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EXPLORING THE ROLE OF PMJDY IN ENHANCING FINANCIAL EMPOWERMENT AND CREDIT ACCESS

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Abstract: Since its launch in August 2014, the Pradhan Mantri Jan Dhan Yojana (PMJDY) has represented a landmark initiative by the Government of India to advance financial inclusion and expand access to institutional credit for economically marginalized populations. This study examines the extent to which the program has impacted credit accessibility for individuals living below the poverty line. By providing universal access to bank accounts, credit facilities, and financial products, PMJDY seeks to address systemic exclusion that has historically forced low-income households to depend on informal and exploitative lending sources. The paper highlights the central role of financial inclusion in reducing poverty, fostering economic growth, and mitigating income inequality. Drawing on secondary data, policy reports, and empirical assessments, the research investigates how PMJDY has altered the credit landscape and whether it has successfully enabled the poor to participate in formal financial systems. Findings suggest that while the scheme has achieved significant success in expanding bank account ownership and raising awareness about financial services, challenges remain in ensuring effective utilization of these accounts, sustained credit access, and long-term financial empowerment. The study concludes that PMJDY has been a critical step toward integrating marginalized groups into the financial mainstream, though its full potential in improving institutional credit access requires stronger policy support, financial literacy initiatives, and mechanisms to enhance credit uptake.

Keywords: Financial Inclusion, Institutional Credit, Poverty Alleviation, PMJDY, Economic Empowerment

INTRODUCTION

The aim of this research paper is to examine the impacts of the Pradhan Mantri Jan Dhan Yojana (PMJDY) policy on the access of credit for people below the poverty line in India since its implementation in 2014. The PMJDY Program, launched in India on 28th August 2014, represents the Central Government of India's significant step towards financial inclusion for the underprivileged population. The program has been designed to provide credit access and other banking services for individuals who fall below the poverty line, and hence aims to alleviate poverty and improve the economic stability of the economically marginalized people. This research paper aims to explore how the program, through its strong emphasis on financial inclusion and providing large scale banking services to economically disadvantaged people, has influenced the accessibility and prevalence of credit facilities and options for people below the poverty line.

Financial inclusion has long been recognized as a crucial factor in fostering economic growth and reducing income

Inequality. For individuals living below the poverty line, access to credit is often limited or entirely absent, forcing them to rely on exploitative informal lending sources. Such financial exclusion perpetuates a cycle of poverty and hinders social and economic progress. The PMJDY program, with its ambitious goals of opening bank accounts for the unbanked, providing access to financial products, and extending credit facilities, has the potential to bring about transformative changes. Understanding the real-world impact of this program is essential to assess its effectiveness in improving the credit landscape for the marginalized.

This paper aims to investigate the impacts of the PMJDY program on access to credit for individuals below the poverty line in India. The research question of this paper is: What are the impacts of the Pradhan Mantri Jan Dhan Yojna (PMJDY) program on access to credit for people below the poverty line in India since 2014. Through an analysis of available data sets from the Open Government Data (OGD) platform and existing literature, it seeks to ascertain whether the PMJDY program has succeeded in increasing formal credit usage, reducing dependence on informal and unofficial sources of borrowing, and enhancing financial stability for the vulnerable population. We maintain that the PMJDY program has Positively influenced credit access for people below the poverty line, thereby contributing to their economic empowerment and social upliftment. By understanding the outcomes of this program, policymakers can refine its implementation and address any obstacles faced during the implementation of this program.

A significant body of literature has emerged that examines the PMJDY program's impact on financial inclusion and credit accessibility. Previous studies have highlighted the potential benefits of the program, such as increased bank account ownership, enhanced savings mobilization, and improved financial literacy among the underserved communities. However, while some research indicates positive outcomes, others have raised concerns about the persistence of financial exclusion due to various barriers, including limited credit outreach. The existing literature offers valuable insights, yet there remain gaps in our understanding of the program's full impact on credit access for individuals below the poverty line. By doing an analysis of government provided data sets and consolidating the findings of previous studies, this research paper aims to provide an evaluation of the PMJDY program's effects on credit availability, usage patterns, and financial wellbeing of the target population.

In summary, this research paper seeks to shed light on the real-world implications of the PMJDY program's efforts to improve credit access for those living below the poverty line in India. Through an examination of existing literature, data analysis, and methodological approaches, we aim to contribute to the ongoing discourse on financial inclusion and inform policymakers on effective strategies to combat poverty and promote inclusive economic growth.

LITERATURE REVIEW

This literature review aims to analyze existing research available on the impacts of the PMJDY program on accessibility and availability of credit for the people below the poverty line in India. This literature review will be divided into the following sections: financial inclusion in the past, the PMJDY program, access to credit for the people below the poverty line population, implementation and progress of PMJDY, impact on credit accessibility, microcredit and Self-Help Groups (SHGs), financial behavior and empowerment.

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Financial Inclusion in the Past

The issue of financial inclusion and lack of credit access in India is a multifaceted one that has been prevalent across the country since the nation’s independence. The issue deeply interrelated with the wide basis of India’s fundamental socioeconomic history. In the country's pre-independence era, India's economy was heavily based on agriculture as a majority of the population were situated in rural areas (Bardhan, 1984). This rural environment served as an explanation for a severe disparity in access to formal banking services, which were mostly found in urban areas. Rural inhabitants, who made up the majority, had limited access to these formal financial institutions due to banking services that were centered in urban areas. This urban-rural divide had significant consequences. The lack of access to credit for managing varied financial requirements, such as agricultural investments, household costs, and crises, presented considerable difficulties for rural people. They had limited options because there were no accessible formal banking systems, and they frequently turned to unlicensed and informal moneylenders. The monopoly position that moneylenders held in rural lending markets increased their ability to take advantage of borrowers. Moneylenders could enforce strict terms and high interest rates since there was no oversight and no competition from legitimate banks, which caused rural households to become severely indebted. Due to the continuous loop created by this circumstance, borrowers failed to make their loan repayments, furthering their financial difficulties.

Post-Independence India reached a significant milestone in the nation’s goal of financial inclusion and egalitarian credit access. The nationalization of large banks in 1969 was one of the most important policy actions. The main goal of this historic decision was to provide formal banking services to previously neglected areas, such as rural areas and disadvantaged communities. By utilizing the vast branch network and resources of these institutions, nationalizing banks was considered as a crucial step in achieving financial inclusion. The policy sought to eradicate the gap in access to credit between urban and rural areas as well as ensure that banking services reached rural regions, where they were largely needed. But despite the policy's economically sound ideas, it experienced challenges when being put into action. The successful provision of credit services to marginalized individuals was frequently thwarted by bureaucratic inefficiencies within the nationalized banking sector. Barriers that made it difficult for underprivileged people and groups to navigate were established by administrative bottlenecks, paperwork requirements, and laborious procedures. When loan approvals and payments were delayed by this bureaucracy, borrowers were unable to obtain credit when they most needed it. Another major problem at the time was the limited reach of the policy's implementation. Although the nationalized banks increased the number of its branches, their presence in remote and rural areas remained insufficient. People had to travel great distances to get financial services since many underprivileged areas still lacked physical banking infrastructure (Banerjee & Duflo, 2019). For people whose lives and agricultural activities depended on formal banking, this geographic barrier constituted a significant difficulty.

