EPH-International Journal of Business & Management Science

THE ROLE OF DIRECT BENEFIT TRANSFER IN PROMOTING FINANCIAL INCLUSION IN VIDARBHA

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Article History

Received: 2026-03-25
Revised : 2026-05-02
Accepted : 2026-05-15
Published: 2026-05-25

Abstract

Direct Benefit Transfer has emerged as an important tool of welfare delivery in India as it can transfer government welfare directly to the bank accounts of beneficiaries. In addition to increasing transparency of welfare distribution, DBT has been linked to more people engaging with formal financial services. This study focuses on the DBT's contribution towards financial inclusion of the beneficiaries in the Vidarbha region of Maharashtra. The study employs descriptive quantitative research with primary survey data from 400 beneficiaries of the DBT and secondary data of the DBT fund transfers and transactions volume from 2019-2020 to 2023-2024. Descriptive statistics, paired sample t-tests, chi-square tests, one-sample t-tests and effect size interpretation are used to analyze the data. The findings reveal that average annual income and average savings rose significantly. The paired sample t-test results show that there were statistically significant differences between the income and savings before and after DBT. There was also high level of consensus among the beneficiaries that DBT contributed favourably to the financial security and utilization of banking services. No significant associations were found between occupation and self-reported financial stability or financial services use, indicating that DBT financial inclusion outcomes were experienced across occupational groups. In conclusion, the study found that DBT can play a role in promoting financial inclusion in Vidarbha by enhancing the engagement of beneficiaries with the banking sector, their perception of financial stability and their savings habits among the rural and semi-urban beneficiaries.

Keywords: *Direct Benefit Transfer; Financial Inclusion; Banking Usage; Rural Finance; Welfare Transfers; DBT Beneficiaries; Vidarbha*

Vol. 12 Issue 2s (May, 2026)
ISSN: 2208-2190 Pages- 455-471
DOI: https://doi.org/10.69980/27pfd889

1. Introduction

One of India's significant welfare delivery reforms is Direct Benefit Transfer (DBT). It was launched to directly transfer subsidies, benefits and welfare payments into the bank accounts of those who are eligible. The aim of the system was to cut out intermediaries, increase transparency, reduce duplication and increase public expenditure accountability. It was officially launched in 2013 and has since been expanded to many of the central and state-level schemes like pensions, scholarships, payments related to employment, agricultural support, subsidy for LPG and other social welfare schemes (India Data Portal, 2026; Direct Benefit Transfer Mission, 2026). DBT has introduced a different paradigm of the welfare-giving and formal financial access, by tying welfare to bank accounts.

The adoption of DBT has been strongly linked to India's digital public infrastructure, such as the Jan Dhan-Aadhaar-Mobile (JAM) framework. Jan Dhan expanded products and services of the basic banking system, Aadhaar facilitated identification of beneficiaries, while mobile connectivity facilitated communication and information regarding transactions. Pradhan Mantri Jan Dhan Yojana has been a key role in improving the banking access to unbanked and underbanked households. Official statistics indicate that Jan Dhan accounts are significantly skewed towards rural and semi-urban population segments, thus making them particularly relevant to financial inclusion for welfare purposes (Department of Financial Services, 2026). The institutional linkage is significant because financial inclusion is more about having bank accounts than it is about financial inclusion. It also demands frequent access to accounts, trust in formal financial institutions, access to payment systems and secure saving, withdrawing and receiving.

Although financial inclusion has made significant strides in India in the past decade, there are issues related to accessibility, usage of accounts, digital literacy, and trust in transactions. However, the Global Findex 2021 country brief for India reported that although the number of accounts rose early on due to public policies, a considerable proportion of accounts were not used, suggesting that emphasis should instead be placed on meaningful use. Access, usage, quality, financial literacy, and consumer protection are also being highlighted as key elements of sustainable financial inclusion (Reserve Bank of India, 2021) in the National Strategy for Financial Inclusion 2019-2024 of the Reserve Bank of India. DBT can be a bridge between delivering welfare and actively engaging in formal financial services in this context because beneficiaries need to engage with bank accounts to receive and access welfare payments.

