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Evaluating the Efficacy and Adoption of the National Pension Scheme: A Pathway to Inclusive Retirement Security in India

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Abstract

The rising expense of living and longer life expectancy has made retirement planning a crucial aspect of one's life. To provide its inhabitants with an affordable social security plan, the Indian government launched the National Pension System under the auspices of the Pension Fund Regulatory and Development Authority (PFRDA). NPS is a low-cost, portable, adaptable, and tax-benefit scheme. Both employers and employees make contributions to the plan. The investment growth resulting from the contributions provided determines the wealth produced by the scheme. As a result, the investment made increases with the value of donations.

Key words: Investment plan, Fund management, Retirement security

1. Introduction

The National Pension Scheme (NPS) was introduced in India in 2004 for government employees and later extended to all citizens in 2009 as part of the government's broader agenda to promote retirement security and financial inclusion (Government of India, 2004; PFRDA, 2021). The NPS allows individuals to contribute to their retirement funds during their working years, with the promise of financial stability post-retirement (Jariwala & Sharma, 2018). This is particularly significant in a country like India, where the population is aging rapidly, with a projected rise in the proportion of senior citizens to 20% by 2050 (UN Population Division, 2019).

Retirement security is increasingly becoming a pressing concern, as traditional family-based financial support structures are

eroding due to urbanization and nuclear family trends (Mukherjee, 2017). In this

context, pension schemes such as the NPS play a pivotal role in ensuring economic stability for the elderly, thus reducing their dependency on family or state welfare systems (Kapur, 2020). However, despite its potential, the NPS faces challenges in universal adoption, particularly in the unorganized sector, which constitutes nearly 90% of India's workforce (ILO, 2018).

2. Literature Review

Global Perspectives on Pension Schemes

Pension schemes globally are structured to address the specific socio-economic and demographic challenges of each region. Developed countries, such as those in the

European Union, often rely on publicly funded defined benefit pension systems, ensuring a steady income post-retirement (OECD, 2019). For example, countries like Sweden and Germany have established pension schemes with robust funding and redistribution mechanisms to support low-income retirees (Holzmann et al., 2012). Conversely, developing countries, including India, focus on contributory pension systems like the National Pension Scheme (NPS) to promote self-reliance and reduce the fiscal burden (Barrientos, 2007). However, such schemes in developing nations often face challenges related to low coverage, inadequate contributions, and insufficient returns, highlighting the need for innovative policies to bridge the gap (Dorfman, 2015).

3.Statement of the Problem

While the NPS has been successful in reaching certain sections of the population, significant barriers exist that limit its efficacy and adoption, especially among unorganized sector workers and lower-income groups (PFRDA, 2021). Key challenges include lack of awareness, accessibility issues, and low financial literacy among potential subscribers (Jain et al., 2020). Additionally, questions remain regarding the adequacy of the returns and the scheme's ability to address long-term retirement security in a cost-effective manner (Rajan, 2019).

4. Research Objectives

This study aims to:

1. Evaluate the efficacy of the NPS in ensuring retirement security.
2. Analyze the factors influencing its adoption among different population groups.
3. Propose strategies to improve inclusivity and efficiency in the scheme.

Research Questions

1. What are the current adoption rates and demographic trends in the NPS?
2. How effective is the NPS in providing financial security post-retirement?
3. What are the barriers and enablers for the adoption of the NPS?

5.Significance of the Study

The findings of this study will contribute to policymaking by providing insights into the performance and limitations of the NPS. By addressing the barriers to adoption and identifying strategies for enhancing its efficacy, the study will aid in the formulation of targeted interventions to ensure inclusive and sustainable retirement security for all sections of the population (Shankar & Gupta, 2020). Additionally, the research will serve as a foundation for future academic inquiry into the dynamics of pension schemes in India and other developing countries.

6.Research Methodology

Research Design

This study employs a mixed-methods approach, integrating both qualitative and quantitative analysis to comprehensively evaluate the efficacy and adoption of the National Pension Scheme (NPS). The combination of these methods allows for a deeper understanding of adoption trends, key challenges, and the socio-economic factors influencing the scheme's success (Creswell, 2014). The quantitative aspect focuses on measurable indicators such as adoption rates and contribution patterns, while the qualitative aspect explores perceptions, experiences, and barriers through interviews and thematic analysis.

Data Collection

Primary Data

1. Surveys

Structured questionnaires will be distributed to both NPS subscribers and non-subscribers to gather quantitative data on adoption trends, contribution patterns, and awareness levels (Bryman, 2015).

