

Does It Matter Where You Live? Analyzing Regional Disparities In Government Policy Coverage

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Abstract

This study examines regional disparities in the coverage and effectiveness of government policies across states and union territories, with a specific focus on social security schemes such as APJJB and APSBY. The study finds notable differences in the acceptance and application of policies using statistical methods such as descriptive analysis, coefficient of variation (CV), and the Kruskal-Wallis H test. Additionally, the impact of regional disparities on the performance of these initiatives is highlighted using multiple regression analysis. The factors include economic, social, demographic, and health and infrastructure indicators for disparity. The results show that differences in social and economic development have a major impact on policy outcomes, with social sector spending and state GDP contributions being key variables. The study emphasizes the necessity of focused initiatives to alleviate regional disparities and enhance the efficacy of policies. These results give policymakers important information to improve social security programs' impact and reach in neglected areas.

Keywords: *Regional Disparities, Social Security Schemes, Policy Effectiveness, Socio-economic Variables, Government Policy Coverage*

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I. Introduction

Regional disparities in government policy remain a critical challenge for attaining fair development and ensuring that no one falls behind. Access to healthcare, education, social security, and other important services varies by geography and can considerably impact a person's quality of life, economic opportunities, and general well-being. Such discrepancies not only exacerbate social and economic inequities, but also impede progress toward reaching the Sustainable Development Goals (SDGs), namely Goals 1 (No Poverty), 10 (Reduced inequities), and 16 (Peace, Justice, and Strong Institutions).

As regional disparities continue to receive attention in both academic and practical settings, it is critical to understand their underlying context and significance. Numerous international organizations, including the United Nations, the World Bank, and the International Labour Organisation (ILO), have long acknowledged the importance of correcting regional inequalities. Even if wealth gaps are closing internationally, regional disparities pose a serious threat. Large urban centers are still pulling ahead of smaller regions, which causes inequality because of things like aging populations, inadequate infrastructure, and recent economic shocks, according to the OECD (2023). Policymakers must address rising threats from climate change and digitalization through strong frameworks to prevent regions with poorer governance and inadequate public investment from falling farther behind (OECD, 2023). Comparably, research on China, India, and Indonesia shows that income disparities increased in the 1990s, especially due to macroeconomic and subnational factors (World Bank, 2005). Concerns about fairness vs efficiency are raised because while agglomeration effects increase productivity in booming regions, lagging regions experience ongoing economic deterioration and market failures (IMF, 2021). Understanding these differences might help policymakers establish more equitable policies and ensure that marginalized regions are not left behind in national development plans.

One critical topic in regional development research that has received little attention is the relationship between regional disparities and the effectiveness of government policy coverage. How do regional variations in socioeconomic characteristics such as income, literacy, poverty, and unemployment rates affect the reach and effectiveness of essential government programs? This research investigates how regional variations in socioeconomic conditions affect the coverage and efficacy of government policies, focussing on implementing

social security plans in several Indian states. We will examine the amount of regional inequality in policy implementation and investigate the factors that contribute to these discrepancies. The methodology will involve statistical assessments of these government schemes' regional socioeconomic and policy data to provide a holistic picture of how government policies might better address regional concerns.

II. Literature Review

Background and Theoretical Context

Regional disparities are the unequal distribution of economic resources, opportunities, and quality of life across geographical areas. These differences are important in policy analysis because they can affect economic development, social cohesiveness, and political stability. Understanding the origins and implications of regional inequality is critical for successful policymaking that promotes balanced growth. Causes of regional disparities include: Variations in industry diversity and human capital, which help to explain inequalities in employment growth and productivity (Saito & Wu, 2016). Regional inequalities have evolved in response to historical economic policies and globalization, resulting in enduring inequities (Pallares-Barbera et al., 2012). Location-specific variables, such as access to resources and infrastructure, are critical in defining regional economic outcomes (Saito and Wu, 2016). Disparities can cause social instability and the growth of populism, as marginalized regions may feel neglected by central governments (Cörvers & Mayhew, 2021). The regional Kuznets curve indicates that initial economic expansion might increase inequality, which may eventually converge as development continues (Jadhav, 2022). Regional disparities in income and opportunity can majorly impact health outcomes and general well-being (Bhattacharjee et al., 2020). While regional disparities provide obstacles, they also provide possibilities for focused actions to promote equitable growth. To guarantee long-term success, policymakers must strike a balance between reducing inequities and increasing general economic development.