Financial inclusion is particularly relevant in rural and semi-urban areas where livelihoods may rely on agricultural activities, informal economy, and irregular income generation. Regular or periodic welfare transfers can help stabilize income, foster savings habits, and boost beneficiary engagement with ATMs, banks, business correspondents and digital payment systems. This applies especially for the economically weaker families, farmers, agricultural labourers, women beneficiaries and low income groups. The development potential of DBT that is not directly related to reforming welfare delivery is that it could improve financial behaviour and financial formalisation of historically marginalised groups.

An example of this relationship is seen at the regional level in Vidarbha. The region has a high rural population dependency and the agriculture and allied livelihoods play a significant role in the economy. Welfare transfers in these areas can provide income support, consumption smoothing, access to formal financial markets and other services to beneficiaries. The existing manuscript data show that the study is conducted in selected districts in Vidarbha and comprises of primary survey evidence and secondary survey of the DBT transfer trends. The combination of data sources enables the study to link more broadly to patterns of DBT transactions and outcomes at the beneficiary level, such as income, savings, financial stability, and the use of financial services.

In this backdrop, the current study focuses on how DBT contributes to financial inclusion of the beneficiaries in Vidarbha. It presents secondary information about DBT funds transfers and transaction volumes 2019-2020 to 2023-2024 and primary survey data from 400 DBT beneficiaries. The study aims to address two questions: 1) Do income and savings differ before and after DBT? 2) Do beneficiaries see DBT as enhancing financial stability and/or the use of banking services and, if so, do there are differences among occupational groups? The

Vol. 12 Issue 2s (May, 2026)
ISSN: 2208-2190 Pages- 455-471
DOI: https://doi.org/10.69980/27pfd889
study also provides inputs to the debate on DBT as a welfare transfer mechanism and also as a tool to be used to increase financial inclusion in rural and semi-urban India.

1.1 Objectives of the Study

The study is guided by the following objectives:

1. To understand the contribution of DBT in financial inclusion of the beneficiaries in Vidarbha area.
2. To analyse the income and savings status of beneficiaries before and after DBT.
3. To evaluate beneficiaries' sense of DBT contributing to their financial stability.
4. To explore if DBT has facilitated formal banking services for beneficiaries.
5. To determine if there is an association between occupation and perceived financial stability and banking services use and among DBT beneficiaries.
6. To analyse secondary trends in DBT fund transfers and DBT transactions in Vidarbha region between the year 2019-2020 and 2023-2024.
7. To analyse secondary trends in DBT fund transfers and DBT transactions in the Vidarbha region from 2019-2020 to 2023-2024.

2. Literature Review

2.1 Direct Benefit Transfer and Welfare Delivery

DBT has emerged as a significant instrument for welfare delivery in India. It was launched to enhance the efficiency, transparency and accountability of public benefit transfers, by moving subsidies and welfare payments straight into beneficiaries' bank accounts. This approach, enabled by the DBT framework, minimizes reliance on intermediaries, and allows for targeted delivery via digital identity, bank accounts, and mobile communication. This framework is very similar to the Jan Dhan-Aadhaar-Mobile architecture that links financial access with the identification of the beneficiary and a digital payment capability (Direct Benefit Transfer Mission, 2026; Digital India, 2026) in India. This allows DBT to work as a welfare distributional channel and financial inclusion channel.

Most of the literature on DBT has focused on its ability to cut leakages, enhance transparency, and bolster welfare administration. While tech exclusion and digital literacy were still a key challenge for rural beneficiaries, Joy (2018) suggested that DBT has contributed to more effective welfare scheme delivery by cutting intermediaries and holding them more accountable. Similarly, Kumar and Bharti (2023) highlighted that DBT helped enhance transparency and financial efficiency in India's financial sector, while geographical disparities in digital infrastructure impacted the user experience. These arguments apply to rural and semi-urban areas like Vidarbha, where banking and digital transaction services may not be accessible to everyone.

There is recent evidence, too, to suggest that DBT can help to enhance the effectiveness of public programmes. Barnwal (2024) has observed in his study on the DBT policy in India, that the direct benefit transfer (DBT) approach can help reduce leakage in public programme by altering the delivery channels of subsidies to the beneficiaries. This reinforces the claim that DBT provides more than just the transfer of money. But the success of DBT is reliant on beneficiary identification, linkage of accounts, access to banking facilities and grievance redressal. Thus, the impact of DBT should be measured not just in terms of the number of transfers, but also in terms of outcomes for the beneficiaries themselves, like financial stability, and use of and savings behaviour.