In India's agricultural history, the Green Revolution of the 1960s and 1970s was a crucial turning point. Through the use of chemical fertilizers, modern farming practices, and the adoption of high-yielding crop varieties, agricultural production had increased (Pingali, 2012). This revolution significantly increased agricultural productivity, but it also highlighted how important formal credit access and banking infrastructure is for rural areas. Farmers needed loans to buy seeds, fertilizer, pesticides, and machinery as a result of the rising usage of modern inputs. To address the needs for rural financing, specialized institutions like the National Bank for Agriculture and Rural Development (NABARD) were created. NABARD played a crucial role by assisting rural development programs and providing direct loans to the agricultural sector.

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Credit access discrepancies did not go away, especially for small and marginalized farms, even with these initiatives like the establishment of NABARD. Research shows that economically disadvantaged people often struggled to get loans from conventional financial institutions because they lacked formal credit histories and collateral. The lack of credit available to agricultural communities in need has brought attention to the need for creative methods of increasing credit availability. Microfinance institutions (MFIs) were created in the second half of the 20th century as a means of bridging the credit gap that many economically underprivileged people, such as small business owners and farmers, were experiencing. MFIs aimed to give loans of small amounts, sometimes known as microloans or microcredit, to those who were considered vulnerable by conventional banks (Armendariz & Morduch, 2010). With the goal of reducing poverty, these microloans were designed to aid in income-generating activities.

Previous Research on Financial Inclusion

Financial Inclusion has been a topic of considerable research over the course of the last few decades due to its importance in improving the economic welfare of societies. Scholars from all over the world have investigated how various factors affect the ability of people to have access to financial services, mentioning demographic incongruity and disparity. For example, research studies by Zulfiqar et al. (2016) have explored how various factors can influence the ability for an individual to receive standard banking services. Some of these factors are cultural barriers, geographical location, limited literacy, age, and gender. These factors have a varying amount of impact that influence access to credit people have. A large amount of research has been conducted on the disparities of the level of financial inclusion between males and females in particular on drastic differences in the level of financial and general literacy. The difficulties encountered in advancing financial inclusion have been greatly helped by initiatives to encourage financial literacy. A study by Bhushan and Medury (2013) examined financial literacy factors like gender, education, and income. According to the survey, urban working-class people have better levels of financial literacy than their rural counterparts. This discrepancy highlights the necessity of specialized financial literacy programs to enable people in economically underserved areas to make sound financial decisions to boost their economic development.

The PMJDY Program

In India's effort to increase financial inclusion, particularly for people living below the poverty line, the Pradhan Mantri Jan Dhan Yojana (PMJDY) program has emerged as the flagship initiative. Aiming to create a platform for banking services available to all citizens, with a special focus on those who do not have access to the formal financial system, PMJDY was launched with ambitious objectives. The availability of zero-balance accounts, which allows people to create bank accounts without being required to maintain a minimum balance, is one of the pillars of PMJDY. Removing a major obstacle for people to access the regulated banking system, this provision is particularly important for people living below the poverty line (Demirgüç-Kunt & Singer, 2017). In the past, traditional banks' minimum balance restrictions prevented many people that were economically disadvantaged from using their services. Through overdrafts, PMJDY provides significant credit infrastructure in addition to basic account access. This feature enables account users to get credit when they need it, giving them a safety net for their finances in times of need or for investments in increasing their sources of income (Das & Ghosh, 2020). For people and families who are having trouble meeting their financial obligations, access to credit is extremely important as it can be transformative for the individual's financial stability, especially when there is no official credit access. Additionally, PMJDY includes life insurance protection, giving account holders and their families an additional level of financial security. This element focuses on the financial security of the populace, making sure that there is a safety net in place in the event of hardship.

The integration of PMJDY with pension plans is another important feature that aims to encourage account holders to make sound long-term financial plans. The initiative encourages people, especially those below the poverty line, to think about their financial future and engage in retirement planning by providing access to pension benefits through these accounts (Demirgüç-Kunt & Singer, 2017). The reactivation of inactive accounts through financial transfers is one unique technique used by the PMJDY policy. This strategy actively encourages the financially excluded population to interact with the official banking sector. PMJDY encourages people to use their bank accounts for their financial activities by transferring various benefits and subsidies directly into beneficiaries' bank accounts (Das & Ghosh, 2020). This promotes financial inclusion and increases the credit access the previously unbanked population had. PMJDY has concentrated on enhancing the usability and functionality of these accounts throughout the implementation of the policy. To optimize the program's impact, it has been crucial to streamline cash transfers and make sure that benefits efficiently reach participants' bank accounts (Das & Ghosh, 2020). This strategy not only makes it easier to deliver government support, but it also encourages people to explore the wider variety of financial services offered by the formal banking system.

Implementation and Progress of PMJDY

The implementation of a policy, aimed at increasing the access of credit for Indians below the poverty line, is an extremely complex and multifaceted process that requires thorough implementation and efforts. The implementation and progress of the PMJDY has been extensively discussed in the literature on financial inclusion and policy measures. Various research papers have analyzed the program's effectiveness in achieving its goals of comprehensive financial inclusion in India. The program's implementation involved collaboration between government agencies, banks, and financial institutions, leveraging an extensive network of banking correspondents and branch banking to reach underserved regions. As a result of these efforts, PMJDY has witnessed remarkable progress in terms of the number of bank accounts opened. Sarma (2008) and Dutta (2022) have contributed to the literature by examining the construction of financial inclusion index (FII) at the state and national level in India. They have used various indicators, such as banking penetration, availability, and usage, to gauge the level of financial inclusion. The FII approach has been instrumental in assessing the extent of financial inclusion across different regions of the country.

Furthermore, studies Lenka and Sharma (2017) have explored the impact of financial inclusion on economic growth in India. They found a positive relationship between financial inclusion and economic development, suggesting that efforts towards comprehensive financial inclusion, as facilitated by PMJDY, can contribute to the country's economic growth. To ensure the success of the program, challenges and areas of improvement have also been identified in the literature. Financial literacy and awareness have been acknowledged as crucial factors in maximizing the benefits of PMJDY. Efforts to promote financial education and encourage active usage of accounts have been recommended to sustain the progress of financial inclusion (Rajan, 2014).

Impact on Credit Accessibility

The impact of the Pradhan Mantri Jan Dhan Yojana (PMJDY) on credit accessibility has been a subject of significant interest and study in the literature on financial inclusion. Studies found that the program has helped Indians be financially included, creating a universal platform for financial services. The availability of zero-balance accounts and overdraft facilities has allowed account holders, particularly those who are below the poverty line, to access credit more easily and efficiently, enabling them to meet their urgent financial requirements. Furthermore, many have studied the progress of financial inclusion initiatives before and after the launch of PMJDY. The research showed that PMJDY has been successful in increasing credit accessibility in both rural and urban areas. The widespread implementation of the program has expanded the reach of formal banking services to previously excluded regions, thus facilitating credit availability for small-scale businesses and individuals stricken with poverty. It is worth noting that while PMJDY has made significant strides in enhancing credit accessibility, challenges remain. Research has pointed out that innovative approaches, capital, and technology are essential to overcome challenges in achieving financial inclusion. Efforts to increase financial literacy, especially among poverty facing populations, are crucial in ensuring that they understand the benefits of credit accessibility and make informed financial decisions.