Government policies seek to promote equitable access to resources and benefits across regions by using a variety of initiatives that address gaps in service delivery, resource allocation, and administrative capability. These techniques frequently mix universal and tailored strategies to improve equity, particularly in vulnerable populations. The Equity Sensitive Universalism method emphasizes equitable resources to produce proportionate outcomes, promoting social cohesion and solidarity (Mead et al., 2022). It implies that, while specialized interventions can benefit specific communities, they may also stigmatize and exclude people in need. Fair Resource Allocation proposes that policies prioritize vulnerable groups, ensuring that resource distribution is based on needs rather than demographic features (Anahideh et al., 2021). For example, during the COVID-19 pandemic, equitable vaccination delivery was critical, demanding a focus on high-exposure populations (Shen et al., 2021). The success of redistributive programs, such as block grants, is influenced by local administrative capacity, which might limit access to the poorest districts (Collins & Gerber, 2006). State-level institutional frameworks can either assist or impede equal access to federal funding, affecting overall resource allocation (Collins and Gerber, 2006). Some contend that universal techniques may neglect distinct local demands, potentially resulting in inefficient resource allocation. Balancing universalism with customized solutions remains a significant problem for policymakers.

Several theories and frameworks that investigate the dynamics of inequality across areas serve as the foundation for regional disparity analysis. These frameworks offer insights into the origins and consequences of inequality, assisting policymakers in effectively resolving these challenges. The Equity in Public Policy framework developed by Li et al. emphasizes the importance of equity in public service delivery by emphasizing differences in resource allocation and outcomes across Chinese regions (Li et al., 2023). This analysis reveals that within-region inequalities have a major impact on overall regional disparities, highlighting the need for focused policy responses. Jadhav addresses the regional Kuznets curve, which proposes an inverted U-shaped relationship between economic growth and geographical disparities. Disparities first widen as income rises, but they gradually reduce at higher income levels (Jadhav, 2022). This theory contributes to a better understanding of the temporal dynamics of inequality, implying that economic growth can cause both divergence and convergence across regions. Duran's paper analyses regional income inequalities using a Neo-Classical paradigm, attributing disparities to differences in factor endowments rather than total factor productivity (TFP) differentials (Duran, 2019). This viewpoint emphasizes the impact of resource distribution in determining regional economic results. Grange et al. use Nancy Fraser's justice theory to criticize city-centric growth plans, claiming that regional inequities are worsened by economic maldistribution, political misrepresentation, and cultural misrecognition (2024). This normative paradigm expands our understanding of regional inequality by integrating social justice concerns. While these frameworks provide useful insights, it is important to remember that regional discrepancies can also be attributed to historical, cultural, and political circumstances that economic models may not fully represent. Addressing these complex difficulties necessitates a comprehensive approach that incorporates multiple theoretical viewpoints and empirical facts (Bhattacharjee et al., 2020).

Nature and Causes of Regional Disparities

Regional disparities in government policy implementation and coverage are caused by a complex interaction of administrative, social, geographic, and cultural factors. These discrepancies can have a substantial impact on the efficacy and equity with which public services are delivered across regions. The unequal distribution of resources causes major differences in public service delivery, with within-region inequality having a greater impact than between-region inequality (Li et al., 2023). The diverse spatial distribution of demand based on demographic features adds to uneven access to public services (Rodrigues-Silveira, 2019). Fiscal pressures and local economic strategies can increase regional disparities, as lower-income regions may implement negative fiscal policies that worsen their economic conditions (Ruan & Zhao, 2022). While these variables illustrate the intricacies of regional inequalities, it is also worth noting that some regions may use their distinct traits to innovate and enhance policy outcomes, implying that differences can occasionally lead to beneficial advances.

Socioeconomic indicators such as literacy, unemployment, and per capita income all have a substantial impact on policy utilization since they shape the context in which social programs are conceived and executed. These indicators are crucial measurements that help policymakers understand the population's needs and situations, eventually influencing resource allocation and program design. Higher literacy rates are associated with better social policy outcomes since educated people are more inclined to participate in civic activities and advocate for their rights (Haniff, 1976). Literacy is required for comprehending and utilizing social services, which increases the success of programs aiming at increasing quality of life (Neufville, 1982). High unemployment frequently results in greater demand for social services, causing governments to change policies to meet these demands (Carley, 1981). Per capita income is a good indicator of a country's ability to pay and maintain extensive social welfare systems (Haniff, 1976). While socioeconomic indicators are critical for policymaking, it is necessary to recognize that their interpretation can be impacted by political circumstances and bureaucratic constraints, resulting in misalignment between indicators and actual policy demands (Carley, 1981).