2.2 Financial Inclusion and Banking Usage

The financial inclusion means access to and utilization of formal financial services by all members of society, including vulnerable and low-income groups. The financial inclusion initiatives in India have been strong and supported by the government policies like Pradhan Mantri Jan Dhan Yojana, Aadhaar enabled payments, DBT, and digital payment systems. The PMJDY has enhanced access to bank accounts, particularly in rural and semi-urban areas (Department of Financial Services, 2026). But, financial inclusion is not limited to financial

Vol. 12 Issue 2s (May, 2026)
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account ownership. It also covers routine account use, savings, account withdrawals, access to credit, adoption of digital payments and confidence in formal finance institutions.
The Global Findex evidence for India indicates that public financial inclusion efforts had a significant impact on increasing the rate of account ownership, but that the rate of account inactivity was a concern. Financial inclusion in DBT is a key concept in financial inclusion (World Bank, 2022), distinguishing between access and usage. A bank account is more meaningful when it is used to receive benefits, withdraw money, save money, make payments or to access formal banking services by beneficiaries. DBT could potentially be used to transform a non-use or under-used account into a financial account by generating cyclical transactions per account.
Financial inclusion is also measured as access, use, quality, financial literacy and consumer protection as per the National Strategy for Financial Inclusion 2019-2024 of RBI (Reserve Bank of India, 2021). The framework is also relevant to the current study as beneficiaries of DBT can be included in the financial system not only when they open an account in a financial institution but because of their repeated encounter with financial institutions and payment systems. Similarly, Bano (2025) noted the use of formal financial inclusion through the connection of welfare benefits to bank accounts of beneficiaries. Such research has confirmed the financial inclusion value of DBT, but further regional evidence is needed to gain a better understanding of the impact of DBT on financial behaviour in rural and semi-urban areas.

2.3 DBT, Income Stability, Savings, and Household Welfare

The role of DBT in income support, savings, and household welfare is one way it can impact financial inclusion. While welfare transfers do not necessarily change the income structure in the long term, there is potential for short-term assistance for households that rely on agriculture, informal labour and low or irregular incomes. Direct cash transfers can have a positive effect on short term liquidity and alleviate informality borrowing for economically weaker beneficiaries. The impact might be more pronounced in cases where transfers are deposited directly into the recipients' bank accounts and the beneficiaries must engage with formal financial institutions.
The current state of evidence in this manuscript indicates that the study does a comparison of income and savings before and after DBT. This is the reason that income saving channel is central to the article. This framing is supported by the literature, as financial inclusion is frequently associated with savings and income management capabilities and financial resilience. Financial inclusion can make poor households more resilient, as it can increase access to formal financial institutions, was Swamy (2019) to suggest. Similarly, Mia et al. (2019) demonstrated that financial inclusiveness and financial deepening is important for development outcomes, especially when low-income groups are heavily dependent on microfinance and other financial channels. While these studies do not explicitly focus on DBT, they convey a general message that formal financial access can boost household financial behaviour.
Dash and Mohanta (2024) have observed that trust, financial awareness and access to appropriate financial services are determinants of inclusive financial behavior of the rural households in India. Their findings are significant for the current study since they move the discussion from the financial access to the financial behaviour. DBT can play a role in this behavioural aspect by having beneficiaries access their bank accounts more often, gaining faith in formal transfers, and linking these banking avenues with financial security. DBT can therefore be understood as an instrument of linking between welfare receipt and active financial inclusion.

2.4 Rural and Regional Dimensions of Financial Inclusion

Socio-economic conditions in the rural areas need to be addressed in order to ensure financial inclusion. Financial literacy issues, the distance from bank branches, the need to use cash payments, irregular income, and poor access to digital services can be a problem in rural and semi-urban areas. These restrictions place limits on how effective bank accounts and DBT

