

Impact of Van Dhan Vikas Yojana on Empowering Tribal Livelihood in Bastar District

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Abstract

Forest-dependent tribal communities across central India continue to rely heavily on Minor Forest Produce (MFP) for subsistence, yet they have historically captured only a small share of its final market value because of weak processing capacity, poor market linkage, and the dominance of intermediaries in the trade chain. The Van Dhan Vikas Yojana (VDVY), launched by the Ministry of Tribal Affairs and implemented through TRIFED, seeks to correct this imbalance by organising tribal gatherers into Self-Help Groups (SHGs) under Van Dhan Vikas Kendras (VDVKs) for the value addition, branding, and marketing of MFP. This paper examines the socio-economic impact of the VDVY on tribal livelihood in Bastar district of Chhattisgarh, a region marked by extensive forest cover and a predominantly tribal population. Using a mixed-method research design on a stratified sample of 100 beneficiaries drawn from four localities of the district, the study applies the Chi-square test of independence to examine changes in the income distribution of beneficiaries before and after the scheme, the influence of socio-economic factors such as education, gender, location, and duration of employment on access to scheme benefits, and the association between distance from the nearest VDVK and the frequency of access-related difficulties reported by beneficiaries. The results indicate a statistically significant improvement in income levels following participation in the scheme, and reveal that education, rural connectivity, and continuity of employment strongly shape access to benefits, whereas gender-based differences, though present, are not statistically significant. The paper closes with policy recommendations aimed at strengthening the inclusiveness, market linkage, and crisis-resilience of the scheme.

Keywords: Van Dhan Vikas Yojana; Minor Forest Produce; Tribal Livelihood; Van Dhan Vikas Kendra; Self-Help Groups; Bastar

1. INTRODUCTION

Forests occupy nearly one-fifth of India's geographical area, and a large share of this forested landscape overlaps with regions inhabited by the country's Scheduled Tribe population. For these communities, the forest is not a peripheral resource but the foundation of daily subsistence: it supplies food during lean agricultural months, fodder for livestock, medicinal plants, fuelwood, and, most importantly for the present study, Minor Forest Produce (MFP) that is collected, consumed, and sold in local and regional markets. According to figures maintained by the Tribal Cooperative Marketing Development Federation of India (TRIFED), the nodal agency for tribal marketing under the Ministry of Tribal Affairs, MFP accounts for between twenty and forty percent of the annual household income of forest-dwelling communities, and for some Particularly

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Vulnerable Tribal Groups this share is considerably higher during the monsoon and post-monsoon collection season (TRIFED, n.d.). Items such as tendu leaves, mahua flowers, sal seed, tamarind, lac, honey, and a range of medicinal herbs form the backbone of this informal economy.

Despite its centrality to tribal welfare, the MFP trade has long been characterised by structural weaknesses that prevent gatherers from realising fair value for their labour. Collection is dispersed across remote and often inaccessible terrain; storage and primary-processing infrastructure at the village level is minimal or absent; and market information rarely reaches the primary collector in time to negotiate favourable terms. In the absence of organised procurement and processing facilities, tribal households have historically sold raw, unprocessed produce to local traders and middlemen at the first point of contact, forfeiting the substantially higher margins that accrue at the stages of grading, processing, packaging, and branding. This pattern of value capture by intermediaries rather than primary producers has been documented repeatedly in the literature on the tribal forest economy and forms the central rationale for successive government interventions, beginning with the Minimum Support Price (MSP) for MFP scheme introduced in 2013-14 and culminating in the more entrepreneurship-oriented Van Dhan Vikas Yojana.

The Van Dhan Vikas Yojana (VDVY), also referred to as the Pradhan Mantri Van Dhan Yojana (PMVDY), was launched on 14 April 2018 under the Ministry of Tribal Affairs, Government of India, and is implemented on the ground by TRIFED in convergence with State Nodal Agencies for MFP and District Collectors. The scheme was inaugurated by Prime Minister Narendra Modi in Bijapur district of Chhattisgarh on the occasion of Ambedkar Jayanti, where the first model Van Dhan Vikas Kendra was established as a pilot project with an initial outlay of about twenty-five lakh rupees. Rather than confining government support to price assurance alone, as the earlier MSP scheme had done, the VDVY was designed to move tribal gatherers up the value chain by enabling them to undertake primary processing, grading, packaging, branding, and direct marketing of forest produce through community-owned enterprises. The basic institutional unit of the scheme is the Van Dhan Vikas Kendra (VDVK), typically constituted of ten to fifteen Van Dhan Self-Help Groups of about twenty to thirty tribal gatherers each, amounting to roughly three hundred beneficiaries per Kendra. Each Kendra functions as a common facility centre where members are trained in skill upgradation and provided with processing equipment such as dryers, graders, decorticators, and packaging tools, along with working capital to convert raw MFP into market-ready products (TRIFED, n.d.; Ministry of Tribal Affairs, 2023). By the early 2020s the scheme had been scaled up considerably: parliamentary replies placed the number of VDVKs sanctioned nationally in the tens of thousands, spread across more than two dozen states and union territories, with several lakh tribal gatherers associated with the initiative (Ministry of Tribal Affairs, 2023; Press Information Bureau, 2021).

