percentages reveal that housewives, retirees, and other investors prefer low- and medium-risk investments. Own-business investors and service-government investors have an almost neutral preference for both sets of investments.

Income Groups

The results of Table-5(f) reveal a significant difference in the preference of investors for high-risk investments across the income groups of investors; hence, hypothesis H06a is rejected. Significant differences are found, revealing that lower-income investors have a low preference for stocks and a high level of preference for low- and medium-risk investments. However, the results show no significant difference in the preference for low- and medium-risk investment and the income groups of the investors; hence, the hypothesis $\mathbf{H}_{06b}$ is accepted.

The crosstab analysis reveals that low-income group investors, i.e., 33.3 per cent of respondents and 43.3 per cent of respondents, respectively, have a high preference for low- and medium-risk investments as compared to only 18.2 per cent of respondents and 19.7 percent of respondents, respectively, for stocks. Middle- and middle-high-income groups of investors are found to have a neutral preference for both stocks, i.e., high-risk investments, and other investments, i.e., low- and medium-risk investments. High-income groups have a neutral preference for other investments (low and medium-risk investments) and a high preference for stocks (high-risk investments).

The results conclude that the high-income group of individual stock investors in Punjab have more risk-taking ability. On the contrary, most respondents with low incomes put their money in

bank accounts. So, low-income respondents tend to be risk averters, while wealthier respondents tend to be risk seekers, implying that income may affect investors' risk behaviour.

Comparative Analysis of Investment Preference

The accompaning Table gives a comparative description of the investment preferences of individual investors across their demographics. A thumbnail sketch of the results derived from the percentages achieved above is shown in Table-6 below in terms of low, neutral and high levels of preference.

Conclusion and Recommendations

The present analysis gives a bird's-eye view of differences in investors' preferences for stocks (high-risk investments) and other investments (low- and medium-risk investments) across their demographics. Understanding investors' expectations from various investments is a very important issue to be studied. An attempt has been made to conduct a comparative analysis of the investment preferences for stocks (high-risk investments) and other investments (low- and medium-risk investments) among individual investors in Punjab across their demographics, and the research depicts the following findings, conclusions and implications.

The individual investors in Punjab placed fixed deposits as their highly preferred investment, followed by gold as the second highly preferred investment. Investments in real estate were ranked as the third most preferred investment by them, followed by equity or common stocks as the fourth preferred investment and mutual funds as the fifth preferred investment option.

It was found that individual investors placed investments in common stock or equity in the fourth position; however, other high-risk investments, i.e., investments in derivatives, futures options, and others (like commodities), and debentures were among the least preferred. On the other hand, preferences towards low- and medium-risk investments, i.e., fixed deposits, gold, and real estate, were found to be quite high.

The preference of the individual investors towards stocks, i.e., high-risk investments, and other investments, i.e., low and medium-risk investments, was also gauged, and it was found that investors preferred low and medium-risk investments with a WAS of 4.01 over high-risk investments with a WAS of 3.19, revealing that the individual investors in Punjab had a risk-averse attitude. This confirms that the majority of individual investors in Punjab are risk-tolerant and conservative investors and prefer to play it safe. The study

Table-6 : Investment Preferences across Demographics : A Comparative Analysis (Based on Percentage Analysis)

Demographic Features		Preference Level for Stocks (High-Risk Investments)	Preference Level for Other Investments (Low- and Medium Risk Investment)
Gender	Male	High	Neutral
	Female	Low	High
Age	Up to 30 years	Low	High
	30-45 years	Neutral	Neutral
	45-60 years	High	Neutral
	60 & above	Low	High
Marital Status	Single	Low	High
	Married	High	Neutral
	Other	Neutral	High
Educational Qualification	Less than graduates	Low	High
	Graduates	Low	High
	Post-graduates-prof degree	High	Low
	Post-graduates-other than prof degree	Neutral	Neutral
	Doctorate	Neutral	High
Occupation	Service private	High	Low
	Service government	Neutral	Neutral
	Own business	Neutral	Neutral
	Housewife	Low	High
	Retired	Low	High
	Professional	High	Neutral
	Others	Low	High
Annual Income	Less than Rs.2 Lakhs p.a.	Low	High
	2 to less than Rs.4 Lakhs	Low	High
	4 to less than Rs.6 Lakhs	Neutral	Neutral
	6 to less than Rs.8 Lakhs	High	Neutral
	8 to Rs.10 Lakhs	High	Neutral
	greater than Rs.10 Lakhs	High	Neutral

Source : Based on Author's calculation of Primary Data.

provides recommendations to investment product designers on how to design and market products that cater to low-risk investors.

Young investors were found to have a low preference for stocks as compared to other investments. The study suggests young individual investors in Punjab should increase their involvement in the stock market, as young investors have the capacity to take more exposure to asset choices as compared to older age groups.

The results revealed that lower-age investors in Punjab preferred less risky investments; the reason could be that such investors fall into the low-income group and do not have much confidence and funds to put their money at stake. It is suggested that individual investors aged up to 30 should be more vigilant and should take expert advice before making financial decisions.