Vol. 12 Issue 2s (May, 2026)
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transfers can be as a measure of financial inclusion. So, regional studies are relevant, as indicators at the national level may not reflect the diversity of experience at the local level.
Vidarbha is a pertinent region for the study of financial inclusion amongst the DBT-linked ones as it is home to a large rural population and a significant number of households relying on agriculture, agricultural labour and small-scale economic activities. For these families, welfare payments could be a crucial part of their income, as income may be intermittent and unpredictable. The present manuscript is based on the beneficiaries of DBT in the selected districts of Vidarbha which comprises of occupational groups like farmers, agricultural labourers, salaried respondents and self-employed respondents. This enables the study to assess whether there are differences in financial stability and banking service utilization perceptions by occupational categories related to DBT.
In their research on financial inclusion under PMMY in Vidarbha, Mahadule and Chib (2025) noted that access to credit and financial awareness is essential for boosting the financial status of women entrepreneurs and income generating ability. Their involvement was in the area of microcredit and not DBT but the regional emphasis would be helpful as it would illustrate the link between financial inclusion and livelihood, awareness and formal financial channels in Vidarbha. This regional discussion is broadened in the present study by examining the income, savings, financial stability and banking patterns of DBT beneficiaries.

2.5 Conceptual Framework

The theoretical underpinning of this research is that DBT can have a significant influence on financial inclusion, either directly or indirectly, via behavior. The direct channel includes direct transfers of welfare benefits to beneficiaries' bank accounts. This is a legal financial agreement and involves bank linked accounts by the beneficiaries. The behavioural channel is triggered when beneficiaries access banking services to withdraw, save, view balances or utilize other financial services. Familiarity, trust, and usage might be strengthened over time as a result of repeated interactions with formal financial systems.
The study's conceptual framework is presented as follows: The regularity of receipt and transfer of DBT aids in the activation of bank accounts and the use of banking services. Greater interactions with banking services can then help to enhance saving habits, financial stability and formal financial services participation. These outcomes all reflect financial inclusion for rural and semi-urban beneficiaries that linked to DBT. This framework does not take for granted causal link because the present study utilizes existing cross-sectional survey data and secondary data. Rather, it offers an analytical framework to explore the relationship between DBT, income, savings, and financial behavior, such as the use of banking services, and the resulting financial stability. Figure 1 shows the conceptual framework adopted for the study.

Vol. 12 Issue 2s (May, 2026)
ISSN: 2208-2190 Pages- 455-471
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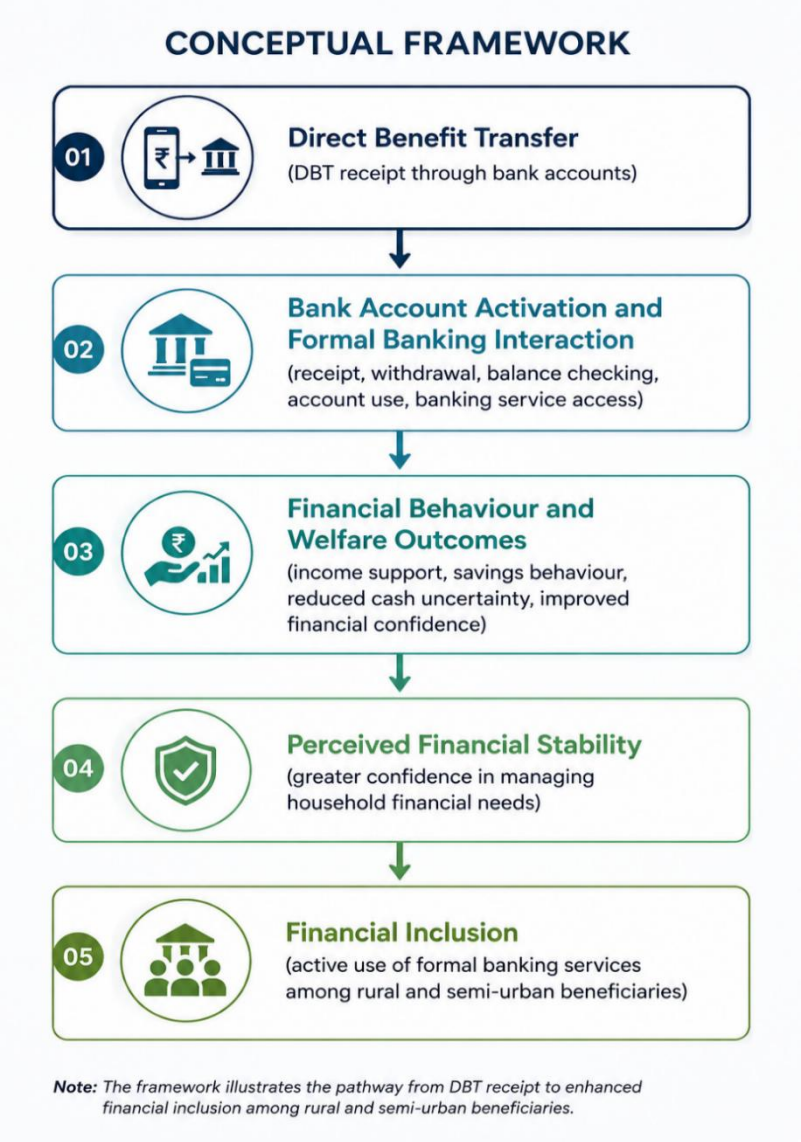