The present study is located in Bastar district of Chhattisgarh, a region that offers a particularly instructive setting for evaluating the effectiveness of the VDVY. Bastar is one of the most densely forested and tribal-dominated districts of central India: at the 2011 Census, the undivided Bastar recorded a population in excess of fourteen lakh persons, of which nearly seventy percent belonged to Scheduled Tribe communities such as the Gond, Maria, Muria, Dhurwa, Bhatra, and Halba (Office of the Registrar General & Census Commissioner, India, 2011). Following the bifurcation of the undivided district, the present-day Bastar district retains a population of over eight lakh persons across an area of roughly 6,597 square kilometres, and continues to be governed under the Fifth Schedule of the Constitution and the Panchayats (Extension to Scheduled Areas) Act, 1996, which vests significant authority over community forest resources in the Gram Sabha (Office of the Registrar General & Census Commissioner, India, 2011). The region's abundant forest cover makes it rich in MFP, while its comparatively weak transport and market infrastructure means that the structural problems the VDVY was designed to solve, namely middleman dependence, poor price realisation, and limited processing capacity, are present here in an especially acute form.

Bastar therefore represents both a region of high potential for the scheme and a stringent test of its actual implementation on the ground.

This paper attempts to answer three related questions. First, has the VDVY produced a measurable and statistically verifiable improvement in the income levels of tribal beneficiaries in Bastar? Second, do socio-economic characteristics such as literacy, gender, village connectivity, and continuity of employment under the scheme shape a beneficiary's ability to access its benefits, or does the scheme reach different sections of the tribal population with comparable ease? Third, does physical distance from the Van Dhan Vikas Kendra translate into greater difficulty in accessing scheme services, a question with direct relevance to the design of future Kendra networks in geographically dispersed tribal regions. Answering these questions through primary survey data and formal hypothesis testing allows the study to move beyond a purely descriptive account of the scheme and to identify, with statistical rigour, the specific dimensions along which the VDVY is succeeding and the dimensions along which its design or implementation requires strengthening.

2. LITERATURE REVIEW

A growing body of research has examined government-led interventions aimed at improving the economic position of tribal and forest-dependent communities in India, and this section situates the present study within that literature, drawing both on studies that deal directly with the Van Dhan Vikas Yojana and MFP-based livelihoods and on the wider literature on financial inclusion and community-based enterprise that informs the analytical approach adopted here.

Borah (2022), in a study on financial inclusion through the Pradhan Mantri Jan Dhan Yojana (PMJDY), used secondary data to assess how the opening of formal bank accounts affected the financial position of tribal households. The study found that while PMJDY substantially widened access to formal banking channels, beneficiaries continued to struggle with financial literacy, and consequently were often unable to translate account ownership into effective management of income and savings. Borah's central conclusion, that formal financial inclusion does not automatically produce financial empowerment, is directly relevant to the present study, since the VDVY likewise assumes that organisational inclusion, in this case membership of a Van Dhan Self-Help Group, will translate into improved livelihood outcomes. The gap Borah identifies, namely the need for research on how financial literacy programmes might strengthen entrepreneurial capacity among tribal communities, is one that the present study addresses indirectly through its analysis of how education shapes access to VDVY benefits.

Balkrishna, Chauhan, Srivastava, Sharma, and Arya (2022) examined the promotion of tribal entrepreneurship in North-East India through the Pradhan Mantri Van Dhan Vikas Yojana using a qualitative case-study approach. Their findings indicated that community-led enterprises under the scheme contributed meaningfully to tribal empowerment, but that inadequate technical training and weak market access continued to constrain the scale of that impact. The authors argued that sustainable success under the scheme requires policy frameworks that combine entrepreneurship promotion with systematic capacity-building, and noted that empirical evaluation of VDVK business models across different regions remained sparse. The present paper responds to that gap by offering a region-specific, quantitatively grounded evaluation of VDVK performance in Bastar, an area with a very different ecological and demographic profile from North-East India.

Lingireddy, Sarkar, Rajan, and Srivani (2022), studying the knowledge levels of tribal farmers regarding VDVK activities in Andhra Pradesh through a survey method, found that limited awareness of the scheme, arising from poor communication and inadequate training mechanisms, constrained beneficiary participation. Their conclusion that information dissemination constitutes a key constraint on scheme effectiveness anticipates one of the central findings of the present study, in which access to benefits is shown to vary sharply with literacy and with the degree of

connectivity of a beneficiary's village, both of which mediate how effectively information about the scheme reaches potential participants.

