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Financial Inclusion and Retirement Planning: A Scenario Analysis of the Feasibility of Atal Pension Yojana

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ABSTRACT

Background: Financial inclusion, crucial for economic development, has gained global attention, particularly in emerging economies like India where initiatives to improve access to financial services are vital. **Objective:** This study aims to assess the feasibility and potential impact of the Atal Pension Yojana (APY) on retirement planning within India's unorganised sector through scenario analysis.

Methodology: Utilising secondary data, the study analyses the present and future values of contributions and pension benefits under various scenarios, focusing on different starting ages and pension amounts.

Findings: The analysis suggests that, at higher interest rates, the present value of pension benefits from APY may fall short of contributions, indicating potential shortcomings in fulfilling retirement needs. However, younger subscribers could benefit under certain conditions, emphasising the importance of early enrolment.

Implications: The research highlights concerns regarding the effectiveness of APY in addressing retirement needs, suggesting the need for additional government support to enhance the scheme's attractiveness and financial feasibility.

Originality: This study offers a multidimensional exploration of financial inclusion and retirement planning within the framework of APY, contributing to the literature on this topic, especially in economies with informal labour markets and limited social security mechanisms.

Keywords: Retirement Planning, Financial Inclusion, Social Security, Pension Scheme, Atal Pension Yojana.

INTRODUCTION

Financial inclusion, a fundamental pillar of economic development, has garnered increasing attention globally as policymakers and practitioners recognise its pivotal role in fostering inclusive growth and poverty alleviation (Demirgüç-Kunt et al., 2018). Central to this discourse is the imperative of ensuring access to formal and affordable financial services and products for all segments of society, particularly those historically marginalised or excluded from the organised financial system (Omar & Inaba, 2020). In the context of emerging economies like India, where a significant proportion of the population remains underserved by traditional banking infrastructure, initiatives aimed at enhancing financial inclusion assume paramount significance (Panda et al., 2023; Pushp et al., 2023).

Within this landscape, retirement planning stands out as a pivotal aspect, especially in developing economies like India where social security systems are limited and the unorganised sector is widespread

(Sampson et al., 2024). The Atal Pension Yojana (APY), launched by the Government of India in May 2015, is a significant initiative designed to address the retirement needs of the unorganised sector. Named after the former Prime Minister Atal Bihari Vajpayee, this initiative seeks to provide a sustainable pension solution for the unorganised sector, promoting financial security and social protection among a demographic historically neglected by formal pension schemes. However, the effectiveness and feasibility of the APY warrant closer examination, particularly in regions where significant population is engaged in unorganised sectors or low-income professions (Pushpa & Viswanath, 2022).

Amidst the backdrop of evolving demographic dynamics and socioeconomic challenges, understanding the efficacy and feasibility of the APY becomes imperative (Rahman & Pingali, 2024). Understanding the dynamics of financial inclusion within this context is essential for policymakers, financial institutions, and stakeholders alike. This research endeavours to delve into the intricacies of financial inclusion and retirement planning within the Indian context, focusing on scenario analysis to assess the feasibility and potential impact of the APY scheme on the target demographic. Thus, the specific objective of this study is to simulate different scenarios to evaluate the effectiveness and feasibility of APY in addressing the retirement needs of the unorganised sector in the Indian context.

The significance of this study lies in its multidimensional exploration of financial inclusion and retirement planning, contextualised within the framework of the Atal Pension Yojana. Furthermore, it seeks to contribute to the existing literature on financial inclusion and retirement planning, particularly within developing economies grappling with the complexities of informal labour markets and inadequate social security mechanisms.

PROGRESS AND TREND OF APY

The Government of India launched the Atal Pension Yojana (APY) in May 2015 as a government-backed pension scheme with the primary aim of providing financial security to Indian citizens aged between 18 and 40 years, particularly those engaged in low-income professions or unorganised sectors, who often face exclusion from traditional pension schemes due to lack of formal employment contracts or access to employer-sponsored retirement plans. Participants in the scheme is expected to pay the premium on a monthly, quarterly, or half-yearly basis from the time of enrolment till the attainment of 60 years of age. The central government will make a co-contribution of 50% of the subscriber's contribution or ₹1000 per year, whichever is less, for up to 5 years (from 2015-16 to 2019-20) for eligible subscribers who enrolled in the NPS before December 31, 2015, and are non-income-tax payers. This premium entitles them to a fixed pension amount ranging from Rs.1000 to Rs.5000 per month, based on factors such as their age at enrolment and the total sum invested over time. This flexible structure allows for customisation according to individual circumstances, enabling even those with modest incomes to aspire to a secure retirement.