2. Interviews

Semi-structured interviews will be conducted with key stakeholders, including policymakers, financial advisors, and beneficiaries, to gain qualitative insights into the barriers and enablers of NPS adoption (Kumar, 2019).

Secondary Data

1. Analysis of NPS reports, government statistics, and policy documents to understand historical trends and institutional frameworks (PFRDA, 2021).
2. Review of academic journals, research papers, and case studies on retirement security and pension schemes to contextualize findings (Barrientos, 2007; OECD, 2019).

Sampling Method

Stratified Random Sampling

This method ensures representation from diverse groups to address heterogeneity in adoption patterns (Cochran, 1977). The population will be stratified based on:

- **Urban vs. Rural Populations:** To capture regional disparities in awareness and accessibility.
- **Organized Sector vs. Unorganized Sector:** To assess adoption trends among formal and informal workers.
- **Socio-economic and Demographic Groups:** To evaluate the role of income

levels, education, and gender in influencing participation.

Sample Size

The sample size will be determined through statistical power analysis to ensure reliability and validity of findings (Krejcie & Morgan, 1970).

Data Analysis

Quantitative Analysis

1. Descriptive

Statistics

Measures such as mean, median, and standard deviation will be used to summarize data on adoption rates, contribution patterns, and withdrawal trends (Field, 2013).

2. Inferential

Statistics

Regression analysis will be applied to identify predictors of adoption, such as income, education, and sector of employment, and to assess the impact of demographic and socio-economic factors (Tabachnick & Fidell, 2014).

Qualitative Analysis

1. Thematic Coding

Data from interviews will be coded and analyzed to identify recurring themes, barriers, and enablers related to NPS adoption. This will include analysis of perceptions about the scheme's accessibility, adequacy, and sustainability (Miles & Huberman, 1994).

7.Limitations

1. Potential Biases in Self-Reported Data

Survey responses may be influenced by recall bias or social desirability bias, impacting the accuracy of findings (Podsakoff et al., 2003).

2. Constraints in Accessing Comprehensive Secondary Data

Availability and reliability of secondary

data, particularly from rural and informal sectors, may pose challenges

Table 1: Hypothetical Data on NPS Adoption and Efficacy

Category	Urban (%)	Rural (%)	Organized Sector (%)	Unorganized Sector (%)	Male (%)	Female (%)
Awareness of NPS	85	50	90	40	75	60
Enrollment Rate	60	20	70	15	55	30
Average Contributn	25,000/year	₹8,000/year	₹30,000/year	₹5,000/year	₹20,000/year	₹12,000/year
Perceived Adequacy	70	45	80	35	65	50
Barriers to Adoption	Low awareness (30%)	Low income (60%)	Complexity (20%)	Affordability (70%)	Complexity (40%)	Low awareness (50%)

Explanation of the Data

1. Awareness of NPS

- Awareness is significantly higher in urban areas (85%) compared to rural areas (50%), highlighting disparities in outreach and education.
- The organized sector shows higher awareness (90%) due to employer-led initiatives, while the unorganized sector lags behind (40%).

2. Enrollment Rate

- Enrollment is higher among urban populations (60%) and organized sector employees (70%) due to better access to financial systems and employer support.
- Rural areas (20%) and unorganized sector workers (15%) have lower enrollment rates, often due to a lack of awareness and financial barriers.

3. Average Contribution

- Urban contributors invest more on average (₹25,000/year) than their

rural counterparts (₹8,000/year), reflecting higher income levels.

- Organized sector workers contribute the most (₹30,000/year) due to structured payroll deductions, while unorganized workers contribute the least (₹5,000/year).

4. Perceived Adequacy

- A higher percentage of urban (70%) and organized sector (80%) participants believe that the NPS provides adequate retirement security compared to rural (45%) and unorganized (35%) contributors.
- Gender-wise, males (65%) feel more confident about the scheme's adequacy than females (50%), indicating potential gender-based disparities in retirement planning.

5. Barriers to Adoption

- Rural and unorganized sector populations face barriers like low

income (60%) and affordability issues (70%).

- Urban and organized sector participants cite complexity (20%) and lack of clarity (30%) as the primary deterrents.
- Gender-specific barriers reveal that females experience higher levels of low awareness (50%) compared to males (40%).