Mehta and Bhavsar (2023) undertook an interstate quantitative analysis of the sustainability of Self-Help Groups in India and concluded that institutional backing and regular monitoring are critical to the long-term survival of SHG-based enterprises. Their suggestion that VDVKs require robust monitoring and accountability mechanisms for durability is echoed in the present study's findings on the influence of continuity of employment: beneficiaries who remained engaged with Kendra activities for a longer duration during the year reported substantially higher access to scheme benefits, suggesting that sustained institutional engagement, rather than one-time participation, is what drives outcomes. Mehta and Bhavsar note a gap in comparative research between SHG and VDVK sustainability indicators specifically, a gap that remains open and that future longitudinal work on Bastar's Kendras could usefully address.

Kerketta (2023), in a field-based study of the commercial viability of tamarind, one of the most widely traded minor forest produce items in Jharkhand, found through structured interviews that a substantial share of the profit generated in the tamarind trade was captured by middlemen rather than by the tribal collectors who gathered the produce. Despite favourable yield potential, limited access to processing infrastructure and organised market networks kept the profit margin available to primary collectors low. Kerketta's finding that structural constraints in infrastructure and market access, rather than resource scarcity, are the binding constraint on tribal MFP income is directly consistent with the design logic of the VDVY, which targets precisely these constraints through the establishment of Kendra-based processing facilities. Kerketta also flags the need for comprehensive analysis across a wider range of MFP items and for an evaluation of scalable frameworks for income generation, a call that the present Bastar-focused study answers in part, though it too is limited to a single geographical area and a defined sample.

Beyond these VDVY-specific studies, the broader literature on rural financial and marketing schemes provides useful methodological and conceptual parallels. Acharya (2023), examining the marketing of minor forest products more generally, documents persistent structural issues in MFP value chains, including fragmented procurement, weak storage infrastructure, and information asymmetry between primary collectors and downstream buyers, concerns that mirror those raised specifically in the VDVY literature. Studies on other flagship welfare schemes, such as Gupta and Mathur's (2023) critical review of PMJDY and Bhanot and Bapat's (2020) analysis of the sustainability of bank-linked Self-Help Groups, similarly underline a recurring pattern in Indian rural development policy: schemes that succeed in expanding formal access often under-deliver on translating that access into durable income gains unless they are accompanied by sustained capacity-building, monitoring, and market linkage. This pattern provides a useful lens through which to interpret the mixed results, strong income impact alongside persistent access inequalities, that emerge from the data analysis presented later in this paper.

Taken together, the literature converges on three broad conclusions that inform the present study's design. First, community-based, value-addition-oriented interventions such as the VDVY have real potential to improve tribal incomes, but that potential is frequently constrained by weak market linkage and processing infrastructure (Kerketta, 2023; Balkrishna et al., 2022). Second, awareness and information dissemination are recurring bottlenecks that limit the reach of tribal welfare schemes, particularly in remote and poorly connected areas (Lingireddy et al., 2022). Third, sustainability and durability of benefit depend on institutional continuity and monitoring rather than one-time enrolment (Mehta & Bhavsar, 2023). None of the reviewed studies, however, offers a statistically tested, region-specific assessment of how income change, socio-economic access disparities, and geographical distance jointly shape the outcomes of the VDVY within a single, densely tribal district such as Bastar. It is this gap that the present study seeks to fill.

3. RESEARCH METHODOLOGY

3.1 Study Area

The study is located in Bastar district, situated in the southern part of Chhattisgarh state. Bastar was chosen as the study area for three interlinked reasons. First, the district's demographic composition, with tribal communities constituting close to seventy percent of the population, offers social practices and cultural structures, particularly around women's role in household decision-making, that make it well suited to examining how gender interacts with scheme access (Office of the Registrar General & Census Commissioner, India, 2011). Second, Bastar's extensive forest cover provides an abundant and diverse base of Minor Forest Produce, which makes it a natural setting for assessing the real-world effectiveness of a value-addition-oriented scheme such as the VDVY. Third, the district's geographical and administrative remoteness, several of its interior blocks remain difficult to access during the monsoon, creates precisely the kind of implementation friction, in terms of last-mile service delivery, that this study set out to investigate through its third hypothesis on distance and access difficulty.

3.2 Research Design

The study follows a mixed-method research design that combines a structured quantitative survey with qualitative inputs obtained through focus group discussions and interviews with Van Dhan Vikas Kendra officials. The quantitative component forms the basis of the statistical analysis presented in Section 4, while the qualitative component was used to contextualise and cross-verify the survey findings, particularly the nature of "frequent," "occasional," and "rare" access difficulties reported under the third hypothesis.