Investors in the lower middle age group, i.e., 30-45 years old, had a neutral preference for both sets of investments, i.e., stocks, as well as other investment avenues. It is suggested that individual investors aged 30-45 should seek the opinion of financial experts, conduct analysis of financial investments and think cognitively, not emotionally, while making investment decisions.

However, investors belonging to the upper middle age group, i.e., 45-60 years old, preferred to invest in stocks, i.e., respondents from Punjab belonging to this age group were more risk-takers as compared to other age groups.

The results revealed that married respondents had more preference for stocks, i.e., high-risk investments, and single investors preferred more low- and medium-risk investments, i.e., single investors were found to be more risk-averse. The reason can be explained by the fact that single young investors lack funds in order to take risks and invest in high-risk investments; on the other hand, married respondents have more funds and risk-taking ability.

Significant differences revealed that less than graduates, graduates and doctorates preferred low- and medium-risk investments as compared to post-graduate (professional degree) and post-graduate (non-professional degree). The findings can be enlightened by the fact that the computation of risk and return profiles of capital market investments is more complex and difficult to estimate, leading to the fact that investors who hold a good educational profile have more risk-taking ability and prefer to invest in stocks (high-risk investments).

A comparison of percentages revealed that housewives, retirees, and other investors preferred other investments (low and medium-risk investments). Own-business investors had an almost neutral preference for both sets of investments. Service-government investors had a neutral preference for stocks (high-risk investments) and other investments (low- and medium-risk investments). However, results revealed that stocks (high-risk investments) were preferred by service-private employees and professionals with a higher percentage of preference.

The results concluded that as age increases and income increases, the risk-taking ability of individual stock investors in Punjab increases. So, low-income respondents tend to be risk averters, while wealthier respondents tend to be risk seekers. This implies that income may affect an investor's risk behaviour.

Since the market situation is ever-changing these days, so is the return on investments following the market condition. From the findings, it is concluded that investors need to be more updated and track not only their investment avenues where they have invested but also new avenues as well. This way, they can make the necessary changes to keep their portfolio profitable.

The present study has important implications for financial consultants as it has come out with certain interesting facets of an individual investor. The individual investor still prefers to invest in low- and medium-risk investments. This confirms that the majority of individual investors are conservative investors and prefer to play it safe.

The study provides recommendations for government and regulatory agencies, especially SEBI, who need to encourage retail investors' confidence in investing in stocks, as individual investors have rated their low preference for stocks as compared to other investments. So there is a need for more investor education to build the confidence of individual stock investors in Punjab.

Scope for Further Research

The research is confined to Punjab only, which may somewhat limit the generalizability of the findings and may not give similar results when generalised to other regions. Future studies can be undertaken by extending the subject nationwide so that the results of this study can be better generalized. People have many reasons to invest their money in different investment alternatives and differences in social, cultural, economic, political, and demographic factors may strikingly differentiate the behaviour of investors when making investment decisions.

Researchers can extend the scope of the study to understand the financial literacy level of individual investors across demographics.

One relevant area for future research could be to examine how financial consultants perceive their clients' investment preferences and how they take such opinions into account while interacting with investors.

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The Journal of Institute of Public Enterprise, July-December, 2023, Vol. 46, No. 2
ISSN : 0971-1864.

An Analysis of Financial Inclusion Schemes and Economic Empowerment : A Case Study of Kashmir Valley

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One of India's national objectives is financial inclusion, and the Indian government and Reserve Bank of India are working towards financial inclusion by incorporating vulnerable groups of society. It includes nationalising banks, establishing a network of commercial, regional, and cooperative banks, assigning sector lending goals, introducing self-help groups, and allowing business correspondents to provide home delivery of banking services. These were significant steps taken in the past to promote financial inclusion. The Reserve Bank of India's Financial Inclusion Plan aims to facilitate access to various banking services and enhance credit facilities for economically disadvantaged and vulnerable segments. Nevertheless, people often face difficulties accessing formal banking institutions, such as the non-availability of loans or credit. The study aims to analyse the impact of various social welfare schemes, including KCC, PMJDY, PMUY, SHGs, and PMMU, the residents of the Kashmir Valley. The study, based on primary surveys using a multistage random sampling approach in Pulwama and Srinagar districts of South and Central Kashmir, highlights the widespread use of financial inclusion schemes and the need for further efforts to improve accessibility and awareness of these initiatives among the population.

Keywords : Socio-Economic, Financial Inclusion, Financial Services, Schemes, Empowerment.