MATERIALS AND METHODS

In this research paper, a range of regression analyses were employed to investigate the implications of the Pradhan Mantri Jan Dhan Yojana (PMJDY) program on access to credit for individuals below the poverty line in India since its commencement in 2014. The paper focuses on analyzing data at a national level while having an understanding of qualitative and quantitative factors impacting the success of the program at district levels. This was done by examining data from all States and Union Territories in India, furthered by an analysis in different states in India (Gujarat, Bihar, Kerala, and Jharkhand) to find district level data and trends. These were done to assess the real impact of the program on credit access and financial inclusion. These analyses were designed to elucidate the relationships between several key variables and evaluate the multifaceted dynamics influencing the outcomes of the program. The research delved into an analysis of average balance per beneficiary in relation to the Gross Domestic Product (GDP) per capita ($) of states in India. A regression analysis was conducted to discern whether states with higher economic prosperity, as indicated by GDP per capita, demonstrated higher average balances in PMJDY accounts. This insight was sought to gauge the program's potential to enhance credit accessibility in economically affluent regions. Another aspect investigated was the population in 2022 (in thousands) concerning the number of PMJDY accounts. The correlation between these variables was then further examined to comprehend how population dynamics influenced PMJDY adoption, thus offering insights into the program's impact across densely and sparsely populated areas of India.

At the district level in Gujarat, two regression analyses were carried out. Firstly, an analysis comparing the number of PMJDY accounts (in thousands) against the GDP per capita ($) of districts in Gujarat for the year 2022 was performed. This analysis aimed to uncover whether districts with diverse economic conditions exhibited varying adoption rates of PMJDY accounts, thereby providing insights into the influence of economic disparities on credit accessibility. Secondly, an analysis examining the number of PMJDY accounts (in thousands) against the population density of districts in Gujarat was conducted. The aim was to understand the relationship between population density and the adoption of PMJDY accounts, particularly in rural or less densely populated regions. This analysis contributed to a comprehensive understanding of credit accessibility across geographically diverse settings. Furthermore, the research explored the correlation between the number of PMJDY accounts (in thousands) and the overall population of districts in Gujarat. This analysis provided insights into whether the adoption of PMJDY accounts was proportional to district population sizes or if certain regions, regardless of population, exhibited higher PMJDY adoption rates.

In a broader context, the research assessed the relationship between average literacy rates (%) and the percentage of people who possessed a PMJDY account in states across India. This analysis aimed to uncover whether literacy rates influenced PMJDY adoption rates, underscoring the significance of financial literacy in promoting credit access.

In the context of Bihar, the research conducted linear regression analyses to investigate the program's impacts at the district level. The first analysis examined the relationship between the number of PMJDY accounts and the GDP per capita ($) of districts in Bihar for the year 2022. This analysis aimed to understand whether economic conditions within districts influenced PMJDY adoption, potentially affecting credit accessibility. Additionally, an analysis was conducted to assess the relationship between the number of PMJDY accounts and the balance in PMJDY accounts (in rupees crore) for districts in Bihar in 2022. This analysis aimed to uncover whether districts with higher account balances exhibited higher PMJDY adoption, reflecting increased credit utilization. Population dynamics within districts were further explored through a regression analysis that examined the relationship between population (in thousands) and the number of PMJDY accounts in districts in Bihar in 2022. This analysis aimed to understand how population size influenced the adoption of PMJDY accounts within districts, providing insights into credit accessibility for different demographic groups.

In Kerala, the research conducted district-level analyses through regression models. Firstly, an analysis explored the relationship between the number of PMJDY accounts (in thousands) and the population (in thousands) of districts in Kerala for the year 2018. This analysis aimed to reveal how PMJDY adoption varied across districts with differing population sizes, offering insights into credit access for diverse demographic groups. Furthermore, a regression analysis was performed to assess the correlation between GDP per capita ($) and the number of PMJDY accounts (in thousands) in districts in Kerala for the year 2018. This analysis allowed for an understanding of whether economic conditions influenced the adoption of PMJDY accounts within districts, which could provide valuable insights into credit accessibility in economically diverse regions.

Lastly, the research examined the relationship between the total number of PMJDY accounts and the population of districts in Jharkhand as of 2021. This analysis aimed to comprehend whether the program's adoption was proportional to district population sizes in Jharkhand, thus providing insights into credit accessibility for different demographic groups within the state.

The advantages of the methodology in this research paper include its use of regression analyses to quantitatively explore relationships between key variables, providing valuable insights into the impact of the PMJDY program on credit accessibility. However, there are limitations, as regression analyses establish correlations but not causation, potentially overlooking qualitative factors influencing financial inclusion. The reliance on available data may introduce accuracy and completeness issues, and the focus on specific states and districts may not fully capture the diversity of conditions in India. Therefore, while the methodology offers quantitative insights, a more holistic understanding could be achieved through a combination of quantitative and qualitative approaches, considering both statistical relationships and nuanced contextual factors.

RESULTS

Overall State/Union Territories Level Understanding

The analysis of the provided data set regarding the evolution of Pradhan Mantri Jan Dhan Yojana (PMJDY) accounts offers insights into the progress of financial inclusion (specifically credit access) in various states and union territories of India. The data spans four specific dates: December 20, 2017, July 31, 2018,

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November 13, 2019, and June 29, 2022, and provides a comprehensive view of the program's impact over time.

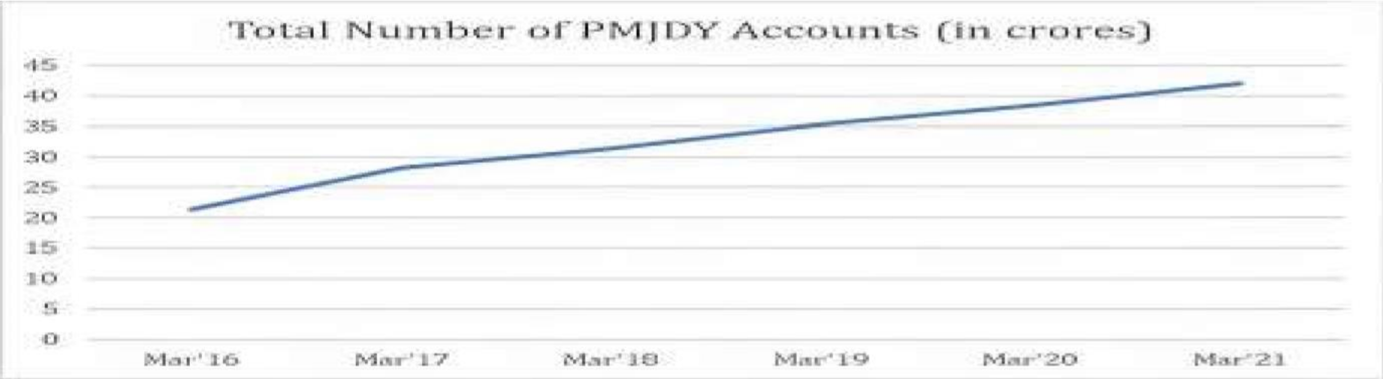

Figure 1. Total number of PMJDY Accounts

A noteworthy observation is the overall growth trend evident in the total number of PMJDY accounts across all States and union territories. The consistent increase in the number of accounts signifies the program's success in achieving its goal of providing banking services to previously underserved populations. This aligns with the overarching research question of investigating the impacts of the PMJDY program on access to credit for individuals below the poverty line. Furthermore, a closer examination of the data reveals disparities in the rates of growth among different regions. States such as Uttar Pradesh, Bihar, and Madhya Pradesh have consistently maintained high numbers of PMJDY accounts, indicating a sustained focus on financial inclusion efforts in these populous areas. The research question's emphasis on credit accessibility for individuals below the poverty line is particularly relevant in these states, given their significant demographic proportions.