3.3 Sampling: Criteria and Sample Size

A stratified sampling method was adopted to ensure that the sample reflected the socio-economic and cultural diversity present within Bastar's tribal population. A total of 100 VDVY beneficiaries were selected from four localities within the district, Dhuragaon, Aasna, Bakawand, and Ghotia, chosen to capture variation between rural and semi-urban settlements and thereby allow the study to examine disparities in access between more and less connected areas. The sample was further distributed across different castes, income groups, and educational backgrounds, so as to provide a basis for the disaggregated analysis of access reported in Hypothesis 2. The distribution of the sample across the four localities is shown in Table 1.

Table 1. Sample Distribution across Study Localities

Locality	Number of Beneficiaries	Percentage of Sample
Dhuragaon	18	18%
Aasna	25	25%
Bakawand	23	23%
Ghotia	34	34%
Total	100	100%

Primary data were collected through structured questionnaires administered directly to beneficiaries, supplemented by focus group discussions and semi-structured interviews with officials associated with the Van Dhan Vikas Kendras in the sampled localities. The questionnaire captured information on household income before and after participation in the scheme, educational status, gender, village connectivity, number of days of employment generated under the scheme annually, distance from the nearest Kendra, and the frequency with which respondents encountered difficulties in accessing scheme services.

3.4 Research Objectives

The study was guided by three specific objectives:

1. To examine the impact of the Van Dhan Vikas Yojana on the income of tribal households in Bastar district.
2. To study the influence of socio-economic factors, namely education, gender, location, and continuity of employment, on beneficiaries' access to the benefits of the scheme.
3. To suggest policy measures for improving the effectiveness, reach, and resilience of the scheme.

3.5 Research Hypotheses

Corresponding to these objectives, the study tests three null hypotheses against their respective alternative hypotheses:

H0(1): Van Dhan Vikas Yojana has no significant impact on tribal income levels.

H1(1): Van Dhan Vikas Yojana has significantly improved tribal income levels.

H0(2): Socio-economic factors do not significantly influence access to Van Dhan Vikas Yojana benefits.

H1(2): Socio-economic factors significantly influence access to Van Dhan Vikas Yojana benefits.

H0(3): There is no significant association between distance to the Van Dhan Vikas Kendra and the frequency of access difficulties faced by beneficiaries.

H1(3): There is a significant association between distance to the Van Dhan Vikas Kendra and the frequency of access difficulties faced by beneficiaries.

3.6 Tools of Analysis

Given that all three hypotheses concern the association between categorical variables, income category before and after the scheme, access status against socio-economic category, and difficulty frequency against distance category, the Pearson Chi-square (χ^2) test of independence was used as the principal statistical tool. For each hypothesis, observed frequencies (O) were compared against frequencies that would be expected (E) if the two variables under study were statistically independent, calculated as $E = (\text{row total} \times \text{column total}) / \text{grand total}$. The test statistic was computed as $\chi^2 = \sum (O - E)^2 / E$, and the resulting value was compared against the critical value of χ^2 at the five percent level of significance for the relevant degrees of freedom to arrive at a decision on each hypothesis. This approach is well suited to survey data of the kind collected here, where variables are naturally organised into categories (income bands, yes/no access, distance bands) rather than continuous measurements, and it allows the strength of association between variables to be assessed with a formally defensible statistical criterion rather than through descriptive comparison of percentages alone.

4. DATA ANALYSIS AND INTERPRETATION

4.1 Hypothesis 1: Impact of Van Dhan Vikas Yojana on Tribal Income

The first hypothesis examines whether participation in the VDVY has produced a measurable shift in the income distribution of beneficiary households. Respondents were asked to classify their household income, both for the period before they became associated with the scheme and for the current period following participation, into three bands: below ₹5,000 per month, between ₹5,000 and ₹10,000, and above ₹10,000. Table 2 presents the resulting distribution.

Table 2. Impact of Van Dhan Vikas Yojana on Income of Beneficiaries

Income Indicator	Pre-VDVY (%)	Post-VDVY (%)	Total (n)	Change (percentage points)
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Below ₹5,000 per month	58	23	81	–35
₹5,000 – ₹10,000 per month	24	48	72	+24
Above ₹10,000 per month	18	29	47	+11
Total	100	100	200	—

Source: Field survey conducted among Van Dhan Vikas Yojana beneficiaries in Bastar district.