Methodological Approaches in Existing Studies

Regional disparities in policy coverage are studied using a range of methods, including cross-sectional studies, longitudinal analysis, and advanced panel data techniques. These techniques are critical for comprehending the intricacies of health disparities and their policy implications across geographies. Longitudinal studies follow changes over time and provide a dynamic view of regional disparities. They can simulate variances in policy impacts and health outcomes, as demonstrated in regional science research (McClain & Waldorf, 2021). Panel data approaches, such as Hidden Markov models, enable the examination of time-varying unobserved heterogeneity, improving our knowledge of how disparities arise (Park, 2012). Multilevel intervention studies frequently use cluster-randomized trials to assess the efficacy of policies aiming at reducing disparities, emphasizing the importance of strong methodological methods (Murray & Goodman, 2024). While these techniques give useful insights, they also confront limitations, such as the requirement for reliable data and the complexities of modeling interactions between many factors that influence regional disparities.

To better understand the underlying causes of regional disparities, econometric methodologies such as fixed effects and random effects models are increasingly being used in their research. These strategies enable researchers to account for unobserved variation and get more robust insights into the dynamics of regional development. Fixed effects models are often used to analyze panel data, accounting for time-invariant characteristics across regions. This method helps to separate the impact of variables like capital accumulation and total factor productivity (TFP) on regional income disparities (Duran, 2019). For example, Duran's analysis shows that inequalities in factor endowments are a key driver of income inequality, implying that fixed effects can effectively capture these regional characteristics over time (Duran, 2019). Random effects models are useful when researchers believe the unobserved effects are uncorrelated with the independent variables. This technique is especially effective in meta-analyses and longitudinal research, as it allows for more generalizations across areas (Gurka et al., 2012). Kokocińska and Puziak's research on regional income disparities suggests that random effects can analyze the impact of major political events like EU enlargement and the 2008 financial crisis on income distribution across European regions (Kokocin'ska & Puziak, 2020). Semi-parametric approaches have been used to study the relationship between regional inequality and economic development. Results show that regional disparities can be temporary and stabilize at greater levels of development (Ezcurra & Rapún, 2006). Bhattacharjee et al. emphasize the multidimensional character of regional inequalities, arguing that a variety of econometric methodologies are required to capture the intricacies of income, opportunity, and well-being across areas (Bhattacharjee et al., 2020). While econometric tools can provide useful insights into regional disparities, it is critical to recognize the limitations and potential biases inherent in these models. For example, the decision between fixed and random effects might have a considerable impact on the outcomes, requiring careful examination of the underlying assumptions and data characteristics.

Objective of analysis

- To analyze regional disparities in the coverage and implementation of government policies across states and union territories.
- To evaluate the impact of regional disparities on the adoption, effectiveness, and success of government programs and their reasons behind it.

III. Methodology

The study utilizes secondary data from official records and reports related to the APJJB and APSBY schemes across Indian states and union territories. The data spans multiple years, collected from Department of Financial Services (DFS), Ministry of Finance, Government of India, Periodic Labour Force Survey (PLFS), NITI Aayog, RBI's Handbook of Statistics on Indian States and, MoSPI, Government of India. Descriptive statistics, including mean, standard deviation, minimum, and maximum values, were computed to provide an initial understanding of the dataset. The Coefficient of variation (CV) for both APJJB and APSBY was calculated for each state and union territory to identify regional disparities in scheme implementation and outcomes. States with higher CV values exhibited greater inconsistencies in scheme execution. The Kruskal-Wallis H test was employed to analyze disparities across states. To explore relationships among variables, a Pearson correlation analysis was conducted. The association between the independent factors (disparity indicators) and the dependent variables (average claims paid) was assessed using multiple linear regression models. JJB and SBY were given their models. SPSS software was used for all analyses.