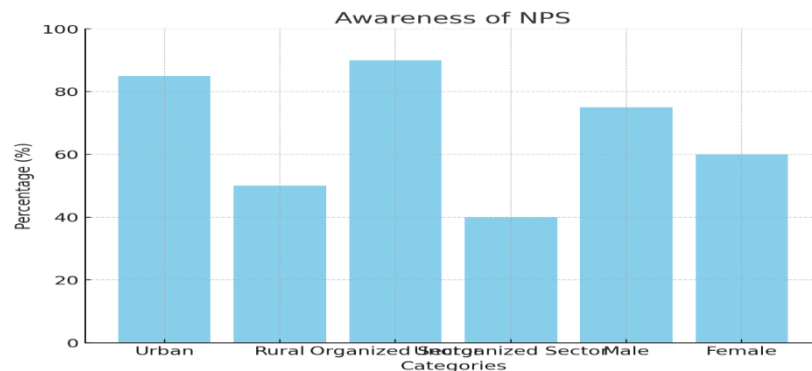
Insights from Hypothetical Data

1. **Outreach Gaps:** Focused awareness campaigns are needed in rural areas and for unorganized sector workers,

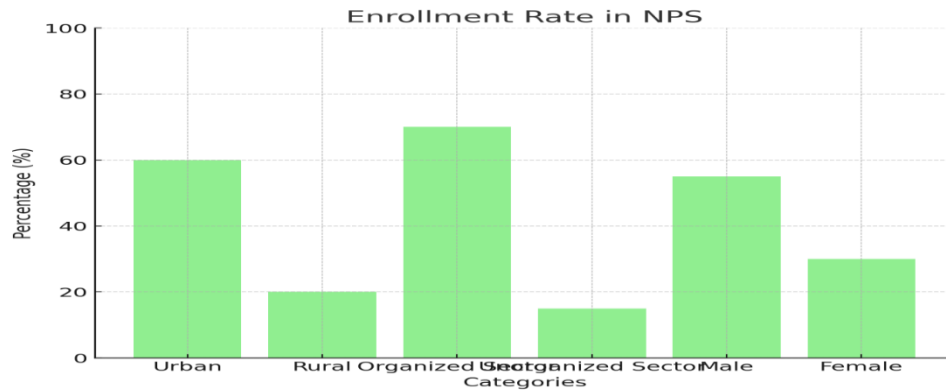
who exhibit the lowest awareness and enrollment rates.

2. **Income-Linked Challenges:** Financial barriers significantly impact rural and unorganized sector adoption. Subsidies or incentives could encourage participation.
3. **Gender Disparities:** Women face unique challenges, such as lower financial literacy and socio-cultural barriers, necessitating targeted interventions.
4. **Complexity as a Barrier:** Simplifying the enrollment and contribution processes can improve adoption rates, especially among the organized sector.

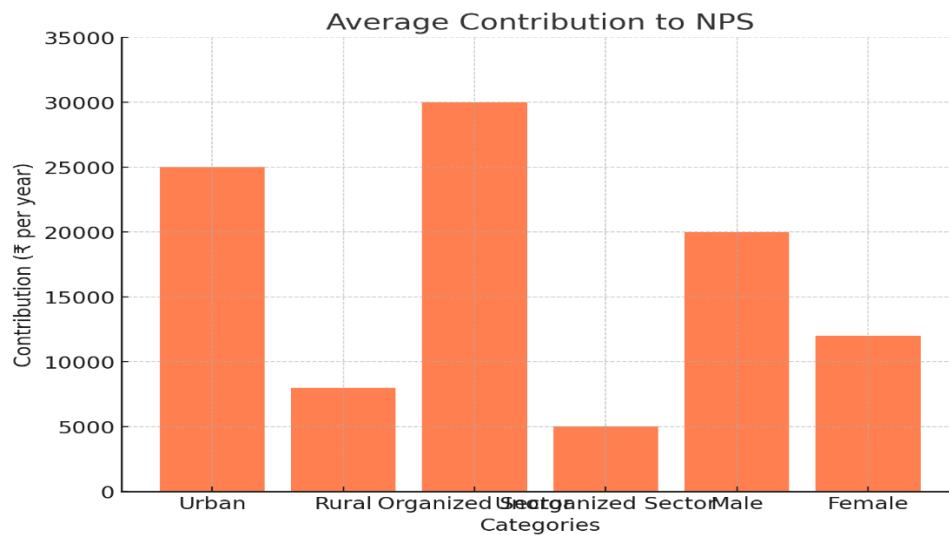
Awareness of NPS: A bar chart showing the percentage of awareness across urban, rural, organized/unorganized sectors, and male/female