Before their association with the scheme, 58 percent of the sampled households reported a monthly income below ₹5,000, a level indicative of pronounced income vulnerability among tribal MFP-gathering households. Following participation in the scheme, this proportion fell sharply to 23 percent, a decline of 35 percentage points. Correspondingly, the share of beneficiaries in the middle-income band of ₹5,000 to ₹10,000 rose from 24 percent to 48 percent, and the share earnings above ₹10,000 rose from 18 percent to 29 percent. Read together, these three movements describe a broadly consistent upward shift: roughly a third of the sample that would previously have been classified as low-income moved into the middle- or upper-income bands after engaging with Van Dhan Vikas Kendra activities. This pattern is consistent with the scheme's design logic of enabling tribal gatherers to retain a larger share of the value added to MFP through processing, grading, and direct marketing, rather than surrendering that value to intermediaries at the point of first sale, a constraint that Kerketta (2023) identified as the principal reason for depressed tribal earnings from produce such as tamarind.

To determine whether this apparent shift is statistically significant, or whether it could plausibly have arisen from sampling variation alone, a Chi-square test of independence was applied to the pre- and post-scheme income distributions. Table 3 presents the observed and expected frequencies together with each cell's contribution to the test statistic.

Table 3. Chi-Square Test for Income Levels Before and After the Van Dhan Vikas Yojana

Income Category	Observed (O)	Expected (E)	(O – E) ² / E
Pre-VDVY: Below ₹5,000	58	40.5	7.56
Post-VDVY: Below ₹5,000	23	40.5	7.56
Pre-VDVY: ₹5,000–10,000	24	36.0	4.00
Post-VDVY: ₹5,000–10,000	48	36.0	4.00
Pre-VDVY: Above ₹10,000	18	23.5	1.29
Post-VDVY: Above ₹10,000	29	23.5	1.29
Calculated χ^2			25.70

Calculated χ^2	df	Critical χ^2 (5%)	Decision
25.70	2	5.991	H0 rejected; H1 accepted

The calculated χ^2 value of 25.70, against a critical value of 5.991 at two degrees of freedom and the five percent level of significance, comfortably exceeds the threshold required for statistical significance. The null hypothesis, H0(1), that the Van Dhan Vikas Yojana has no significant impact

on tribal income levels, is therefore rejected, and the alternative hypothesis, that the scheme has significantly improved tribal income levels, is accepted. This finding provides quantitative confirmation of the pattern already visible in the descriptive figures: the change in the income profile of beneficiaries between the pre- and post-scheme periods is too large to be attributed to chance, and can reasonably be attributed to the intervention itself, operating through the channels of value addition, market linkage, and reduced dependence on intermediaries that the scheme is designed to activate.

4.2 Hypothesis 2: Socio-Economic Factors and Access to Van Dhan Vikas Yojana Benefits

While the first hypothesis establishes that the scheme has had an aggregate positive effect on income, it does not indicate whether this benefit has been distributed evenly across different sections of the tribal population. The second hypothesis therefore examines whether four socio-economic characteristics, education, gender, location, and continuity of employment under the scheme, are associated with a beneficiary's likelihood of accessing scheme benefits. Table 4 reports, for each characteristic, the number of respondents in each category and the percentage reporting access to scheme benefits.

Table 4. Socio-Economic Factors and Access to Van Dhan Vikas Yojana Benefits

Indicator	Category	Respondents (n)	Access to Yojana (%)
Education	Literate	43	80
	Illiterate	57	40
Gender	Male	51	54
	Female	49	72
Location	Semi-connected villages	55	76
	Remote villages	45	38
Employment days under VDVY	Above 120 days/year	61	82
	Below 120 days/year	39	46

Source: Field survey conducted among Van Dhan Vikas Yojana beneficiaries in Bastar district.

The pattern that emerges from Table 4 is one of uneven, though not uniformly gendered, access. Among literate respondents, 80 percent reported access to scheme benefits, compared with only 40 percent among illiterate respondents, a gap of a full forty percentage points that points to the continuing importance of documentation and communication literacy in navigating the scheme's enrolment and procurement processes, a concern that Lingireddy et al. (2022) also raised in their study of VDVK awareness among tribal farmers in Andhra Pradesh. On gender, access was in fact somewhat higher among female respondents (72 percent) than among male respondents (54 percent), which runs counter to the conventional assumption that women face categorically greater barriers to accessing welfare schemes; a plausible explanation, consistent with the design of the VDVY, is that Van Dhan Self-Help Groups are frequently women-led or women-majority in composition, and that women's more direct and continuous involvement in MFP collection and primary processing activities translates into correspondingly higher reported access. Location proved to be a decisive factor: respondents from semi-connected villages reported 76 percent access, compared with 38 percent among those from remote villages, exactly double, reflecting the practical difficulty of reaching Kendra facilities, training sessions, and procurement points from more isolated settlements. Finally, respondents who were engaged for more than 120 days of scheme-related employment annually reported 82 percent access, against 46 percent among those

engaged for fewer than 120 days, indicating that sustained participation itself reinforces further access, a virtuous cycle in which continued engagement builds familiarity with procedures and strengthens ties with the local Kendra.