Table 1: Discription of Variables Used in the Study

		Variables		Measurement
Dependent Variables	Average Amount Pliad in Claims	Average of AP-JJB	APJJB	Average amount of claims paid, under PMJJB from 2017-23
		Average of AP-SBY	APSBY	Average amount of claims paid, under PMSBY from 2017-23
Independent Variables	Economic Disparities	Per Capita Net State Domestic Product	PCI	Average of PCNSDP from 2017-2023
		Unemployment Rate	UR	Average of UR from 2018-2023
		Poverty Rate	POV	Headcount Ratio, 2019-21
		State's Contribution to GDP	GSDP	Average of GSDP at constant from 2017-23
	Social Disparities	Literacy Rate	LIT	Literacy rate is defined as the population of literates in the population aged 7 year and above, 2011
		Gender Disparity Index	GDI	Average of Gender Parity Index of Gross Enrolment Ratio, 2021-22
		Social Sector Spending	SSE	Average of Social Sector Expenditure from 2017-23
		Caste/Community Distribution	CASTEDIS	Percentage of SC & ST of State and UT population
	Demographic Disparities	Population Density	DENS	Density of Population (Per square km) 2011
		Urbanization Rate	URB	Percentage of Urban Population of State and UT population, 2011
		Dependency Ratio	DR	Old age dependency ratio by sex and residence in major states
	Health and Infrastructure Disparities	Hospital Availability	HOSP	Number of Government Hospitals, 2022
		Bank Penetration	BANKPEN	Distribution of offices of Scheduled commercial banks, 2023
		Expenditure on Health	HE	Average of Public expenditure on health, 2017 -2020

Source: Author's analysis

IV. Data Analysis And Findings

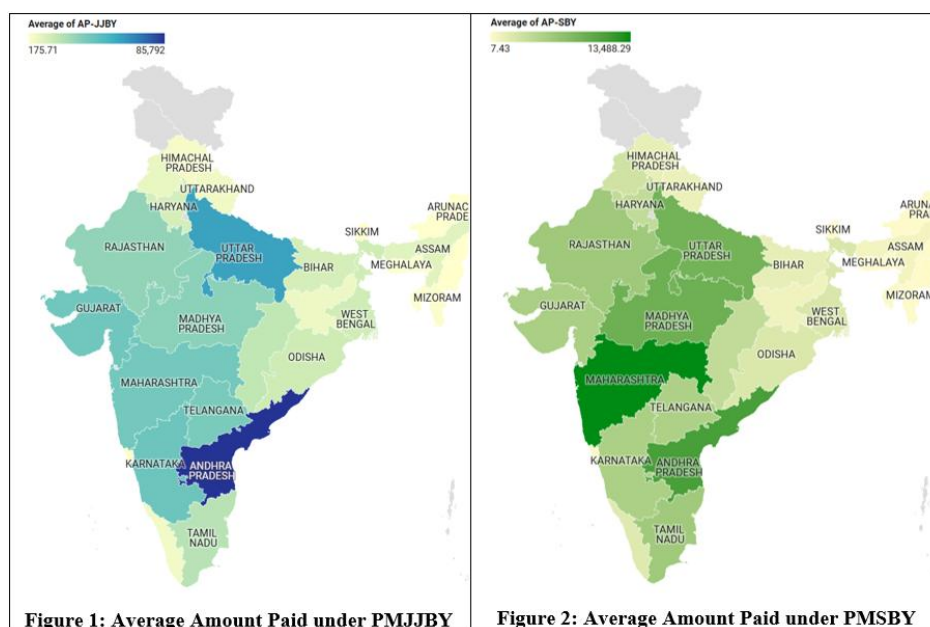
Assessment of Regional Disparities

Table 2: Descriptive Statistics

Variables	N	Minimum	Maximum	Mean	Std. Deviation
APJJB	31	175.714	85792	16124.59908	20191.7537
APSBY	31	7.429	13488.286	3034.78341	3585.49203
PCI	31	28263.286	307975.143	120635.7604	66596.76426
UR	31	2.04	15.14	5.43742	2.668541
POV	31	0.55	33.76	11.21355	8.767257
GSDP	31	1665715	197728080.4	45214915.49	47762688.702558

LIT	30	61.8	94	77.27333	8.358704
GDI	31	0.962	1.17	1.03929	0.046013
SSE	30	2919.714	153117.857	49318.36667	43463.51309
CASTEDIS	30	10.55	94.54	34.52467	22.40174
DENS	30	17	11320	1107.03333	2556.694532
URB	31	10.03	97.5	36.4623	21.28901
DR	21	10.4	19.6	14.28095	1.984343
HOSP	31	11	4942	1183.35484	1325.520163
BANKPEN	31	168	18415	5047.74194	4751.440595
HE	30	395.525	18051.125	5171.94583	4430.118558