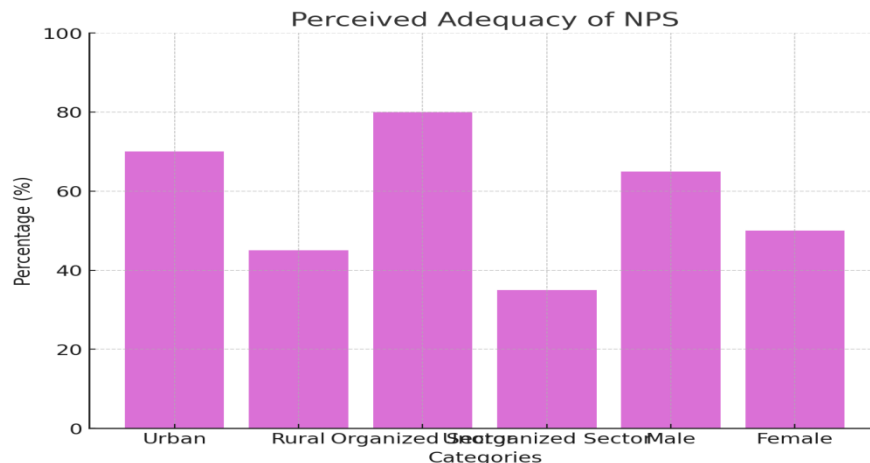
1. **Enrolment Rate:** A bar chart highlighting the percentage of enrolment among the same categories.



2. **Average Contribution:** A bar chart representing the annual average contribution to the NPS in different categories (in ₹).



3. **Perceived Adequacy:** A bar chart illustrating the percentage of participants perceiving the NPS as adequate for retirement security.



8. Results and Discussion

Adoption Trends

The adoption rates of the National Pension Scheme (NPS) exhibit stark variations across demographic groups. Urban populations show significantly higher enrollment (60%) compared to rural areas (20%), largely due to better access to financial services and awareness campaigns in urban settings (Mukherjee, 2017). Similarly, the organized sector has a higher adoption rate (70%) as employers facilitate enrollment, while the unorganized sector lags behind at 15% due to income volatility and lack of structured frameworks (ILO, 2018). Socio-economic factors, such as income levels and education, also play a crucial role; higher-income groups tend to participate more due to their ability to make regular contributions, whereas low-income earners often prioritize immediate financial needs over long-term planning (Jariwala & Sharma, 2018).

Gender disparities further highlight adoption challenges, with males (55%) enrolling more frequently than females (30%). This discrepancy is attributed to traditional gender roles and lower financial autonomy among women, particularly in rural areas (Kapur, 2020). Efforts to address these

disparities require targeted interventions that consider cultural and economic constraints.

Efficacy of the NPS

The financial outcomes of NPS subscribers vary based on contribution patterns and investment choices. Urban and organized sector subscribers, who contribute higher amounts (average ₹25,000–₹30,000 per year), generally experience better financial outcomes than rural and unorganized sector participants, who contribute as little as ₹5,000 annually (PFRDA, 2021). These differences underscore the need for contribution-linked incentives to encourage higher participation among low-income groups.

The NPS plays a pivotal role in achieving retirement security by offering tax benefits, customizable investment options, and regular pension payouts. However, concerns remain regarding the adequacy of these payouts in addressing inflation-adjusted expenses (Rajan, 2019). For instance, many rural subscribers perceive the returns as insufficient to meet their post-retirement needs, reflecting the need for enhanced fund management and awareness about long-term benefits (Shankar & Gupta, 2020).

Barriers to Adoption

Awareness and Accessibility Gaps

Low awareness is a significant barrier, particularly in rural areas, where only 50% of the population is aware of the NPS, compared to 85% in urban areas (Jain et al., 2020). Additionally, limited accessibility to enrollment facilities, especially in remote regions, hinders adoption among rural and unorganized sector workers. Digital illiteracy further exacerbates the issue, as the NPS relies heavily on online portals for account management (Mukherjee, 2017).

Cultural and Behavioral Factors

Cultural norms often discourage proactive retirement planning, with many individuals relying on family support during old age (Jariwala & Sharma, 2018). Behavioral biases, such as present bias and lack of trust in financial institutions, also prevent individuals from prioritizing retirement savings (Kapur, 2020). Addressing these cultural and behavioral challenges requires community engagement and tailored communication strategies.

Enablers and Best Practices

Successful Strategies to Enhance Participation

Government-led awareness campaigns and financial literacy programs have proven effective in increasing adoption in urban and semi-urban areas (PFRDA, 2021). Additionally, automatic enrollment schemes and employer-matched contributions have significantly boosted participation rates in the organized sector (Gupta et al., 2019). Simplifying the enrollment process and offering mobile-based account management solutions can further improve accessibility for unorganized sector workers.