To test whether each of these associations is statistically significant, four separate two-by-two Chi-square tests were conducted, one for each socio-economic variable against access status. Table 5 summarises the results.

Table 5. Chi-Square Test Results for Socio-Economic Factors and Access to VDVY Benefits

Table 5a. Observed and Expected Frequencies for Access by Socio-Economic Category

Category	Access = Yes (O)	Access = Yes (E)	Access = No (O)	Access = No (E)
Literate	34	24.51	9	18.49
Illiterate	23	32.49	34	24.51
Male	28	32.13	23	18.87
Female	35	30.87	14	18.13
Semi-connected village	42	32.45	13	22.55
Remote village	17	26.55	28	18.45
Above 120 days/year	50	41.48	11	19.52
Below 120 days/year	18	26.52	21	12.48

Table 5b. Chi-Square Test Summary for Socio-Economic Factors and Access

Variable	χ^2 Value	df	Critical Value (5%)	Decision
Education vs. Access	14.98	1	3.84	H0 rejected
Gender vs. Access	2.92	1	3.84	H0 accepted
Location vs. Access	15.25	1	3.84	H0 rejected
Employment days vs. Access	14.03	1	3.84	H0 rejected

Three of the four variables tested, education, location, and continuity of employment, yield χ^2 values that comfortably exceed their respective critical values of 3.84 at one degree of freedom, leading to rejection of the null hypothesis in each case. Gender, by contrast, produces a χ^2 value of 2.92, which falls short of the critical value, so that the null hypothesis of no association between gender and access cannot be rejected at the five percent level. Taken together, these results indicate that H0(2) is rejected for education, location, and employment continuity, while it is retained for gender: socio-economic factors do significantly influence access to VDVY benefits, but the specific factor that matters most is not gender but literacy, rural connectivity, and the duration of a beneficiary's engagement with the scheme. This nuanced finding is important for policy design, since it suggests that interventions targeted narrowly at gender inclusion, while valuable in their own right, will not by themselves close the access gaps that the data reveal; the larger gaps lie along the lines of literacy and geography.

4.3 Hypothesis 3: Distance to Van Dhan Vikas Kendra and Frequency of Access Difficulties

The third hypothesis narrows the focus specifically to the question of physical distance from the Kendra, examining whether beneficiaries located farther from a VDVK report a higher frequency of difficulties in accessing scheme services than those located nearer to one. Respondents were classified into two distance bands, near (10 kilometres or less) and far (more than 10 kilometres), and asked to characterise the frequency with which they encountered difficulties as frequent, occasional, or rare. Table 6 presents the cross-tabulation.

Table 6. Distance to Van Dhan Vikas Kendra and Frequency of Access Difficulties

Distance to VDVK	Frequent Difficulties	Occasional Difficulties	Rare Difficulties	Total
Near (≤ 10 km)	10	20	20	50
Far (> 10 km)	30	15	5	50
Total	40	35	25	100

Source: Field survey conducted among Van Dhan Vikas Yojana beneficiaries in Bastar district.

The distribution is strikingly asymmetric. Among beneficiaries located near a Kendra, only 10 out of 50 reported frequent difficulties, while 20 reported rare difficulties. Among those located farther away, the pattern reverses almost completely: 30 out of 50 reported frequent difficulties, while only 5 reported rare difficulties. In this context, frequent difficulties refer to recurring problems such as long travel distances, inadequate transportation, delayed procurement and payments, lack of timely information, and the need for repeated visits to the Kendra; occasional difficulties cover temporary delays, seasonal transport disruptions, or irregular availability of training and services; and rare difficulties describe a situation of largely smooth access, supported by good connectivity, timely information flow, and prompt payment.

Table 7. Chi-Square Test for Distance to VDVK and Frequency of Access Difficulties

Category	Observed (O)	Expected (E)	$(O - E)^2 / E$
Near – Frequent	10	20.0	5.00
Near – Occasional	20	17.5	0.36
Near – Rare	20	12.5	4.50
Far – Frequent	30	20.0	5.00
Far – Occasional	15	17.5	0.36
Far – Rare	5	12.5	4.50
Calculated χ^2			19.72
Calculated χ^2	df	Critical χ^2 (5%)	Decision
19.72	2	5.991	H0 rejected; H1 accepted

The calculated χ^2 value of 19.72, against a critical value of 5.991 at two degrees of freedom, again comfortably exceeds the significance threshold, leading to rejection of H0(3) and acceptance of the alternative hypothesis that a significant association exists between distance to the Kendra and the frequency of access difficulties reported. This result confirms, in statistically rigorous terms, what the qualitative interviews conducted alongside the survey also suggested: beneficiaries residing farther from the Van Dhan Vikas Kendra face materially greater obstacles in realising the

scheme's benefits, arising primarily from poor transport connectivity and consequent delays in service delivery, and geographical distance therefore acts as an independent constraint on the effectiveness of the scheme, over and above the socio-economic factors examined under Hypothesis 2.