Interestingly, certain states have exhibited accelerated growth in PMJDY account adoption between the years 2018 and 2022. States like Rajasthan, Odisha, and West Bengal have experienced substantial increases in the number of accounts during this period. This trend highlights the dynamic nature of financial inclusion efforts and suggests that regions may have implemented successful strategies to promote credit accessibility within their populations. Conversely, some states have shown consistent and steady growth in PMJDY accounts throughout the observed period. Maharashtra, Jharkhand, and Andhra Pradesh fall within this category, indicating that while growth has been steady, the impact on credit accessibility for the targeted population requires further analysis to understand why exactly growth has not been as increasing as other states. The data also raises qualitative considerations regarding the challenges and opportunities in different regions. States like Kerala and Delhi, which have relatively lower total numbers of PMJDY accounts compared to their population, may indicate areas where the program could be intensified to enhance credit accessibility for those below the poverty line.

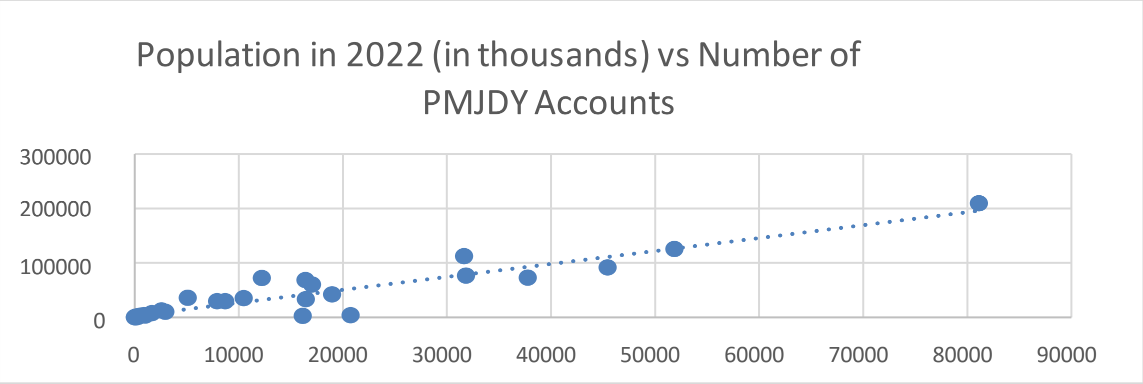

Figure 2. Population in 2022 vs Number of PMJDY Accounts

District Level Understanding of Gujarat

To understand the overall impact the program has had on people within different districts of Gujarat, several regression tools were used. Firstly, the method of comparing the number of PMJDY accounts and the GDP per capita of districts in Gujarat in 2022 was used (Figure 3). The analysis of the data regarding the number of Pradhan Mantri Jan Dhan Yojna (PMJDY) accounts and GDP per capita in districts of Gujarat in 2022 reveals several noteworthy patterns and implications with respect to the research question focused on the impact of the PMJDY program on access to credit for individuals below the poverty line. Firstly, there appears to be a positive correlation between the number of PMJDY accounts and GDP per capita across the districts studied. This suggests that as the number of PMJDY accounts increases within a district, there is a tendency for the GDP per capita of that district to rise as well. This observation implies a potential link between the PMJDY program and improved economic conditions in the regions where it has been more widely adopted. However, it is crucial to acknowledge the presence of regional disparities within the data. While some districts exhibit a high number of PMJDY accounts and relatively high GDP per capita figures, others have lower values for both variables. This divergence suggests that the impact of the PMJDY program may vary across different districts, indicating that local economic conditions and implementation effectiveness play a role in shaping the outcomes.

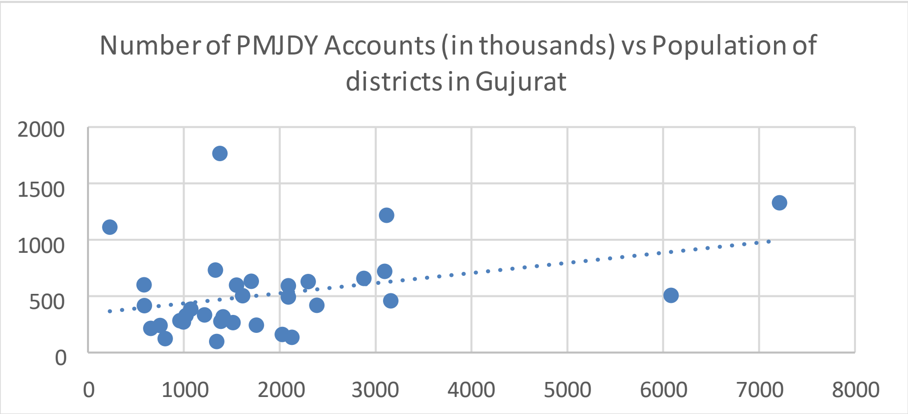

Figure 3. Number of PMJDY Accounts vs Population of districts in Gujurat

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Secondly, the analysis of data comparing the number of PMJDY accounts with the population density of districts in Gujarat (as of 2022) can demonstrate insights on the impact of the program, especially in rural or less populous regions This analysis can shed light on the complex interplay between population density, financial inclusion, and credit accessibility within the context of the PMJDY initiative. One notable observation is the significant variation in population density among the studied districts. Districts like Ahmedabad and Surat exhibit notably higher population densities, with values of 890 and 1397 people per square kilometer, respectively. In contrast, districts such as Kutch and Jamnagar have considerably lower population densities, with values of 46 and 153 people per square kilometer, respectively. This wide range in population density reflects the diverse demographic landscape of Gujarat, from densely populated urban centers to sparsely populated rural areas. This demographic characteristic can be observed all over India, with the large part of the population being concentrated in certain areas and regions. The data reveals that certain districts with relatively lower population densities, such as Kutch and Jamnagar, have a substantial number of PMJDY accounts, while districts with higher population densities, such as Ahmedabad and Surat, also exhibit a significant presence of PMJDY accounts. This suggests that the PMJDY program has made efforts to extend its reach both in densely populated urban areas and less densely populated rural regions. Furthermore, examining districts like Bhavnagar and Banaskantha, which have population densities of 288 and 290 people per square kilometer, respectively, reveals differing outcomes in terms of PMJDY accounts. Bhavnagar records a relatively high number of PMJDY accounts, whereas Banaskantha reports an even higher number. These variations indicate that factors beyond population density, such as local economic conditions, implementation effectiveness, and the demand for financial services, are likely influencing the adoption of PMJDY accounts.