Introduction

Financial inclusion in India has long been perceived as a complex and intricate process, particularly when attempting to engage with the organised banking sector in contrast to unorganised and informal sources of finance. Individuals approaching formal banking institutions often encounter challenges related to accessibility, time commitment, consumption, and, most notably, the unavailability of loans or credit. Financial inclusion schemes represent strategic approaches aimed

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at affording opportunities to individuals hailing from the lowest economic strata by facilitating their access to banking and financial services offered by diverse banks. Financial institutions are striving to furnish credit promptly and under reasonable terms and conditions, encompassing affordable interest rates (Rangarajan Committee, 2008). Furthermore, it is widely acknowledged that various factors play a significant role in enhancing any economy, with financial goods and services being prominent among them. The Reserve Bank of India's (RBI) financial inclusion plan underscores the importance of integrating vulnerable segments into mainstream society by ensuring equitable access to comprehensive financial facilities for all. The RBI, along with the government, is striving to enhance the level of financial inclusion within society, aligning with one of India's national objectives. Financial inclusion is universally recognised as a critical step towards reducing poverty and inequality by channelling household savings into investments to meet precautionary motives and effectively manage uncertain financial crises and shocks.

Historically, several significant strides have been taken towards financial inclusion by nationalised banks, involving the establishment of an extensive network of bank branches, setting lending goals, and introducing various bank schemes. Initiatives such as forming self-help groups and enabling business correspondents have facilitated the development of micro, small, and large enterprises, thereby creating employment opportunities. Additionally, these endeavours have provided crucial financial support to the government through loans, bolstering revenue, and instilling a sense of financial security in the societal framework (Sethy, 2016). However, the former state of Jammu and Kashmir has long grappled with vulnerability due to consistent political intervention and ineffective implementation. Results have indicated that financial inclusion schemes launched in the region became inactive and ineffective after years of their initiation. Apart from political motivations, challenges such as weak absorption capacity, unsustainable uptake, lack of complementary infrastructure, conflicting policies, reluctance from bankers, crony capitalism, inadequate voluntary contributions, and the absence of Non-Governmental Organisations (NGOs) in the banking landscape have compounded the difficulties in delivering effective financial access.

Furthermore, there has been a notable lack of interest from NGOs in the former state of Jammu and Kashmir, which could have significantly augmented absorption capacity and,

consequently, the effectiveness of the financial inclusion program. The Government of India has introduced numerous schemes related to financial inclusion, with the overarching objective of providing social security and economic stability in the lives of the less privileged. These schemes include Pradhan Mantri Jan-Dhan Yojana (PMJDY), Kisan Credit Card (KCC), Self-Help Groups (SHGs), Pradhan Mantri Mudra Yojana (PMMY), and Pradhan Mantri Ujjwala Yojana (PMUY).

Need for the Study in Kashmir Valley

In this study, an exploration into the prospects of newly announced financial plans and schemes has been conducted. The society of Jammu and Kashmir is notably diverse and multicultural, with its socio-economic setup and political developments influenced by a range of indigenous and exogenous factors, including conflict, political instability, civil unrest, and natural disasters. Due to these reasons, there has been little progress in the government schemes in the Kashmir valley. Against this backdrop, the present research endeavours to bridge the gap by examining the effectiveness and impact of financial inclusion schemes on the social, economic, and personal empowerment of households in the Kashmir region. It will also shed light on the challenges that marginalised individuals face in achieving comprehensive financial inclusion. This study is intended to serve as a valuable reference for policy-makers seeking to attain complete financial inclusion in the state, especially in the Kashmir Valley. Policy-makers in Jammu and Kashmir stand to benefit from research in the development and interpretation of educational policies. Moreover, this study aims to enrich the existing literature by providing insights that can guide future research endeavours on the subject.

Financial Inclusion : A Brief Background

The Indian government has been implementing financial inclusion initiatives since the 1980s, following the principles of Mahatma Gandhi. These initiatives aim to integrate rural populations into financial inclusion, requiring significant investments in constructing inclusive financial infrastructure. The Reserve Bank of India (RBI) has directed all banks to create a three-year financial inclusion programme, which began in April 2010. Initiatives like PMJDY aim to raise awareness among the poor and newly connected members of existing branches and banking centres, enabling them to access banking services and meet their

financial needs through loans. This approach helps alleviate poverty and reduce unemployment at the grassroots level while also contributing to the economy by providing financial support, enhancing strength, and ensuring stability.

Financial inclusion is a two-fold endeavour that involves introducing schemes and educating impoverished individuals about their benefits. Awareness can pave the way for the setting up of new and emerging rural enterprises. The landscape of financial inclusion is evolving (Kumar, 2013), with initiatives like Kisan Credit Cards and General Credit Cards focusing on villages lacking banking facilities and populations exceeding 20,000. The National Payments Corporation introduced "RuPay," a domestic debit card in 2012 to improve digital and debit card culture. These initiatives aim to provide financial services, including microfinance, to vulnerable sections of society.