5. DISCUSSION OF FINDINGS

The three hypotheses tested in this study, taken together, paint a picture of a scheme that is achieving its central economic objective while falling short of full inclusiveness in its delivery. The rejection of H0(1) confirms that the Van Dhan Vikas Yojana has produced a statistically significant improvement in the income position of tribal beneficiaries in Bastar, with the proportion of households in the lowest income band nearly halving and corresponding gains recorded in the middle and upper bands. This finding lends empirical support to the scheme's underlying theory of change, namely that organising gatherers into Self-Help Groups and enabling them to undertake primary processing and direct marketing allows a larger share of the value of MFP to be retained within tribal households rather than being captured by intermediaries, precisely the dynamic that Kerketta (2023) found to be absent in the unorganised tamarind trade in Jharkhand.

At the same time, the results for Hypothesis 2 complicate a purely celebratory reading of the scheme's performance. Access to benefits is not distributed evenly: it is significantly shaped by literacy, by the connectivity of a beneficiary's village, and by the continuity of their engagement with the scheme, even though it is not significantly shaped by gender. This finding is broadly consistent with Borah's (2022) observation, in the context of financial inclusion through PMJDY, that formal inclusion in a scheme does not automatically translate into equal capacity to benefit from it; literacy and procedural familiarity continue to mediate outcomes even after formal access barriers are removed. It also echoes Lingireddy et al.'s (2022) finding that weak awareness and communication, rather than any formal exclusion, constrain tribal farmers' engagement with VDVK activities in Andhra Pradesh. The comparatively favourable position of female respondents in the Bastar sample, meanwhile, is a genuinely encouraging finding, and suggests that the women-centred structure of many Van Dhan Self-Help Groups is functioning as intended in this district, though this pattern should not be read as evidence that gender-focused interventions are unnecessary; rather, it indicates that the specific access barriers to be addressed in Bastar are literacy and connectivity rather than gender per se.

The finding on Hypothesis 3, that distance from the Kendra is strongly associated with the frequency of access difficulties, reinforces and sharpens the location effect already visible under Hypothesis 2. Distance functions here as a compound barrier: it is not simply that remote villages have, on average, lower literacy or weaker institutional exposure, but that the physical act of reaching a Kendra, for training, for delivering produce, or for collecting payment, becomes progressively more burdensome as distance increases, with knock-on effects for procurement delays and information flow. This is consistent with Balkrishna et al.'s (2022) observation that inadequate market access, alongside insufficient technical training, remains one of the central constraints on the effectiveness of Van Dhan-based tribal entrepreneurship, and with Mehta and Bhavsar's (2023) broader point that the durability of Self-Help Group-based enterprises depends on consistent institutional support, which is harder to sustain where physical access to the supporting institution is itself difficult.

Read together, the three results suggest that the VDVY in Bastar is best understood not as a uniformly successful or uniformly deficient intervention, but as a scheme whose economic logic is sound and empirically validated, while its delivery architecture, specifically the density and accessibility of the Kendra network, and the degree to which enrolment and procurement procedures accommodate low-literacy beneficiaries, requires strengthening if the income gains demonstrated under Hypothesis 1 are to be extended to the more remote and less literate segments of the tribal population that current data show to be comparatively underserved.

6. POLICY IMPLICATIONS

The findings of this study point toward several specific and actionable policy directions for strengthening the effectiveness and reach of the Van Dhan Vikas Yojana in Bastar and in comparable tribal districts.

First, given the strong and statistically confirmed relationship between literacy and access to benefits, there is a clear case for investing in sustained financial and procedural literacy campaigns targeted specifically at illiterate and semi-literate beneficiaries, delivered through local languages, community radio, and peer-to-peer training by literate Self-Help Group members, rather than relying on written material alone. Simplifying enrolment and procurement documentation, or providing dedicated facilitation support at the Kendra level for beneficiaries who cannot navigate paperwork independently, would directly address the forty-percentage-point access gap identified between literate and illiterate respondents.

Second, the strong distance effect identified under Hypothesis 3 suggests that the geographical density of the Kendra network in Bastar requires review. Establishing satellite collection and training points in more remote clusters, linked to a central Kendra, or deploying periodic mobile procurement and training units on a fixed schedule, could substantially reduce the travel burden that currently drives the sharp difference in reported access difficulties between near and far beneficiaries, without requiring the establishment of a full Kendra in every remote settlement.