Source: Author's analysis



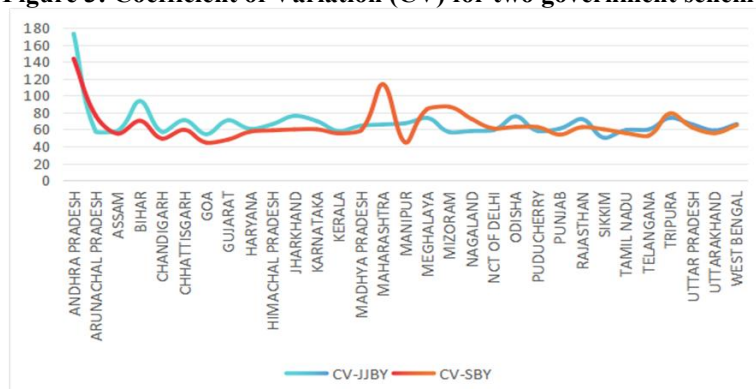
Source: Author's analysis

Coefficient of Variation (CV)

$CV = (\text{Standard Deviation of Claims Paid} / \text{Mean of Claims Paid}) 100$

The CV represents the degree of variability compared to the mean, which aids in determining regional inequalities between states and union territories. Andhra Pradesh has the greatest CV for both plans, showing significant variation in scheme implementation relative to other states. In most states, the CV for AP-JJBY and AP-SBY is between 40 and 80, indicating considerable variability. Some states, such as Maharashtra, have rapid surges, particularly in CV-SBY, indicating inconsistent scheme implementation or coverage. The trend lines for CV-JJBY and CV-SBY are very similar, but CV-SBY (red) has slightly higher values in several places. This shows that regional disparities in AP-SBY are slightly greater than those in AP-JJBY. States with lower CVs include Kerala, Punjab, and Tamil Nadu, indicating more consistent execution of both initiatives. In most states, AP-SBY has a somewhat higher variability (CV-SBY) than AP-JJBY.

Figure 3: Coefficient of Variation (CV) for two government schemes



Source: Author's analysis

Kruskal-Wallis H test

Normality testing for APJJB data across states yields varied results using the Kolmogorov-Smirnov (K-S) and Shapiro-Wilk (S-W) tests. Andhra Pradesh deviates significantly from normalcy ($p < 0.05$ for both tests), showing non-normality. The normality tests for the APSBY data across states reveal a mix of normal and non-normal distributions. The tests of homogeneity of variances for both APJJB and APSBY data yield significant findings ($p = .000$), with Levene's statistics of 5.368 and 7.446, respectively. These data indicate that the assumption of variance homogeneity is not met among the groups under consideration. This study chose the Kruskal-Wallis H test as the best statistical approach for analyzing data. This conclusion was made based on the results of the preliminary tests for normality and homogeneity of variances.

Per Capita Payment Rate (Per 1,00,000) = (Total amount paid/Population) 100

Table 3: Summary of Kruskal-Wallis test

Scheme	Test Statistic	df	Chi-Square Value	Asymp. Sig. (p-value)	Conclusion
Per Capita AP-JJB	Kruskal-Wallis	30	97.376	0	Significant regional disparity exists
Per Capita AP-SBY	Kruskal-Wallis	30	137.971	0	Significant regional disparity exists

Source: Author's analysis

The Kruskal-Wallis test was used to determine variations in per capita values between the two plans across states. Both schemes had statistically significant test results ($p < 0.05$), indicating considerable discrepancies between states. AP-SBY has increased variability (a higher Chi-Square value), implying that discrepancies in implementation are more pronounced in this scheme. Policy interventions should address these gaps by focusing on underperforming regions and ensuring equitable scheme implementation.

Correlations

Table 4: Summary of correlation results

	APJ JBY	AP SB Y	PCI	U R	PO V	GS DP	LIT	GD I	SS E	CAST EDIS	DE NS	U R B	D R	H OS P	BAN KPEN	H E
APJJ BY	1															
APSB Y	.873 **	1														
PCI	-.016 6	-.013 7	1													
UR	-.360 *	-.035 4	0.161	1												
POV	0.078	0.018	-.740**	-.0247	1											
GSDP	.677 **	.828 **	0.013	0.321	0.045	1										
LIT	-.444 *	-.032 1	.612**	0.308	-.731**	0.134	1									
GDI	-.557 **	-.628**	0.012	0.18	0.143	-.516**	0.242	1								
SSE	.761 **	.838 **	-.026	-.366*	0.218	.875**	-.400*	-.525**	1							
CAST EDIS	0.307	0.328	0.357	0.099	0.273	-.427*	0.027	.445*	-.444*	1						
DENS	0.154	0.172	.465**	0.11	0.255	0.055	0.302	0.263	0.057	-0.285	1					