Review of Literature

Before embarking on a research project, conducting a thorough review of subject-relevant literature is of paramount importance. Thus, an effort has been made to examine existing literature on the topic to shed light on previous findings. The Rangarajan Committee defined financial inclusion in 2008 as providing adequate credit at an affordable price to the weaker sections of society during their times of need. This review aims to provide insights into previous findings. Laha and Arindam (2011) examined factors affecting landless, small, and marginal farmers in West Bengal, focusing on economic security. They found that awareness of banking services, rural non-farm subdivisions, literacy rates, and land reform measures did not significantly promote financial inclusion.Kumar and Nitin's 2013 study highlighted the significant role of socio-economic conditions in instilling the habit of using banking facilities among people, emphasizing regional efforts to promote banking services, while Pena et al. (2014) found that education significantly impacts financial inclusion in Mexico, with higher levels of education positively correlated with increased participation in financial services, based on data from the National Financial Inclusion Survey (2012) and nonlinear regression methods. Qasba et al. (2016) found that the Umeed programme improved household conditions in Jammu and Kashmir through self-help groups, while Kaur and Abrol's 2018 study found that access to financial services is crucial for financial inclusion in four districts of Jammu province. Despite government schemes like SHGs, KCCs, and PMGDY, the credit deposit ratio in Jammu and Kashmir remains

lower than the national average, highlighting the need for further financial inclusion efforts. Puri et al.'s 2019 study found that the level of education significantly impacts financial inclusion, with 348 participants from non-rural and non-urban areas showing an increase in financial awareness with higher education levels. Yadav et al. (2020) found that states with progressive financial inclusion perform better in the Human Development Index and education. However, the PMJDY scheme failed to promote financial inclusion uniformly across different states, with only a few benefiting and still requires substantial efforts due to issues like dormant accounts, illiteracy, and poor HDI performance. The study highlights the need for more comprehensive financial inclusion efforts.Singh et al. (2021) found a significant association between financial inclusion and economic growth in India. However, the PMJDY scheme only marginally improved growth due to poor access and utilization of bank services and an increase in dormant accounts. Kulkarni and Ghosh (2021) examined gender disparity in digital financial inclusion and its impact on economic development, identifying barriers to household financial inclusion and suggesting the use of digital financial services to enhance social and economic autonomy.

Objectives

- To examine the socio-economic status of the households in the study area.
- To evaluate the effectiveness and impact of financial inclusion schemes on households in the study area of Kashmir Valley.

Database and Methodology

The study aimed to understand the challenges and opportunities related to supply-side obstacles in reaching rural and urban populations, focusing on their empowerment status. The study conducted a primary survey between March and April 2022, using closed-ended questions to gather information from surveyed households. A multi-stage random sampling approach was used in the district selection based on PMJDY performance, with Pulwama as the lowest-performing rural district and Srinagar as the best urban district. Two hundred families from various socio-economic communities were then sampled, with 50 people drawn from four villages and wards. The study employed multiple statistical methods, including frequency distribution, mean, percentage, skewness, and kurtosis, and utilised custom tables and descriptive statistics to summarise and elucidate collected data. It applied a binary logistic regression model to

depict the relationships between household empowerment and select financial inclusion schemes, with empowerment designated as a dependent variable characterised by a dichotomous or binary nature (yes or no). In conclusion, this study utilised an effective sampling methodology to comprehensively explore the challenges, issues, and opportunities related to supply-side obstacles in reaching rural and urban populations.

Socio-Economic Profile of Households

This section discusses the demographic profile of the surveyed respondents, encompassing their age, income, educational qualifications, etc. The information obtained through descriptive statistics and the results were processed and presented in Tables-1 to 6 below.

Table-1 shows the gender status of the respondents. It depicts that the majority of respondents (73.5%) were males, with 36.5 per cent belonging to rural areas and 37 per cent to urban areas. In contrast, a quarter of the respondents were female, with 13.5 per cent from rural areas and 13 per cent from urban areas. The higher representation of male members can be attributed to the head of the household typically

Table-1 : Gender Status of Respondents

Area	Female	Male	Total
Rural	27(13.5%)	73(36.5%)	100(50.0%)
Urban	26(13.0%)	74(37.0%)	100(50.0%)
Total	53(26.5%)	147(73.5%)	200(100.0%)

Sources : Field Survey, 2022.

Table-2 : Status of Social Category of Respondents

Area	GEN	OSC	SC	ST	Total
Rural	65 (32.5%)	28 (14.0%)	6 (3.0%)	1 (0.5%)	100 (50.0%)
Urban	72 (36.0%)	20 (10.0%)	7 (3.5%)	1 (0.5%)	100 (50.0%)
Total	137 (68.5%)	48 (24.0%)	13 (6.5%)	2 (1.0%)	200 (100.0%)

Sources : Field Survey, 2022.

Note : *SC= Social caste, OSC= Other Social castes.

being male rather than female. This gender distribution pattern is consistent in both rural and urban areas.

The data presented in Table-2 indicates that 68.5 per cent of the respondents belonged to the general category, with 32.5 per cent residing in rural areas and 36 per cent in urban areas. Similarly, 24 per cent of the respondents were categorised as OBC, with 14 per cent and 10% from rural and urban areas, respectively. Additionally, 6.5 per cent and 1 per cent of the sampled respondents represented the S.C. and S.T. categories, respectively. The prevalence of the general category among the population in the study area is due to their economic prosperity and higher standard of living.