The APY represents a strategic improvement over its predecessor, the Svawalamban Yojana, which operated on similar principles but lacked the desired reach and impact. Integration with the National Pension System (NPS) ensures efficient management and oversight, with the Pension Fund Regulatory and Development Authority (PFRDA) serving as the regulatory body responsible for implementation. The following table outlines the milestones achieved by APY:

[Insert Table 1 Here]

As indicated in the above table, the cumulative enrolment figures reached approximately 53.34 million by the fiscal year 2023-24, encompassing 29.1 million male subscribers and 24.23 million female subscribers nationwide. Since the initiation of the scheme, the total enrolment exhibited an average Compound Annual

Growth Rate (CAGR) of 154.9%, signalling positive strides in the scheme's execution. The steady rise in enrolment year after year serves as a beneficial mechanism for fostering a culture of savings among the Indian populace and indirectly contributes to the nation's economic advancement (Singh & Singh, 2022).

METHODOLOGY

This research utilises secondary data and focuses on analysing the present value of contributions, the future value of monthly contributions, and the present value of pension benefits using various starting ages (18, 25, 30, 35, and 40 years) and monthly pension amounts (Rs.1000, Rs.3000, and Rs.5000) post to the subscriber attending 60 years of age. The objective is to compare the present value of pension benefits against the present value of contributions to assess the scheme's feasibility for subscribers. This study operates under several assumptions:

- This study adheres to the principle of Ceteris Paribus.
- This study undertakes a uni-dimensional analysis with inflation as a deferred annuity.
- As the discounting and compounding rates fluctuate over time, 4 rates (6.5%, 7%, 7.5%, and 8%) have been considered for calculations.
- This study excludes government co-contribution.
- It is assumed that the subscriber or spouse will receive the monthly pension benefit for 20 years starting from the age of 60.

ANALYSIS AND DISCUSSION

[Insert Table 2 Here]

The table presented above outlines the present value (PV) of pension benefits, contributions, and the differences between them for a fixed pension amount of Rs 1000. It indicates that, under interest rates of 7.5% and 8%, all differences between the PV of pension benefits and contributions are negative, suggesting that subscribing to the APY is not feasible. However, at an interest rate of 6.5%, subscribers joining the scheme between the ages of 18 to 30 years would yield positive values, underscoring that subscribing to the scheme after the age of 30 is not feasible. Also, at an interest rate of 7%, subscribers joining the scheme at the age of 18 years would yield positive value, underscoring that subscribing to the scheme after the age of 18 is not feasible.

[Insert Table 3 Here]

The table presented above outlines the present value (PV) of pension benefits, contributions, and the differences between them for a fixed pension amount of Rs 3000. It indicates that, under interest rates of 7%, 7.5%, and 8%, all differences between the PV of pension benefits and contributions are negative, suggesting that subscribing to the APY is not feasible. However, at an interest rate of 6.5%, subscribers joining the scheme between the ages of 18 to 25 years would yield positive values, underscoring that subscribing to the scheme after the age of 25 is not feasible.

[Insert Table 4 Here]

The table presented above outlines the present value (PV) of pension benefits, contributions, and the differences between them for a fixed pension amount of Rs 5000. It indicates that, under interest rates of 7%, 7.5%, and 8%, all differences between the PV of pension benefits and contributions are negative, suggesting that subscribing to the APY is not feasible. However, at an interest rate of 6.5%, subscribers joining the scheme between the ages of 18 to 25 years would yield positive values, underscoring that subscribing to the scheme after the age of 25 is not feasible.

The findings presented in the research study provide valuable insights into the feasibility of enrolling in the APY across various scenarios of fixed pension amounts and interest rates and highlight a crucial aspect: the age of the subscriber at the time of enrolment significantly influences the scheme's feasibility. These findings align with previous research studies (e.g., Jain, 2018; Kumar & Singh, 2020; Pushpa & Viswanath, 2022), which also emphasise the pivotal role of age in determining the financial feasibility of participating in the APY. Specifically, the findings underscore that subscribing to the scheme at a younger age yields more favourable outcomes, particularly when considering lower interest rates. This underscores the importance of early engagement in retirement planning among India's unorganised sector and low-income professions (Sampson et al., 2024). The consistency of these findings across multiple studies underscores their robustness and suggests a clear direction for policy interventions. It highlights the necessity for targeted measures aimed at encouraging early enrolment in the APY and enhancing its effectiveness in fostering retirement security and financial inclusion among vulnerable segments of the population. By addressing these key determinants, policymakers can optimise the impact of the APY scheme and ensure its alignment with broader objectives of socio-economic development and inclusive growth.

CONCLUSION

The Atal Pension Yojana (APY), introduced by the Government of India as part of its financial inclusion efforts, aimed to provide income security and retirement benefits to those engaged in the unorganised sector or low-income professions. However, the analysis presented in this study casts doubt on the efficacy of APY in fulfilling its intended objectives. The study reveals that at higher interest rates of 7.5% and 8%, the present value of pension benefits falls short of the present value of contributions, indicating that subscribing to APY may not yield positive returns for participants. This suggests that the scheme, in its current form, may not adequately address the income security and retirement needs of its intended beneficiaries.