URB	-.014 4	-.009 2	.697**	0.235	-.600**	0.054	.617**	0.156	-.0108	-0.277	.800**	1				
DR	0.009	0.156	0.067	.437*	-.436*	0.118	0.412	-.0386	0.05	-0.175	-.0427	-.0123	1			
HOSP	.548**	.405*	-.0353	-.0304	.398*	.498**	-.512**	-.444*	.644**	-0.296	-.0197	-.0292	-.0067	1		
BANKPEN	.726**	.796**	-.0212	-.0314	0.137	.902**	-.0324	-.567**	.961**	-.450*	-.0119	-.0109	0.175	.691**	1	
HE	.724**	.783**	-.0195	-.0334	0.156	.874**	-.032	-.522**	.967**	-.464*	0.033	-.0021	0.024	.694**	.973**	1

Source: Author's analysis

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Understanding the relationships between the variables examined in the study is made possible by the correlation matrix. APJJBYP and APSBY have a significant positive correlation ($r = 0.873$, $p < 0.01$), suggesting that the same factors that affect claims in one scheme are likely to have a similar effect on the other. Both APJJBYP ($r = -0.166$) and APSBY ($r = -0.137$) have poor correlations with PCI, indicating that PCI has little effect on claims. Higher unemployment rates may result in fewer claims under these schemes, as evidenced by the negative association between the unemployment rate (UR) and APSBY ($r = -0.354$) and APJJBYP ($r = -0.360$). Poverty Rate (POV) has little direct influence, as seen by its weak relationships with APSBY ($r = 0.018$) and APJJBYP ($r = 0.078$). State's Contribution to GDP (GSDP) plays a substantial impact in deciding claim amounts, as evidenced by its strong positive association with both APJJBYP ($r = 0.677$) and APSBY ($r = 0.828$). Higher literacy rates may result in lower claim amounts, as seen by the somewhat negative association between Literacy Rate (LIT) and APJJBYP ($r = -0.444$) and APSBY ($r = -0.321$). Gender disparity may have an impact on claim patterns, as evidenced by the negative correlations found between the Gender Disparity Index (GDI) and APJJBYP ($r = -0.557$) and APSBY ($r = -0.628$). The significance of Social Sector Spending (SSE) in generating claims is highlighted by the substantial positive correlation it has with both APJJBYP ($r = 0.761$) and APSBY ($r = 0.838$). APJJBYP and APSBY have little to no connection with variables like Population Density (DENS) and Urbanization Rate (URB), suggesting that demographic factors play a small part. There is no discernible relationship between Dependency Ratio (DR) and either policy. APJJBYP ($r = 0.548$) and APSBY ($r = 0.405$) have a positive correlation with Hospital Availability (HOSP), suggesting that larger claims are linked to stronger health infrastructure. Strong positive associations between Bank Penetration (BANKPEN) APJJBYP ($r = 0.726$) and APSBY ($r = 0.796$) underscore the importance of financial inclusion in the processing of claims. Strong correlations between Health Expenditure (HE) and APJJBYP ($r = 0.724$) and APSBY ($r = 0.783$) highlight the importance of HE in determining claim amounts. Higher claims under APJJBYP and APSBY are closely correlated with social sector spending, the state's GDP contribution, and infrastructure and health characteristics like bank penetration and health expenditures, according to the correlation analysis. On the other hand, the poverty rate and demographic considerations have little bearing. These results point to important areas where policy should be concentrated to improve social security programs' efficacy.

Regression Analysis

Table 5: Summary of Regression Anlaysis

Variables	Code	APJJBYP (Sig.)	APSBYP (Sig.)	Hypothesis	Decision
	C	0.249	0.185	H01a: Economic disparities across Indian states do not significantly impact the average amount paid in claims under APJJBYP H01b: Economic disparities across Indian states do not significantly impact the average amount paid in claims under APSBY	H01a Rejected H01b Rejected
Per Capita Net State Domestic Product	PCI	0.388	0.223		
Unemployment Rate	UR	0.346	0.403		
Poverty Rate	POV	0.765	0.479		
State's Contribution to GDP	GSDP	0.000	0.000		
R-squared		0.501	0.712		
Adjusted R-squared		0.424	0.688		
F-statistic		6.526	16.063		