Table-3 illustrates that 50% of respondents have three or more earning members within their family, while 26% have only one. A minority (11.5%) have no earning members, and 12.5% have two. Notably, households with three or more family-earning members are predominantly in the agriculture sector, with most rural workers generating income from agricultural activities. It suggests a high absorption of family members in agricultural work, contributing to disguised employment without significantly increasing overall family income.

The educational level of the respondents who participated in the survey is shown in Table-4. Most respondents (32.5%) were graduates or higher, with 11.5 per cent residing in rural and 21 per cent in urban areas. In the same way, respondents with high school and secondary education each account for 17.5 per cent. A mere 17 per cent of the population lacks formal education, and only 15.5 per cent have primary education. The majority of the respondents who were from urban areas were

Table-3 : Number of Earning Members in the Family

Area	Only 1 Family Member	Both Partner	Three or More Members	None
Rural	27 (13.5%)	5 (2.5%)	52 (26.0%)	16 (8.0%)
Urban	25 (12.5%)	20 (10.0%)	48 (24.0%)	7 (3.5%)
Total	52 (26.0%)	25 (12.5%)	100 (50.0%)	23 (11.5%)

Source : Field Survey, 2022

Table-4 : Educational Level of Respondents

Area	Illiterate	Primary	Secondary	High Secondary	Graduate and above
Rural	25 (12.5%)	16 (8.0%)	16 (8.0%	20 (10.0%)	23 (11.5%)
Urban	9 (4.5%)	15 (7.5%)	19 (9.5%	15 (7.5%)	42 (21.0%)
Total	34 (17.0%)	31 (15.5%)	35 (17.5%	35 (17.5%)	65 (32.5%)

Sources : Field Survey, 2022.

graduates due to better school and college facilities in urban areas in comparison to rural areas.

Table-5 shows that 39 per cent of respondents' families have a monthly income below $10,000, with 50 out of 78 households in this category being from rural areas. In addition, 18 per cent receive a monthly income between $10,000 and 20,000, while 18.5 per cent maintain a monthly income between 20,000 and 30,000. Only 24.5 per cent reported a monthly income over $30,000.

Table-6 shows that 59.50 per cent of respondents are classified as APL (above the poverty line), while 40.5 per cent are BPL (below the poverty line). The majority of respondents fall under APL due to their combined family income exceeding the poverty criteria, while 40.5% are BPL due to their backwardness. The government of India has made efforts to improve

Table-5 : Monthly Income of the Households (Rupees)

Area	Less than 10,000	Between 10,000 – 20,000	Between 20,000 – 30,000	Above 30,000
Rural	50 (25.0%)	24 (12.0%)	11 (5.5%)	15 (7.5%)
Urban	28 (14.0%)	12 (6.0%)	2 6(13.0%)	34 (17.0%)
Total	78 (39.0%)	36 (18.0%)	37 (18.5%)	49 (24.5%)

Sources : Field Survey, 2022

Table-6 : Economic Status of Respondents

Area	APL	BPL	Total
Rural	47 (47%)	53 (53%)	100 (50.0%)
Urban	72 (72%)	28 (28%)	100 (50.0%)
Total	119 (59.50%)	81 (40.5%)	200 (100.0%)

Source : Field Survey, 2022.

the economic status of underprivileged sections, but a recent survey by NITI Aayog revealed that 10.35 per cent of the population in J&K lives below the poverty line, emphasizing the need for further efforts.

Empowerment through Financial Inclusion Schemes

It shows how the government empowers people from different socio-economic communities through various schemes, policies, and initiatives. Tables showed how various financially inclusive industries help people from multiple places, classifications, genders, and economic backgrounds.

Table-7 presents data on the beneficiaries of the Pradhan Mantri Jan Dhan Yojana (PMJDY) and Pradhan Mantri Mudra Yojana. In rural areas, 58.9 per cent of respondents benefitted from the PMJDY programme, indicating higher awareness among rural residents. In contrast, 41.1 per cent of respondents benefited from urban areas. Among the PMJDY participants, 32.6 per cent were females, while 67.4 per cent were males. The PMJDY plan notably benefited 61.1 per cent of respondents from the general category, reflecting their enhanced understanding of the scheme's benefits and banking procedures compared to other categories. Additionally, 29.5 per cent were from the OBC category, 4.8 per cent from the SC category, and 1 per cent from the ST category. Regarding economic status, 40 per cent of respondents were APL beneficiaries, 35.2 per cent were BPL beneficiaries, and 15.2 per cent were from other economic categories.