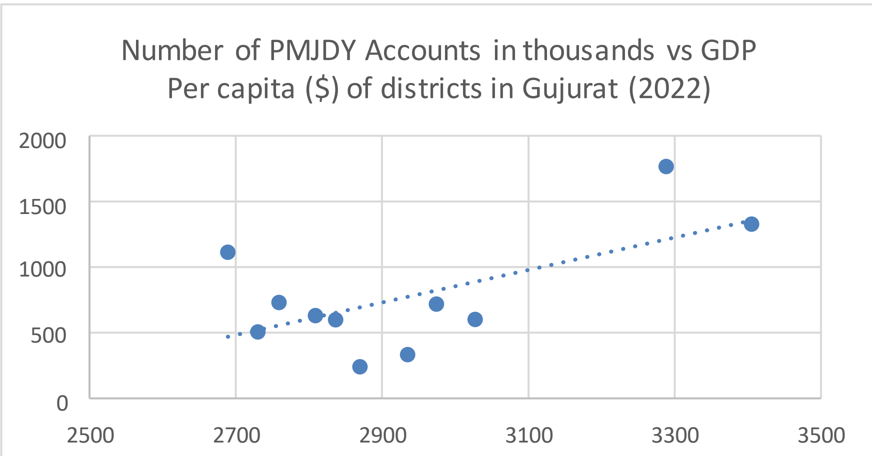

Figure 4. Number of PMJDY Accounts vs GDP Per capita of districts in Gujurat (2022)

Lastly, the analysis of data that compared the number of PMJDY accounts with the population of districts in Gujarat (as of 2022) can demonstrate the impacts of the program on the access to credit across different circumstances (Figure 4). One significant observation from the data is the substantial variation in the number of PMJDY accounts across districts, ranging from less than a hundred thousand to over a million accounts. This wide range underscores the program's extensive reach and adoption across districts of varying population sizes. It is evident that PMJDY has made inroads into both densely populated urban centers and sparsely populated rural regions, suggesting a concerted effort to provide access to formal banking services to a diverse population. Examining specific districts further reveals intriguing patterns. For instance, districts with relatively lower populations, such as Dahod and Panchmahal, exhibit a substantial presence of PMJDY accounts, surpassing one million in each case. This could indicate that PMJDY has effectively penetrated rural areas with sizable populations, contributing to improved credit access for individuals in these regions. Conversely, districts like Gandhinagar and Ahmedabad, characterized by larger populations, also report significant numbers of PMJDY accounts. These districts, serving as economic and administrative hubs, appear to benefit from the program's focus on extending financial inclusion to urban areas. The presence of a substantial number of PMJDY accounts in these districts may signify enhanced credit accessibility for urban residents below the poverty line. Furthermore, districts like Surat and Vadodara, known for their economic prosperity and relatively larger populations, record an impressive number of PMJDY accounts. This highlights the multifaceted nature of financial inclusion efforts, as these districts exhibit both urban affluence and a commitment to extending formal banking services to vulnerable populations.

The examination of percentage changes in PMJDY accounts across various districts in Gujarat reveals a combination of diverse factors that have contributed to the outcomes of the program. These factors encompass a wide spectrum, including socio-economic conditions, geographical locations, local awareness campaigns, economic opportunities, effective implementation strategies, cultural and social norms, challenges unique to specific districts, population density, gender distribution, and the influence of government initiatives

Vadodara, characterized by relatively stable socio-economic conditions and higher literacy rates, exhibited a decrease of -2.42% in the total percentage change of PMJDY accounts. The presence of an economically secure population might have reduced the need for new PMJDY accounts among residents. Conversely, Kachchh, a district marked by its remote and geographically isolated nature, witnessed a substantial positive change of 15.24%. The program likely filled a critical gap in banking services in this region, leading to higher adoption rates. This further indicates how the program is able to provide credit access to places where it is most required. In districts such as Junagadh (9.16% increase), the positive percentage change can be attributed to effective local awareness campaigns and robust outreach efforts. Community leaders and local authorities may have played a pivotal role in promoting PMJDY accounts, thereby driving higher adoption rates. Meanwhile, in areas like Porbandar (17.95% increase) and Surat (30.28% increase), the availability of economic opportunities and the significance of trade likely contributed to a surge in demand for formal banking services, thus boosting the growth of PMJDY accounts.

The successful implementation of the PMJDY program in districts like Jamnagar (9.56% increase) underscores the impact of efficient execution, including streamlined account opening processes and timely distribution of RuPay cards. A long concern for the program was its ability to effectively implement its services throughout India especially in low economically developed regions. Conversely, districts with unique challenges, like Devbhoomi Dwarka (82.73% increase), experienced remarkable growth in PMJDY accounts due to the district's limited banking infrastructure. Here, PMJDY accounts emerged as a primary avenue for accessing financial services. Cultural and social norms influenced the growth of

PMJDY accounts in districts like Mahisagar (401.08% increase), where the favorable acceptance of formal financial services contributed to the program's significant impact. Similarly, in Sabar Kantha (18.09% increase), a focus on women's empowerment enhanced adoption rates, reflecting the importance of aligning financial inclusion efforts with local dynamics. Government initiatives played a role in districts like Gandhinagar (26.61% increase), where proactive support and alignment with the PMJDY program led to higher adoption rates. These findings underscore the necessity of considering a comprehensive array of factors when assessing the outcomes of the PMJDY program. By considering socio-economic contexts, geographic diversity, local dynamics, and policy efforts, a holistic understanding emerges of the processes that have collectively shaped the observed changes in PMJDY account percentages across Gujarat's districts. Overall, Gujarat has experienced strong growth in terms of the number of people with access to financial instruments, which was observed through changes in the number of PMJDY accounts.

District Level Understanding of Kerala

To gain a more accurate understanding of the impact of the PMJDY program across India, district level analysis of Kerala through regression analysis has been conducted. The analysis of data pertaining to the number of Pradhan Mantri Jan Dhan Yojna (PMJDY) accounts against the population of districts in Kerala as of 2018 offers insights into the potential impacts of the PMJDY program on access to credit for individuals below the poverty line in India since its introduction in 2014 (Figure 5). One prominent observation from the data is the significant variation in the number of PMJDY accounts across different districts in Kerala. This variation spans a wide range, with some districts reporting a substantial number of accounts while others show comparatively lower figures. These variations underscore the diverse adoption and utilization of PMJDY accounts within the state, further supporting the idea that many local socioeconomic factors affect the policy's adoption, as demonstrated in districts of Gujarat. Districts such as Thrissur and Palakkad that have relatively higher populations showcase many PMJDY accounts. This demonstrates the program's efficiency and ability in reaching urban and semi-urban areas that potentially improves credit accessibility for residents below the poverty line in these areas. Districts like Idukki and Pathanamthitta which have relatively small populations (336739 and 589869 respectively, as of 2018) report a substantial number of PMJDY accounts.

However, some districts like Wayanad have relatively lower populations but report a lower relative number of PMJDY accounts. Wayanad is characterized by its hilly and geographically challenging terrain, which can pose logistical hurdles in terms of banking infrastructure establishment and accessibility. Moreover, it is known for a predominantly agrarian economy with a significant tribal population, potentially leading to lower awareness and demand for formal banking services. Additionally, the district's remoteness and economic disparities may result in reduced financial literacy and limited outreach efforts. Hence the focus should also be on educating the populace on financial literacy especially in rural and remote locations that would increase the awareness of formal banking institutions.