Sig		0.001	0.000		
	C	0.100	0.046		
Literacy Rate	LIT	0.322	0.570	H02a: Social disparities across Indian states do not significantly impact the average amount paid in claims under APJJB	H02a Rejected H02b Rejected
Gender Disparity Index	GDI	0.164	0.021		
Social Sector Spending	SSE	0.001	0.000	H02b: Social disparities across Indian states do not significantly impact the average amount paid in claims under APSB	
Caste/Community Distribution	CASTEDIS	0.683	0.223		
R-squared		0.632	0.763		
Adjusted R-squared		0.795	0.723		
F-statistic		10.314	19.299		
Sig		0.000	0.000		
	C	0.309	0.533		
Population Density	DENS	0.231	0.073	H03a: Demographic disparities across Indian states do not significantly impact the average amount paid in claims under APJJB	H03a not Rejected H03b not Rejected
Urbanization Rate	URB	0.374	0.095		
Dependency Ratio	DR	0.505	0.670	H03b: Demographic disparities across Indian states do not significantly impact the average amount paid in claims under APSB	
R-squared		0.091	0.211		
Adjusted R-squared		-0.080	0.064		
F-statistic		0.531	1.430		
Sig		0.667	0.271		
	C	0.913	0.947		
Hospital Availability	HOSP	0.734	0.062	H04a: Health and Infrastructure disparities across Indian states do not significantly impact the average amount paid in claims under APJJB	H04a Rejected H04b Rejected
Bank Penetration	BANKPEN	0.671	0.233		
Expenditure on Health	HE	0.474	0.413	H04b: Health and Infrastructure disparities across Indian states do not significantly impact the average amount paid in claims under APSB	
R-squared		0.530	0.676		
Adjusted R-squared		0.476	0.639		
F-statistic		9.787	18.112		
Sig		0.000	0.000		

Source: Author's analysis

The average amount paid in claims under APJJB and APSB was examined in relation to economic disparities among Indian states as determined by PCI, UR, POV, and GSDP. Based on the data, both H01a and H01b are rejected. GSDP has a significant impact on the claims under both schemes. The strong p-values of the other factors (PCI, UR, and POV) show that they do not significantly affect the results. The LIT, GDI, SSE, and CASTEDIS measures of social disparity were examined. H02a and H02b were rejected due to the substantial p-values. Variables like GDI and SSE under APJJB and SSE under APSB show their influence. The impact of demographic parameters, such as DENS, URB, and DR, was examined. H03a and H03b cannot be rejected since neither scheme's demographic variables exhibit significant p-values. This implies that the average claims paid are not much impacted by demographic differences. Disparities in infrastructure and health, symbolized by HE, BANKPEN, and HOSP, were tested. H04a and H04b are rejected due to significant p-values. HOSP under APSB shows significant p-value. This demonstrates how important variations in infrastructure and health have in affecting claims.

The four categories differ in how well the models evaluate inequalities and how they affect claims under APSB and APJJB. With strong F-statistics ($p < 0.05$), the economic disparities model explains 50.1% of the variability in claims for APJJB and 71.2% for APSB, suggesting a robust model fit. The robustness of the social disparities model is further supported by the fact that it explains 63.2% and 76.3% of the variation in claims for APJJB and APSB, respectively, with significant F-statistics ($p < 0.05$). On the other hand, non-significant F-statistics and minimal R-squared and adjusted R-squared values near 0 suggest that the demographic disparities model is unable to account for variability. This implies that claims are not significantly impacted by demographic factors. Last but not least, the health and infrastructure model well captures the relationship between health and infrastructure disparities and claims variability, accounting for 53.0% of the variability in claims for APJJB and 67.6% for APSB, with significant F-statistics ($p < 0.05$). Claims are explained in large part by GSDP (economic), SSE (social), HOSP, and BANKPEN (health and infrastructure). Claims are not considerably impacted by demographic factors. To increase the efficacy of social security programs, policymakers should concentrate on enhancing state GDP contributions, social sector investment, and health infrastructure.

V. Discussion And Conclusion

According to the Coefficient of Variation (CV), the analysis shows notable regional differences in the use of the APJJB and APSB systems. When compared to other states, Andhra Pradesh shows the greatest CV, indicating significant variation in scheme implementation. With large increases in CV-SB, states like Maharashtra exhibit irregular trends that may be the result of insufficient coverage or implementation.