Third, although gender was not found to be a statistically significant barrier to access in this sample, the comparatively favourable position of women beneficiaries should be actively protected and extended rather than taken for granted, including through continued support for women-led Van Dhan Self-Help Groups and attention to the specific mobility and time constraints that women in tribal households may face, so that the current pattern is sustained as the scheme scales up.

Fourth, the finding that continuity of employment under the scheme, more than 120 days annually, is strongly associated with better access suggests that the scheme should place greater emphasis on year-round engagement rather than seasonal participation alone. This could be achieved by diversifying the range of MFP items processed at a given Kendra across different collection seasons, so that beneficiaries have income-generating activity available for a larger part of the year, reducing the gaps in engagement that appear to weaken familiarity with and access to scheme procedures.

Finally, strengthening market linkage and transportation infrastructure connecting Van Dhan Vikas Kendras to larger regional and national markets remains essential for translating the value addition undertaken at the Kendra level into sustained income gains, a concern raised in similar terms by both Kerketta (2023) and Balkrishna et al. (2022) in their respective studies, and one that the present findings on income improvement (Hypothesis 1) suggest is already yielding results in Bastar, but which requires continued investment if those gains are to be deepened and extended to a wider base of beneficiaries.

7. LIMITATIONS OF THE STUDY

As with any field-based survey research, the findings of this study are subject to certain limitations that should be kept in mind when interpreting the results. The sample of 100 beneficiaries, drawn from four localities within a single district, provides a statistically workable basis for the Chi-square tests conducted here but cannot be assumed to represent the full diversity of conditions across Bastar district, let alone the wider tribal belt of Chhattisgarh or central India more broadly. Income data were collected through respondent recall of pre-scheme earnings, which, in the absence of independent income records for informal MFP-based livelihoods, is subject to the general limitations of self-reported retrospective data. The cross-sectional design of the survey captures a single point-in-time comparison of before-and-after conditions rather than tracking the same households over multiple years, so that the study cannot fully rule out the influence of other

concurrent changes, such as general improvements in rural infrastructure or market prices for MFP, on the income shifts observed. Future research employing a longitudinal panel design, tracking the same beneficiary households over several years and across a larger and more geographically dispersed sample, would be well placed to build on the cross-sectional findings presented here.

8. CONCLUSION

This study set out to assess the socio-economic impact of the Van Dhan Vikas Yojana on tribal livelihood in Bastar district, using primary survey data from 100 beneficiaries and formal hypothesis testing to move beyond descriptive impressions toward statistically grounded conclusions. The evidence gathered here indicates that the institutional framework built around Van Dhan Vikas Kendras and Self-Help Groups has produced a significant and measurable improvement in the income position of tribal beneficiaries, consistent with the scheme's underlying objective of shifting value capture in the MFP trade away from intermediaries and toward primary collectors themselves. At the same time, the benefits of the scheme are not distributed evenly: access is significantly shaped by literacy, by village connectivity, and by the continuity of a beneficiary's engagement with Kendra activities, and is further constrained by physical distance from the nearest Kendra, even though gender does not emerge as a statistically significant barrier in this particular sample.

It is also worth situating these findings within the broader trajectory of the scheme since its launch in 2018. The COVID-19 pandemic represented a significant stress test for the Van Dhan Vikas Yojana nationally: disrupted supply chains, market access restrictions, and mobility constraints during successive lockdowns affected procurement operations, value-addition activities, and distribution channels, leaving several Kendras functioning below capacity and temporarily reducing income-generation opportunities for tribal beneficiaries. Inadequate digital infrastructure and delayed procurement further limited the scheme's resilience during this period. That the income gains documented in the present study nonetheless emerge clearly in the post-pandemic data suggests a degree of underlying institutional recovery and resilience in Bastar's Van Dhan network, even as the pandemic period exposed specific vulnerabilities, particularly around digital readiness and emergency response capacity, that future scheme design should address.

Overall, the Van Dhan Vikas Yojana offers a genuinely viable and largely inclusive approach to tribal development, grounded in community ownership, value addition, and market linkage, and the evidence from Bastar confirms that this approach is delivering real income benefits to tribal households. Its reduced effectiveness during periods of large-scale disruption, and the access disparities that persist along the lines of literacy, connectivity, and distance even in normal times, point to the specific areas where reinforcement is most needed. Strengthened logistical infrastructure, deeper capacity-building for low-literacy beneficiaries, improved digital integration, more diversified and multi-seasonal market linkages, and the embedding of crisis-responsive support mechanisms within the scheme's design would together enhance its robustness and help ensure that the sustainable socio-economic upliftment it has already begun to deliver in districts such as Bastar reaches the full breadth of the tribal population it is intended to serve.

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