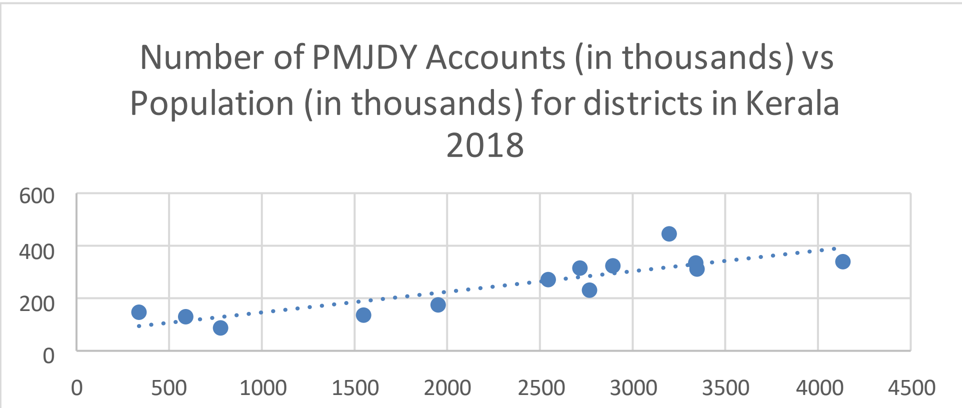

Figure 5. Number of PMJDY Accounts vs Population for districts in Kerala 2018

Through modeling the GDP per capita ($) with the PMJDY accounts it can be observed that both districts with high GDP per capita and districts with low GDP per capita report significant numbers of PMJDY accounts (Figure 6). Following the general trend seen across states in India, districts like Thrissur and Ernakulam, characterized by relatively higher GDP per capita figures, exhibit a substantial presence of PMJDY accounts. Conversely, districts with lower GDP per capita, such as Idukki and Pathanamthitta, also report significant numbers of PMJDY accounts. This shows that the utilization of PMJDY accounts is not only being used by rural and poor people. Due to the program's dynamic offerings, such as no minimum balance being required in the accounts, it is likely that people of all economic classes are using the program. Local strategies would have been implemented to increase the access to credit for different districts, as each district is poised with its own economic and social structure. Hence the implementation of the program, not only in Kerala, but in the entirety of India would have been a gradual process that required adaptive implementation strategies.

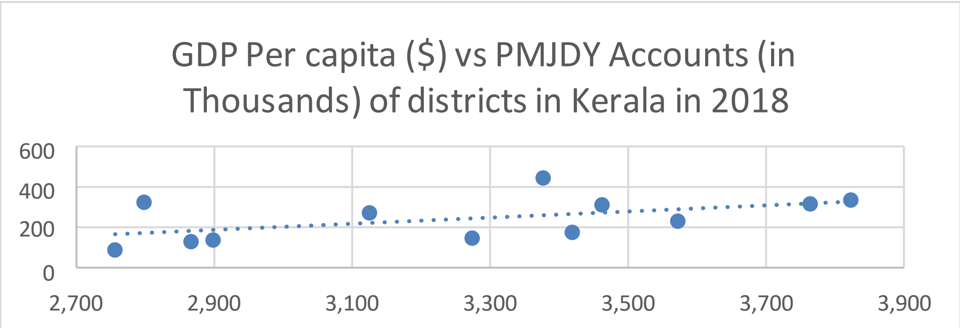

Figure 6. GDP Per capita vs PMJDY Accounts of districts in Kerala in 2018

District Level Understanding of Bihar

Through regression modeling of the number of PMJDY accounts and the population of districts in Bihar there is a positive correlation between the number of PMJDY accounts and the population of the districts (Figure 7). Naturally, districts with higher populations tend to have a higher number of PMJDY accounts. This is largely due to the ease with which people can open PMJDY accounts, as minimal documentation is required. Districts like Muzaffarpur and Gaya, characterized by vibrant economic sectors such as agriculture and trade, exhibit higher numbers of PMJDY accounts. This demonstrates that the financial needs of residents engaged in these sectors drive the demand for credit services, aligning with the program's objective to address economic requirements.

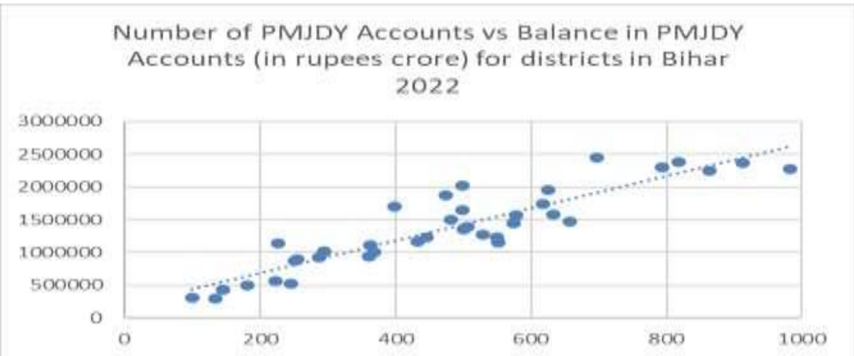

Figure 7. Number of PMJDY Accounts vs Balance of PMJDY Accounts for Districts in Bihar 2022

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Economic conditions and the nature of employment within each district also play a substantial role. Districts with a strong presence of agriculture, like Kishanganj and Araria, may have a higher percentage of PMJDY accounts because the program's credit services are particularly relevant to farmers (Figure 8). Conversely, districts with a more diverse economic landscape, such as Nalanda and Darbhanga, may need tailored strategies to cater to the varied financial needs of their residents. The presence of established banking infrastructure plays a pivotal role, as seen in districts like Vaishali and Patna. These districts, with well-established banking networks, exhibit higher PMJDY adoption rates. Residents in such areas are more accustomed to formal financial services, making PMJDY adoption more accessible. Effective collaboration between local authorities, financial institutions, and community organizations emerges as a catalyst for PMJDY adoption, as demonstrated by districts like Bhagalpur and Katihar. These regions showcase successful implementation strategies driven by partnerships that promote financial inclusion, resulting in a significant number of PMJDY accounts.

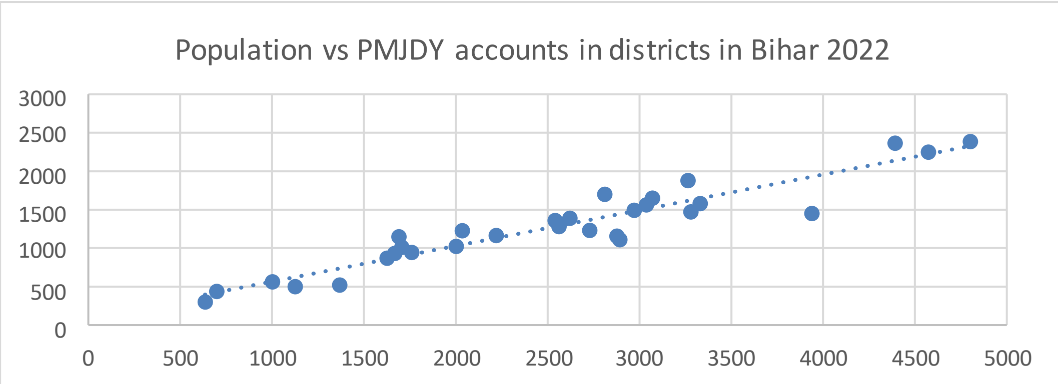

Figure 8. Population vs PMJDY accounts in districts in Bihar 2022

District Level Understanding of Jharkhand

Jharkhand continues to demonstrate the trend observed in other states on how economic disparities play an integral role in the wide scale adoption and creation of PMJDY accounts thus impacting credit access (Figure 9 and 10). Districts like East Singhbhum, Ranchi, and Bokaro, which have relatively higher GDP per capita figures, also report a larger number of PMJDY accounts. This correlation underscores the importance of economic well-being in driving participation in formal banking services. It suggests that people in economically stronger districts are more likely to engage with the banking system, possibly due to increased financial awareness and the need for diverse financial services. Conversely, districts with lower GDP per capita, such as Gumla and Chatra, tend to have fewer PMJDY accounts. This economic disparity reveals that the program faces challenges in areas with limited economic opportunities. Individuals in these regions may rely more on informal financial networks, such as moneylenders, due to the lack of access to formal banking services.