Figure 1. Conceptual Framework of DBT-Linked Financial Inclusion

The approach is in line with the financial inclusion field experience that meaningful financial inclusion requires access and use. It also assists in the choice of variables to be included in the study and the ones to be excluded; it also helps in choosing pre and post variables to be used in the study such as income before and after DBT, savings before and after DBT, perceived financial stability, and banking service usage and occupation-based differences. The study opens up this pathway of access-to-use-stability of welfare delivery and addresses DBT as a potential tool for financial inclusion.

2.6 Research Gap

The literature reviewed indicates that DBT has become a topic of conversation for the delivery, transparency, leakage reduction, and inclusion of welfare. Prior research also demonstrates that financial inclusion needs to be looked at in terms of their financial behaviour and their actual use of financial instruments, not just access to bank accounts. Continuous research is needed, however, that looks at the associations between DBT and financial inclusion outcomes at the beneficiary level, in rural and semi-urban areas.

The present study has tried to fill this gap by focusing on beneficiaries of DBT in Vidarbha. It is a mix of secondary data on DBT transfers and transaction trends, and primary survey evidence from 400 beneficiaries. The study aims to describe if there are differences in income and savings before and after DBT, if DBT is perceived to have improved financial stability, if

Vol. 12 Issue 2s (May, 2026)
ISSN: 2208-2190 Pages- 455-471
DOI: https://doi.org/10.69980/27pfd889
DBT is perceived as increasing the use of banking services, and whether any differences exist across occupational groups. This focus is important as Vidarbha is a predominantly rural and agriculture dependent population and financial access for welfare could be a significant factor in increasing the formal financial involvement. More broadly, the study adds to the body of literature on financial inclusion in the region at the level of both region-level secondary transfer data and beneficiary-level responses to questions about financial inclusion through DBTs.

3. Research Methodology

3.1 Research Design

The study is of descriptive quantitative type research aiming the role of DBT in the financial inclusion of beneficiaries of Vidarbha region in Maharashtra. The design is appropriate given that the study examines measurable differences in income and savings, beneficiary perceptions of financial stability and banking usage, and occupational variations in financial inclusion outcomes related to DBT. The study was not of a qualitative design because there was no manuscript containing interview data, open-ended responses or thematic analysis. As such, this study is considered a quantitative study from primary survey responses and secondary data from DBT.

The descriptive design will enable the study to look at the financial profile of DBT beneficiaries and determine the relationship between DBT and changes in income, savings, banking service use, and perceived financial stability. This design also allows for the use of statistical tests to compare pre-DBT and post-DBT conditions, to analyse relationships between occupational categories and perception-based responses.

3.2 Data Sources

The study is mixed method study using primary and secondary sources. The primary data was collected using a structured questionnaire with 400 DBT beneficiaries from selected districts of Vidarbha region. The questions in the questionnaire included demographic questions, the amount of DBT received, income before and after DBT, savings before and after DBT, financial stability and the use of banking services. Primary data helps to capture the beneficiaries' experience of financial inclusion, linked to DBT.

Secondary data was obtained for 5 financial years between 2019-2020 and 2023-2024 from the India Data Portal. Secondary data comprise of number of DBT transactions in the Vidarbha region districts and fund transfer in DBT. The data is used to provide a context for the results of the survey at the beneficiary level and the overall picture of DBT adoption in the region. Primary and secondary data are used together, augmenting the descriptive scope of the study by being able to link district-level transfer patterns with respondent-level financial inclusion outcomes.

3.3 Study Area and Respondents

The study is based on Vidarbha region of Maharashtra. The study is relevant in Vidarbha due to the large rural as well as semi-urban population, where huge number of households rely on agricultural activity, agricultural labour, small scale livelihood activities etc. The study respondents consist of the beneficiaries of DBT from various occupational groups such as farmers, agricultural labourers, salaried and self-employed respondents. The occupational diversity facilitated assessment of the differences in perceptions of financial stability and banking service utilization among the livelihoods.