However, the analysis also identifies a potential scenario where the scheme could be beneficial. At a lower interest rate of 6.5%, subscribers within the age group of 18 to 25 years would receive positive present values, as also at an interest rate of 7%, subscribers would receive positive present values only if they subscribe to the scheme at the age of 18 years. These findings indicate that joining APY at a younger age could potentially lead to favourable outcomes, underscoring the importance of early enrolment in pension schemes for maximising retirement benefits.

Nevertheless, despite this potential benefit for younger subscribers, the researcher points out a broader issue regarding the overall feasibility of APY in catering to the needs of the unorganised sector. To truly address the income security and retirement concerns of the individuals engaged in unorganised sector or low-income professions, the government may need to consider additional measures, such as increasing its co-contribution to the scheme. By enhancing the government's financial support, APY could become more attractive and financially feasible for a wider range of individuals within the unorganised sector, thereby better fulfilling its intended purpose of providing meaningful retirement benefits.

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Table 1 – Progress of APY since its inception

Years	Male Subscribers	Female Subscribers	Transgender Subscribers	Total Subscribers	Assets Under Management (Rs. Crore)
2016-17	15,42,453	9,42,187	255	24,84,895	506
2017-18	30,47,793	18,35,094	942	48,83,829	1,885
2018-19	58,16,754	38,86,619	2,088	97,05,461	3,818
2019-20	89,44,446	64,70,196	3,643	1,54,18,285	6,86
2020-21	1,26,75,526	96,20,622	5,510	2,23,01,658	10,526
2021-22	1,72,33,756	1,33,95,569	6,894	3,06,36,219	16,800
2022-23	2,29,62,747	1,84,33,980	9,930	4,14,06,657	19,580
2023-24	2,90,98,502	2,42,25,627	14,353	5,33,38,482	25,490

Source: https://dfs.dashboard.nic.in/DashboardF.aspx

Table 2 – Analysing the Feasibility of APY for a Pension Amount of Rs. 1000

Entry Age	6.5%			7%			7.5%			8%		
	PV of Pension	PV of Contribution	Difference	PV of Pension	PV of Contribution	Difference	PV of Pension	PV of Contribution	Difference	PV of Pension	PV of Contribution	Difference
18	8812	7244	1568	7038	6814	224	5371	6429	-1058	4199	6079	-1879
25	13873	12580	1293	11417	11863	-446	9066	11272	-2206	7338	10700	-3362
30	19183	18352	831	16073	17367	-1294	13175	16590	-3415	10932	15809	-4877
35	26527	26807	-280	22658	25495	-2837	19147	24493	-5346	16288	23451	-7163
40	36682	39030	-2348	32054	37356	-5302	27827	36122	-8295	24266	34790	-10524

Source: Author's calculations based on stated assumptions.

Table 3 – Analysing the Feasibility of APY for a Pension Amount of Rs. 3000

Entry Age	6.5%			7%			7.5%			8%		
	PV of Pension	PV of Contribution	Difference	PV of Pension	PV of Contribution	Difference	PV of Pension	PV of Contribution	Difference	PV of Pension	PV of Contribution	Difference
18	23167	21656	1511	17424	18315	-891	13516	16208	-2692	10670	15476	-4806
25	35596	34668	928	28570	31049	-2479	22968	28319	-5351	18778	27147	-8369
30	48049	48857	-808	40745	45296	-4551	33459	42013	-8554	28375	40906	-12531
35	68179	72899	-4720	60552	68724	-8172	48740	62305	-13565	42462	61074	-18612
40	95207	104344	-9137	83835	98952	-15117	71140	92539	-21399	63565	91314	-27749

Source: Author's calculations based on stated assumptions.

Table 4 – Analysing the Feasibility of APY for a Pension Amount of Rs. 5000

Entry Age	6.5%			7%			7.5%			8%		
	PV of Pension	PV of Contribution	Difference	PV of Pension	PV of Contribution	Difference	PV of Pension	PV of Contribution	Difference	PV of Pension	PV of Contribution	Difference
18	45739	44262	1477	34974	36688	-1714	26859	32146	-5287	20997	30394	-9397
25	70503	69927	576	56845	61641	-4796	45329	55766	-10437	36690	52938	-16248
30	97819	99217	-1398	80461	89236	-8775	65877	82521	-16644	54662	78636	-23974
35	137598	146732	-9134	118312	133939	-15627	95738	122058	-26320	81438	116867	-35429
40	189167	206736	-17569	162882	191763	-28881	139136	180488	-41352	121331	173831	-52500

Source: Author's calculations based on stated assumptions.