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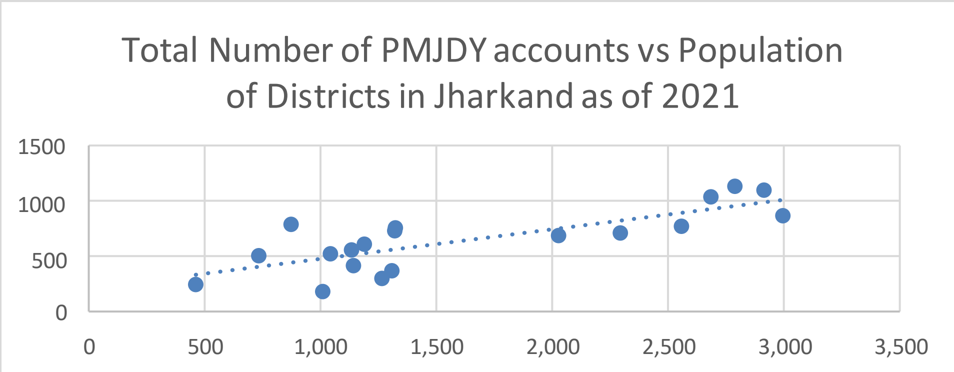

Figure 9. Total Number of PMJDY accounts vs Population of Districts in Jharkand as of 2021

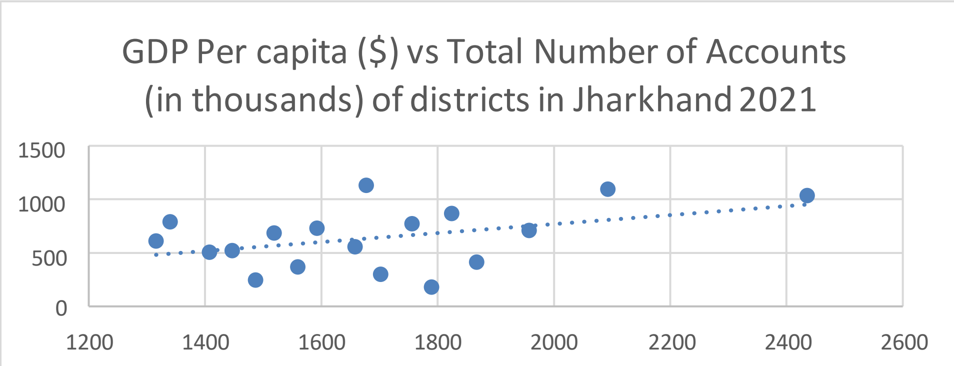

Figure 10. GDP Per capita vs Total Number of Accounts of districts in Jharkhand 2021

Population density also influences the distribution of PMJDY accounts. Densely populated districts like Ranchi and Dhanbad exhibit a higher number of accounts, reflecting the large impact this program has had in cities and densely populated regions. This is likely due to urban areas typically having better access to banking infrastructure and financial literacy resources, making it easier for residents to open PMJDY accounts. However, rural districts like Simdega and Khunti, characterized by lower population density, report lower numbers of PMJDY accounts. These areas face unique challenges related to financial inclusion, such as limited banking infrastructure and lower levels of financial literacy among the rural population. Government intervention and awareness campaigns are critical drivers of PMJDY participation. Districts where the government has actively promoted the program, such as West Singhbhum and Latehar, demonstrate higher participation rates. This highlights the importance of government-led initiatives in spreading financial awareness and encouraging people to open PMJDY accounts.

Proportion of Credit Access across Different Demographics

The provided data showcases the evolution of Pradhan Mantri Jan Dhan Yojana (PMJDY) accounts over a span of six years, highlighting both rural/semi-urban and urban/metro areas, as well as the participation of women in the program. From March 2016 to March 2021, there has been a consistent upward trend in the number of PMJDY accounts, indicating the program's progressive reach and impact. In March 2016, there were 131.7 million rural/semi-urban PMJDY accounts and 82.6 million urban/metro accounts. By March 2021, these numbers had grown significantly to 276.3 million rural/semi-urban accounts and 143.4 million urban/metro accounts. This pattern of growth suggests a widespread adoption of the PMJDY initiative across both rural and urban settings.

The data also reveals the increasing engagement of women in the program. In March 2016, there were 68.4 million rural/semi-urban PMJDY accounts held by women, and 42.1 million in urban/metro areas. By March 2021, these figures surged to 153.9 million and 78.6 million, respectively. This substantial increase in women's participation underscores the program's efforts to empower women economically and promote financial inclusion. Historically, across the globe, women have had limited access to financial instruments, especially credit. However, the PMJDY program's strong focus on increasing the number of women account holders is increasing their access to credit. Furthermore, the data reflects the success of the PMJDY program in expanding financial access and inclusion in India. The steady growth of PMJDY accounts in both rural and urban regions, coupled with the increasing involvement of women, suggests that the program has effectively contributed to enhancing financial literacy, access to banking services, and economic empowerment.

Operative/Inoperative Accounts Analysis

The provided data presents an analysis of the operational status of Pradhan Mantri Jan Dhan Yojana (PMJDY) accounts across various states and union territories in India as of January 20, 2021. The focus of this interpretation is on the percentage of operative accounts relative to the total PMJDY accounts, shedding light on the effectiveness of the program in ensuring active financial inclusion.

The data showcases significant variations in the percentage of operative PMJDY accounts across different regions. These variations are critical in understanding the program's impact on promoting financial inclusivity and credit accessibility. Notably, the overall percentage of operative accounts across all states and union territories is 86.13%, highlighting that a substantial majority of PMJDY accounts are actively utilized. States such as Tripura, Daman & Diu, Lakshadweep, and Mizoram stand out with high percentages of operative accounts, with 95.61%, 90.37%, 89.23%, and 87.63%, respectively. This suggests that these regions have been particularly successful in encouraging account holders to engage actively with their accounts, potentially indicating effective financial literacy and awareness programs. The findings align with the research question's focus on access to credit for individuals below the poverty line, as higher operative percentages may correlate with increased credit accessibility. A key strategy to maintain and persuade people was the introduction of zero-balance accounts, which allows individuals to open and maintain bank accounts without the need for an initial deposit. This innovation made formal banking services financially accessible to even those with limited resources, removing a significant barrier that had previously deterred many from joining the banking system. Conversely, the data reveals some regions where the percentage of operative accounts is relatively lower. For instance, Jammu & Kashmir exhibits a lower percentage of 60.47%, indicating potential challenges in driving active usage within the program. The lower operative percentage might impact credit accessibility for individuals below the poverty line in the state. Interestingly, states with relatively higher total PMJDY account numbers, such as Uttar Pradesh, Bihar, and Madhya Pradesh, have operative percentages around 83-89%. This suggests that while these states have succeeded in enrolling a significant number of individuals, there is still room for further engagement to enhance credit accessibility. The data also provides insights into regions where the operative percentage hovers around or below 80%. These include states like Goa, Punjab, Jharkhand, and Andaman & Nicobar Islands. These findings may indicate areas where additional efforts could be directed to boost account utilization and, subsequently, credit access for the targeted population. The analysis of operative percentages within the PMJDY program sheds light on the degree of active engagement and utilization of financial services across different states and union territories. The variations in operative percentages underscore the importance of tailored strategies to ensure effective credit accessibility and financial empowerment for individuals below the poverty line. The findings contribute to a deeper understanding of the program's impact on credit access and provide valuable insights for policymakers seeking to enhance financial inclusion efforts.