The Mudra system did not help rural respondents because of a lack of understanding about its benefits, as rural inhabitants were mainly involved in agriculture and horticultural industries. However, 100 per cent of urban respondents benefited from the Mudra

Table-7 : Pradhan Mantri Jan Dhan Yojna and Pradhan Mantri Mudra Yojna

Variables		Benefit - PMJDY		Benefit - MUDRA	
		No	Yes	No	Yes
Area	Rural	41.9%	58.9%	54.1%	0.0%
	Urban	58.1%	41.1%	45.9%	100.0%
Gender	Female	21.0%	32.6%	25.4%	40.0%
	Male	79.0%	67.4%	74.6%	60.0%
Category	GEN	75.2%	61.1%	69.2%	60.0%
	OBC	19.0%	29.5%	22.7%	40.0%
	SC	4.8%	8.4%	7.0%	0.0%
	ST	1.0%	1.1%	1.1%	0.0%
Economic Status	APL	49.5%	40.0%	43.2%	66.7%
	BPL	35.2%	46.3%	42.2%	20.0%
	Others	15.2%	13.7%	14.6%	13.3%

Source : Field Survey, 2022.

Note : *SC= Social caste, OSC = Other Social castes

scheme, primarily due to employment opportunities and loans taken to address immediate business needs. Of the Mudra participants, 40 per cent were females, while 60 per cent were males. Notably, 60 per cent of the beneficiaries were from the general category, engaged in various commercial activities and often availed of bank loans. In contrast, no respondents from the SC and ST categories benefited from the Mudra system. Regarding economic status, 66.7 per cent of respondents from the APL category benefited from Mudra and engaged in other commercial activities. In comparison, just 20 per cent of those in the BPL group profited, owing to their involvement in daily casual labour and a lack of economic stability to start enterprises.

Table-8 provides insights into the beneficiaries of the Self-Help Group (SHG) and Kisan Credit Card (KCC) Yojanas. A significant portion of respondents—75.2 per cent in rural areas and 24.8 per cent in urban areas—benefitted from the SHG scheme. Notably, respondents in rural areas demonstrated better awareness of the scheme's benefits compared to their

Table-8 : Self-Help Groups and Kisan Credit Cards

Variables		Benefit SHG		Benefit KCC	
		No	Yes	No	Yes
Area	Rural	24.2%	75.2%	27.5%	100.0%
	Urban	75.8%	24.8%	72.5%	0.0%
	Total	**100 %**	**100%**	**100 %**	**100%**
Category	GEN	79.8%	57.4%	73.9%	56.5%
	OBC	12.1%	35.6%	17.4%	38.7%
	SC	7.1%	5.9%	7.2%	4.8%
	ST	1.0%	1.0%	1.4%	0.0%
	Total	**100 %**	**100%**	**100 %**	**100%**
Economic Status	APL	51.5%	38.6%	50.7%	32.3%
	BPL	33.3%	47.5%	34.8%	53.2%
	Others	15.2%	13.9%	14.5%	14.5%
	Total	**100 %**	**100%**	**100 %**	**100%**

Source : Field Survey, 2022.

Note :*SC= Social caste, OSC= Other Social castes

urban counterparts, who were often preoccupied with other activities and lacked awareness of the scheme's advantages. Among the beneficiaries of the SHG scheme, 57.4 per cent were from the general category, 35.6 per cent from the OBC category, 5.9 per cent from the SC category, and 1 per cent from the ST category. Regarding economic status, 38.6 per cent of res-pondents were APL beneficiaries, 47.5 per cent were BPL beneficiaries, and 13.9 per cent belonged to other financial positions.

In the urban region, no respondents benefited from the KCC plan, as they typically did not possess agricultural or horticultural land, a requirement for benefiting from this scheme. Also, in rural areas, 100 per cent of respondents benefited from the KCC plan, emphasising its significance for those engaged in agricultural and horticultural activities. Of the KCC participants, 30.6 per cent were females, and 69.4 per cent were males. Additionally, 56.5 per cent of the beneficiaries were from the general category,

38.7 per cent were from the OBC group, 4.8 per cent were from the SC cate-gory, and no respondents from the ST category benefited from the KCC scheme.

Table-9 displays the PMUY benefits received by 51 per cent of rural and 41 per cent of urban respondents. The PMUY initiative aided 36.5 per cent of respondents from the general category, who generally have access to facilities provided by this scheme. Respondents from this category frequently expressed a lack of focus on these schemes, perceiving them to be targeted towards the economically disadvantaged.

Furthermore, PMUY benefitted 68.8 per cent of respondents from the OBC group, 61.5 per cent from the SC category, and 50 per cent from the ST category. Regarding economic position, 37.8 per cent of respondents in the APL category, 58 per cent in the BPL category, and 37.9 per cent in other economic statuses benefitted from PMUY. These numbers indicate the success of the PMUY initiative in Jammu and Kashmir. The relevant authorities must put effort into raising awareness about the assistance available through this programme to guarantee that the program's benefits reach 100 per cent of the population in the relevant locations.

Table-9 : Benefit of Pradhan Mantri Ujjwala Yojna

Variables		No	Yes
Area	Rural	49.0%	51.0%
	Urban	59.0%	41.0%
Category	GEN	63.5%	36.5%
	OBC	31.2%	68.8%
	SC	38.5%	61.5%
	ST	50.0%	50.0%
Economic Status	APL	62.2%	37.8%
	BPL	42.0%	58.0%
	Others	62.1%	37.9%

Source : Field Survey, 2022.