Conversely, states with lower CV values—such as Tamil Nadu, Kerala, and Punjab—indicate more consistent application. These discrepancies highlight the necessity of focused policy actions to resolve inconsistent implementation, particularly in states with high CV values. A higher degree of disparity in the earlier scheme is further suggested by the marginally higher variability in APSBY as opposed to APJJB. Economic, social, and health infrastructure disparities have a substantial impact on claims under these schemes, whereas demographic characteristics have less effect. It is projected that states with higher GDP contributions will have greater resources available for implementing social security programs. Better infrastructure and administrative capability are indicated by higher GSDP, which results in more efficient program execution. Other factors like PCI may not be significant since they target low-income groups, who may not immediately benefit from the general economic prosperity that PCI reflects. It's possible that the programs don't directly address the problem of unemployment. APSBY and APJJB are more focused on insurance and financial inclusion than they are on creating jobs. Furthermore, there may not be much overlap between the unemployed and the uninsured population. Non-significant poverty outcomes may be explained by low awareness, problems with accessibility, or administrative inefficiencies in underdeveloped areas. Additionally, impoverished people might put their immediate requirements for consuming ahead of insurance or pension plans. Since literate people are more likely to understand the advantages of such programs, literacy is predicted to have a beneficial impact on scheme acceptance. However, the outcome was not significant. Literacy might not be a major factor for APJJB since outreach initiatives rather than personal knowledge may be what motivates enrollment. Literacy may increase APSBY's knowledge of insurance products and encourage their uptake. Gender-equitable states are more likely to guarantee participation from all demographic groups, hence lower gender disparity (higher GDI scores) should have a beneficial impact on scheme adoption. In states where women have greater financial decision-making authority and gender fairness, APSBY may be more inclusive. Because of its more extensive outreach strategies, APJJB enrollment may be less responsive to gender disparities. Spending more on the social sector could improve outreach and infrastructure, which would improve the way these programs are implemented. Higher enrollment and claims are probably the result of states investing more in social sectors because they have stronger systems in place to advertise and run these programs. The programs might not particularly target or exclude certain castes or communities, which could result in similar participation rates across the states and a non-significant Caste/Community Distribution result. Because urbanized areas have greater infrastructure and outreach, a higher population density may have a favorable effect on scheme enrollment. The programs might not adequately address the particular requirements of densely populated places, or there may already be other social systems in place in metropolitan areas. Due to easier access to banks and financial services, higher rates of urbanization ought to be associated with better plan enrollment. In metropolitan regions, where people depend on private insurance or pension plans, the schemes may not cover as much. As dependent populations look for financial stability, a larger dependency ratio may encourage scheme enrollment. Dependent populations' financial requirements may not be immediately met by the schemes, or there may not be much awareness of them. Since APSBY is a health-related insurance, increased hospital accessibility may encourage its uptake. The marginal significance of APSBY suggests that health infrastructure contributes to the promotion of health-related programs. Hospital accessibility is less important for APJJB. Increased bank penetration makes financial services more accessible, which promotes scheme acceptance. Although bank presence is important for financial inclusion, other factors like outreach and awareness may have a greater impact on scheme enrollment. It is anticipated that states with greater health spending will have higher APSBY enrollment rates. Because of administrative inefficiencies or a misalignment between public health spending and scheme promotion, the schemes might not directly benefit from health expenditures. To address the observed discrepancies, policymakers must give priority to increasing state GDP contributions, decreasing gender inequities, and strengthening the financial and health infrastructure. The efficacy of APJJB and APSBY can be increased by concentrating on three crucial areas, guaranteeing fair access and uniform state-by-state implementation.

VI. Policy Recommendations

To guarantee consistent implementation of the APJJB and APSBY schemes, states with significant levels of variability should get specific assistance. To close execution gaps, specific action plans that include established criteria and more monitoring should be created. Investments in these areas are crucial, as evidenced by the substantial impact that hospital availability and bank penetration have on claims. To increase accessibility and use of social security programs, policymakers should give priority to growing banking and healthcare facilities, particularly in underprivileged areas. The need to provide sufficient funding for welfare programs is highlighted by the significant impact that social sector spending has on claim amounts. To reinforce the safety net that these programs offer, governments should guarantee ongoing and expanded spending in the social sectors. Gender inequality must be addressed, as evidenced by the negative association between claims and the Gender Disparity Index (GDI). These programs' efficacy and reach can be increased by policies that support women's economic and social empowerment. Higher GSDP states make more efficient contributions to the programs. The

ability of states to fund social security programs will be improved by initiatives to strengthen their economies through industrial expansion, skill development, and job creation.

VII. Limitations

While the analysis offers useful insights, it is based on secondary data, which may not fully reflect the intricacies of scheme accessibility and beneficiary satisfaction. Future research could use qualitative data to supplement these findings.

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