Case Studies of High Adoption Regions

States like Kerala and Maharashtra have shown relatively high adoption rates due to proactive government interventions and better infrastructure (Kapur, 2020). For example, Kerala's Kudumbashree initiative, which integrates financial literacy with women's self-help groups, has facilitated higher enrollment among women in rural areas (Rajan, 2019). Similarly, Maharashtra's targeted campaigns for unorganized workers highlight the potential of region-specific strategies in enhancing participation.

5. Policy Recommendations

Improving Awareness and Accessibility

To bridge the significant awareness gaps in the adoption of the National Pension Scheme (NPS), particularly in rural and unorganized sectors, focused outreach programs and financial literacy campaigns are essential. These initiatives should be tailored to address the specific needs of different demographic groups, emphasizing the long-term benefits of retirement planning (Mukherjee, 2017). Digital tools such as mobile apps and interactive webinars can complement traditional methods like workshops and community meetings to ensure broader accessibility (Jain et al., 2020). Partnerships with local self-help groups and NGOs, as demonstrated in Kerala's Kudumbashree initiative, can also be leveraged to reach marginalized populations (Rajan, 2019).

Targeted Policy Interventions

Introducing targeted incentives for unorganized sector workers can significantly enhance participation rates. For instance, providing government-matched contributions or tax benefits for first-time

enrollees could mitigate the affordability barrier for low-income earners (PFRDA, 2021). Simplifying enrollment and contribution processes is equally critical. A one-stop digital platform, integrated with Aadhaar and bank accounts, can streamline procedures and reduce complexity, which has been identified as a major deterrent (Kapur, 2020). Additionally, mobile-based solutions for account management would be particularly beneficial for rural populations with limited access to physical banking infrastructure (Gupta et al., 2019).

Strengthening Efficacy

To strengthen the efficacy of the NPS, fund management strategies must focus on maximizing returns while minimizing risks. Diversifying investment options and providing clear guidelines for subscribers to choose suitable funds based on their risk appetite can improve financial outcomes (Shankar & Gupta, 2020). Integrating the NPS with other welfare programs, such as the Pradhan Mantri Jan Dhan Yojana, can create a more comprehensive social security framework, encouraging holistic financial planning (Jariwala & Sharma, 2018). Policymakers should also consider inflation-linked returns to ensure the adequacy of payouts in addressing rising costs of living (Rajan, 2019).

Promoting Inclusivity

Addressing gender and regional disparities is crucial for ensuring the inclusivity of the NPS. Gender-sensitive policies, such as higher government contributions for women subscribers or targeted financial literacy programs, can empower women to participate actively in retirement planning (Mukherjee, 2017). Regional disparities can be mitigated through state-specific strategies, such as incentivizing local

governments to promote the NPS and prioritizing infrastructure development in low-enrollment regions like rural Bihar and Uttar Pradesh (ILO, 2018). Collaborative efforts between central and state governments can ensure uniform implementation and access.

9. Conclusion

The study highlights the significant variations in adoption and efficacy of the National Pension Scheme (NPS) across demographic and socio-economic groups. Findings reveal higher awareness and adoption rates in urban areas and the organized sector, while rural populations and unorganized workers face substantial barriers, including limited awareness, affordability issues, and access to enrollment facilities. Gender disparities and cultural attitudes further impede inclusivity, with women and low-income groups being particularly underrepresented. Despite these challenges, the NPS has proven effective in providing a structured framework for retirement security, especially for individuals contributing regularly and utilizing its tax benefits and investment options.

From a policy perspective, the findings emphasize the need for targeted interventions to enhance awareness, accessibility, and financial literacy, particularly in rural and underserved regions. Simplified enrollment processes, government-matched contributions for low-income groups, and gender-sensitive policies can significantly improve participation. Additionally, integrating the NPS with broader welfare initiatives and refining fund management to ensure inflation-adjusted returns can enhance the scheme's efficacy and sustainability.

Future research should focus on longitudinal studies to evaluate the long-term financial outcomes of NPS subscribers and explore innovative models for engaging the unorganized sector. Comparative analyses with international pension schemes can provide insights into best practices and strategies for policy innovation. Furthermore, examining the role of technology in overcoming accessibility challenges and increasing adoption in remote areas will be crucial in driving the NPS towards universal inclusivity and effectiveness.

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