Impact of Financial Inclusion Schemes

The primary objective of this study is to examine the socio-economic changes within communities resulting from the impact of various social schemes and services provided by both state and central governments in a nation. In this context, the present study endeavours to capture and analyse these changes within the Kashmir valley.

Table-10 illustrates the degree of financial independence achieved through the financial inclusion programmes. The financial inclusion programmes in rural areas resulted in a reduction in financial vulnerabilities for 81 per cent of respondents, while only 27 per cent in urban areas showed a reduction. This discrepancy is due to the earlier establishment of financial institutions in urban areas, which increased awareness of financial products and services.

Table-10 : Impact of Financial Inclusion Schemes on Socio-economic Conditions Households

Variables		Rural		Urban	
Reducing in Exploitation	No	19	19.0%	73	73.0%
	Yes	81	81.0%	27	27.0%
Finance need	No	15	15.0%	59	59.0%
	Yes	85	85.0%	41	41.0%
Income Generated	Below 3,000	18	18.0%	9	9.0%
	3,000 – 5,000	10	10.0%	2	2.0%
	5,000 – 7,000	3	3.0%	4	4.0%
	Above 7,000	8	8.0%	12	12.0%
	NONE	61	61.0%	73	73.0%
Saving Generated	Below 1,000	33	33.0%	19	19.0%
	1,000 – 2,000	26	26.0%	6	6.0%
	2,000 – 3,000	7	7.0%	1	1.0%
	Above 3,000	12	12.0%	16	16.0%
	NONE	22	22.0%	58	58.0%

Source : Field Survey, 2022.

In rural areas, 18 per cent of respondents earned less than 3,000, while in urban areas, 9 per cent earned less than 3,000, 2 per cent earned between 3,000-5,000, 4 per cent earned between 5,000-7,000 and 12 per cent earned more than 7000.

Financial inclusion programmes have led to significant savings in rural areas, with 33% of respondents saving less than 1,000, 26 per cent saving between 1,000 and 2,000, 7 per cent saving between 2,000 and 3,000, and 12 per cent saving more than 3,000, while in urban areas, 19% saved less than 1,000, 6 per cent saved between 1,000 and 2,000, and 1 per cent saved between 2,000 and 3,000.

Empowerment and Financial Inclusion Schemes by Logistic Regression

Our estimated results demonstrate the significance of the model used in our study. In cross-sectional data, a calculated value of 20% is generally considered significant in the binary regression model. Hence, our model is well-fitted, explaining 66 per cent of the variation in regression through regressors (R-squared value estimated using the Nagelkerke Criteria). The presented table contains p-values for each variable, aiding in result interpretation. Notably, the p-values for the benefits of PMJDY (p = 0.000), KCC (p = 0.00), and PMUY (p =.001) are

Table-11 : Model Summary of Binary Model

-2 Log likelihood		Cox & Snell R Square			Nagelkerke R Square			
137.392[a]		.485			.654			
Coefficients and Odds Ratio								
Variable Name	**B**	**S.E.**	**Wald**	**df**	**Sig.**	**Exp(B)**	**95% C.I. for EXP (B)**	
							Lower	**Upper**
Benefit PMJDY	1.715	.476	12.990	1	.000	5.559	2.187	14.130
Benefit PMMY	.923	.951	.942	1	.332	2.516	.390	16.211
Benefit KCC	3.509	.853	16.916	1	.000	33.411	6.276	177.864
Benefit SHG	.492	.547	.811	1	.368	1.636	.560	4.777
Benefit PMUY	1.624	.507	10.275	1	.001	5.072	1.879	13.690
Constant	-10.164	1.547	43.182	1	.000	.000		

significant, making the model effective in predicting results. However, some variables, like the benefit of mudra (p = 0.332) and the benefit of SHG (p = 0.368), are insignificant, rendering the model unstable.

In the aforementioned Table-11, a positive beta coefficient value for the benefit of KCC, PMJDY, Mudra, SHG, and PMUY signifies that an increase in the benefit of these schemes will enhance people's empowerment and encourage their utilization. SHGs provide crucial financial support to females, aiding them in becoming independent and conducting their activities effectively. On the other hand, KCC loans are primarily utilised for agricultural needs, assisting individuals in working on their agricultural land. In urban areas, Mudra significantly contributes to entrepreneurs, providing loans to initiate start-ups, thus reducing unemployment and promoting empowerment.

The Exp. (B) value for the benefit of KCC, PMJDY, SHG, MUDRA, and PMUY schemes is more significant than one. This indicates that a one-unit change in the independent variable, while keeping other variables constant, predicts a probability of empowerment of 33.411, 5.559, 1.636, 2.516, and 5.072, respectively. Moreover, KCC, PMJDY, SHG, Mudra, and PMUY schemes play a crucial role in poverty reduction, income distribution, and increased employment opportunities. Most benefits from these schemes result in enhancing the effectiveness of financial inclusion initiatives for empowerment. Policymakers should emphasise policies promoting empowerment through these schemes, extending their benefits to the poor and marginalised, along with a broader range of financial services (Hannig & Jansen, 2010).