DISCUSSIONS

The analysis of the Pradhan Mantri Jan Dhan Yojana (PMJDY) program's impact on access to credit for individuals below the poverty line in India since 2014, as evidenced by the data from various states and union territories, provides critical insights into the progress of financial inclusion and credit accessibility. It is important to emphasize that the PMJDY program has made significant strides in extending banking services to previously underserved populations. This aligns with the overarching research question and underscores its relevance in addressing the financial needs of vulnerable communities.

One overarching trend observed in the data is the consistent increase in the number of PMJDY accounts over time across all states and union territories. This upward trajectory signifies the program's success in reaching its primary goal of providing banking services to those who were previously excluded. The sustained focus on financial inclusion efforts in densely populated states like Uttar Pradesh, Bihar, and Madhya Pradesh is particularly noteworthy. These states, with their large demographic proportions, are of critical importance when considering the impact of the PMJDY program on credit access for individuals below the poverty line. Moreover, the accelerated growth of PMJDY accounts in states like Rajasthan, Odisha, and West Bengal between 2018 and 2022 indicates the dynamic nature of financial inclusion efforts. The diversity in growth rates suggests that certain regions have implemented effective strategies to promote credit accessibility among their populations. Conversely, the steady growth observed in states like Maharashtra, Jharkhand, and Andhra Pradesh necessitates further examination to understand why growth rates have not been as substantial as in other areas.

An important aspect to consider is the role of economic conditions in shaping the impact of the PMJDY program. The data reveals that districts with higher GDP per capita tend to have more PMJDY accounts. This positive correlation suggests that as economic well-being improves, there is a greater likelihood of engaging with formal banking services, thereby enhancing credit accessibility. However, it is equally crucial to address the regional disparities within this correlation, as some districts with lower GDP per capita still exhibit high PMJDY adoption rates. For example, in Gujarat, districts like Bhavnagar and Banaskantha have lower population densities but exhibit differing outcomes in terms of PMJDY accounts, indicating that factors beyond economic conditions play a role in adoption. Population density also plays a significant role in the distribution of PMJDY accounts. Densely populated districts tend to have a higher number of accounts, reflecting the program's success in urban and semi-urban areas. However, rural districts have not been left behind, as evidenced by the substantial presence of PMJDY accounts in regions with lower population density. This showcases the program's commitment to extending formal banking services to diverse populations across geographic landscapes. For instance, in Jharkhand, districts like East Singhbhum, Ranchi, and Bokaro, characterized by relatively higher GDP per capita figures, also report a larger number of PMJDY accounts, highlighting the interplay between economic well-being and credit access.

The influence of government-led initiatives and awareness campaigns cannot be overstated. Districts where the Government actively promoted the program exhibit higher participation rates, emphasizing the importance of such initiatives in spreading financial awareness and encouraging account openings. These findings reinforce the significance of a comprehensive approach that combines government support, local outreach, and community engagement. For example, in Kerala, districts like Thrissur and Palakkad, with relatively higher populations, showcase a large number of PMJDY accounts, reflecting the program's efficiency in reaching urban and semi-urban areas, potentially improving credit accessibility for residents below the poverty line in these areas. Additionally, the analysis of data pertaining to the operative status of PMJDY accounts highlights both successes and challenges. While an overall percentage of 86.13% operative accounts is encouraging, regional variations exist. States like Tripura and Daman & Diu exhibit high percentages of operative accounts, indicating effective engagement. Conversely, states with relatively higher total PMJDY accounts, such as Uttar Pradesh and Bihar, have operative percentages around 83-89%, suggesting room for improvement in account utilization. The variations in operative percentages underscore the importance of tailored strategies to ensure effective credit accessibility for individuals below the poverty line.

CONCLUSIONS

The analysis of the Pradhan Mantri Jan Dhan Yojana (PMJDY) program's evolution and impact offers a comprehensive understanding of its contribution to credit accessibility for individuals below the poverty line in India. The research question, focused on investigating the program's influence on credit access for people below the poverty line, has been addressed through an examination of multiple data sets, district-level factors, and demographic variations. The findings underscore the success of the PMJDY program in advancing financial inclusion and empowerment. The upward trend in total PMJDY accounts across states and union territories reflects the program's effectiveness in reaching underserved populations and providing them with formal banking services.

Moving forward, it is crucial to recognize that while the PMJDY program has achieved significant milestones, there is room for further exploration and refinement. Future research endeavors should delve deeper into the nature of credit access facilitated by PMJDY accounts, including the types and volumes of credit extended to beneficiaries. Additionally, ongoing efforts to refine and adapt the program based on regional variations and evolving macroeconomic dynamics will be instrumental in sustaining and augmenting the positive outcomes observed. In conclusion, the PMJDY program has emerged as a transformative initiative, fostering financial inclusion, economic empowerment, and gender equity. The comprehensive analysis presented in this paper contributes valuable insights to policymakers, researchers, and stakeholders, offering a foundation for continued efforts to enhance credit accessibility and uplift the socio-economic well-being of marginalized populations across India.

REFERENCES

Armendariz, B., & Morduch, J. (2010). The economics of microfinance. *MIT Press*.

Land, labor, and rural poverty: Essays in development economics. *Oxford University Press*.

Bhushan, P., & Medury, Y. (2013). Financial Literacy and its Determinants. *International Journal of Engineering, Business and Enterprise, 4*(2), 155-160.

Banerjee, A. V., & Duflo, E. (2019). *Good economics for hard times*. PublicAffairs.

Das, D., & Ghosh, S. (2020). Financial inclusion in India through PMJDY: An overview. *International Journal of Research in Commerce, Economics and Management, 10*(2), 41-50.

Original Article

Demirgüç-Kunt, A., & Singer, D. (2017). Financial inclusion and inclusive growth: A review of recent empirical evidence.

Dutta, P. (2022). Financial Inclusion in India: An Intertemporal Study. In Persistent and Emerging Challenges to Development: Insights for Policy-Making in India (pp. 411-432). *Singapore: Springer Nature Singapore.*

Lenka, S. K., & Sharma, R. (2017). DOES FINANCIAL INCLUSION SPUR ECONOMIC GROWTH IN INDIA? *The Journal of Developing Areas*, *51*(3), 215–228.

Pingali, P. (2012). Green revolution: Impacts, limits, and the path ahead. *Proceedings of the National Academy of Sciences, 109*(31), 12302-12308.

Rajan, R. (2014). Governor's address: Financial inclusion in India. Reserve Bank of India.

Sarma, M. (2008). Index of financial inclusion. *Economic and Political Weekly, 43*(18), 47-54.

Zulfiqar, K., Chaudhary, M. A., & Aslam, A. (2016). Financial inclusion and its implications for inclusive growth in Pakistan. *Pakistan Economic and Social Review*, *54*(2), 297-325.