The study observed that social welfare schemes have impacted numerous lives by providing various services. For instance, KCC loans have facilitated agricultural activities; Pradhan Mantri Ujjwala Yojana has reduced living costs through subsidies and decreased reliance on wooden fuel; and Pradhan Mantri Mudra Yojana has supported the establishment and operation of small businesses, especially in urban areas. The SHGs scheme has been instrumental, particularly for females in rural areas, in fulfilling daily household needs and saving money through bank linkages. Additionally, Pradhan Mantri Jan Dhan Yojana has been widely utilised in both districts, with people using bank accounts for various daily transactions, emphasising the necessity of a bank account in today's digital banking landscape.

Findings of the Study

The usage of the PMJDY scheme was high in both rural and urban areas, with 61.1 per cent of the general category benefiting from it and a majority of respondents (40%) belonging to the APL. Pradhan Mantri Mudra Yojna was highly beneficial in rural regions, with 100 per cent benefiting and 60 per cent of the beneficiaries being males. The majority of respondents for this scheme were related to the general category. On the specifics of the SHGs scheme, 75.2 per cent of respondents benefited in rural areas, 24.8 per cent benefited in urban areas, and 57.4 per cent were from the general category. Regarding the KCC scheme, no urban respondents benefited, while 100 per cent of rural respondents did. In terms of economic status, 53.2 per cent of BPL respondents benefited from the KCC scheme. Additionally, 37.8 per cent of respondents related to the APL benefited from the PMUY, with 58 per cent from the BPL and 37.9 per cent from other economic statuses benefiting from the PMUY scheme.

The challenges faced by respondents include location-related issues, limiting access to financial inclusion and government benefits, and reducing empowerment. Transportation issues restricted frequent transactions, affecting the effectiveness of financial inclusion schemes for empowerment. This challenge also restricted them from frequent transactions due to transportation issues, leading to challenges in the effectiveness of financial inclusion schemes for empowerment. In rural areas, 18 per cent of respondents earned an income below 3,000 from financial inclusion schemes, while 12 per cent generated an income of more than 7,000. Moreover, 33 per cent of rural respondents saved below 1,000, and 26 per cent saved between 1,000 and 2,000. In urban areas, 19 per cent of respondents saved below 1000, while 16 per cent saved more than 3,000. Several financial inclusion schemes were highly significant, such as the benefit of PMJDY ($p = 0.000$), the benefit of KCC ($p = 0.00$), and the benefit of PMUY ($p = .001$), making the model significant in predicting results. The positive beta coefficient value for the benefits of KCC, PMJDY, Mudra, SHG, and PMUY implies that an increase in the benefits of these schemes will enhance people's empowerment and encourage their utilisation.

Conclusion

Based on the analysis, it is evident that financial inclusion has significantly impacted households' empowerment, enhancing their economic development by increasing income, consumption,

savings, and meeting financial needs. Progress has been made in the Kashmir Valley towards inclusive growth through financial inclusion. However, there is still a need for continued efforts. Financial institutions, particularly banks, must adapt their strategies to align with the needs and priorities of people, especially those from rural areas. Policymakers should invest in and expand these initiatives on a larger scale to liberate many individuals from the debt trap of moneylenders.

In rural areas of Kashmir, individuals face challenges related to connectivity and lack of interest from banks in opening branches due to non-profitability or geographical difficulties. To ensure the success of financial inclusion programs, the government should prioritize the establishment of new bank branches in remote regions. This approach would encourage unbanked sections of society to open accounts with banks and cultivate their savings. Both the banking network and the government need to increase funding for the sustainability of the current mechanism that provides financial services to those in need.

Acknowledgements

The study was undertaken as a part of the 'RBI Scholarship Scheme" for Faculty Members of Academic Institutions 2021, which is gratefully acknowledged.

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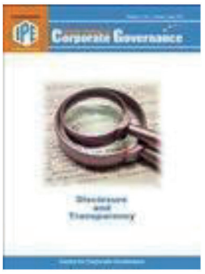

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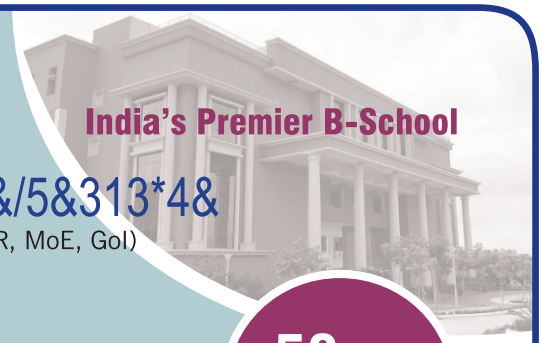

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