The primary survey covers select districts of Vidarbha. The secondary data, however, relate to the transfers of funds and transactions in the DBT to or from districts in Vidarbha. It matters because the primary data offer evidence on the level of the beneficiaries, whereas the secondary data give a broader regional overview of DBT activity.

3.4 Sampling Method and Sample Size

Sampling is stratified random sampling to ensure even representation of different groups of beneficiaries including farmers, agricultural labourers, salaried respondents and self-

Vol. 12 Issue 2s (May, 2026)
ISSN: 2208-2190 Pages- 455-471
DOI: https://doi.org/10.69980/27pfd889
employed respondents. Stratified sampling is used when subgroups in a population can be identified and the researcher wants to include these subgroups in the sample.
The sample size was calculated using the Cochran sample size formula, as it is not possible to accurately estimate how many beneficiaries are covered by DBT which could also be beneficiaries of other schemes. When the population size is large or unknown, a formula known as Cochran's formula is often used in survey research (Cochran, 1977). The formula is given as follows:
$n_0 = Z^2pq / e^2$
Where:
n_0 = required sample size
Z = 1.96 at the 95% confidence level
p = estimated proportion of the population
q = 1 − p
e = acceptable margin of error
If the proportion of the population is not known, the value p is typically set to 0.5 to ensure the greatest variability in the sample size and to give a conservative estimate of the sample size. If p = 0.5, q = 0.5 and Z = 1.96, then the minimum required sample size is about 384 respondents. The number of respondents used in this study is 400 which is more than the minimum needed and thus is suitable for descriptive and inferential analysis conducted in this study.

3.5 Hypotheses of the Study
A series of null hypotheses are tested in the study:
H01: There is no significant difference between the income of beneficiaries before and after DBT.
H02 is hypothesized to be false.It is hypothesized to be true that there is no significant difference between the savings of beneficiaries before and after DBT.
H04: The financial stability of beneficiaries is not significantly related to their occupation.
H04: Beneficiaries do not significantly agree that DBT has improved their financial stability.
H05: The relationship between beneficiaries' occupation and the use of banking services is not significant.
H06: There is no significant agreement on the part of the beneficiaries that DBT has encouraged the use of banking services.

3.6 Statistical Tools
The analysis of available data is done by descriptive statistics and inferential statistical tests. The summary of the demographic profile of respondents, the amount of DBT received, income before and after DBT, and savings before and after DBT are presented in descriptive statistics. These statistics are used to describe the characteristics of the DBT population and to determine whether any differences in income and savings are observed in the direction of DBT population.
A pre/post paired sample t-test is performed to compare pre and post income and savings with DBT. This test is appropriate because the same set of respondents are compared before and after the intervention (DBT). It is used to check if the difference in income and savings is statistically significant, using the paired sample t-test.
A Chi-square test of independence is used to test if the perceived financial stability and banking service usage are related to occupation. This test is appropriate because both occupation and agreement level data are categorical data. The chi-square test examines if the responses are different in each occupational group.
To assess the significant agreement of beneficiaries with DBT improving financial stability and promoting the usage of banking service, a one sample t-test is used. The Likert-scale answers are contrasted with the neutral code of 3. The method is suitable for determining whether the mean score is significantly higher than neutral if the scale is used for inferential interpretation as if it were approximately interval. The neutral scale can be meaningful in

Vol. 12 Issue 2s (May, 2026)
ISSN: 2208-2190 Pages- 455-471
DOI: https://doi.org/10.69980/27pfd889
Likert-type scales, and the neutral value is a good basis for determining agreement (Kankaraš & Capecchi, 2024).
Other measures of effect size are also provided to aid in the interpretation of statistical results. A statistical significant result does not necessarily reflect the strength of the result. Hence, Cohen's d is given for t-test results and Cramer's V is used for chi-square results. The value of Cramer's V is suitable for estimating the strength of association in contingency tables since it normalizes the chi-square value and considers the size of the contingency table. According to Cohen's effect-size conventions, mean differences and level of agreement (Cohen, 1988) are interpreted as small, medium, or large.
The study lacks regression analysis, factor analysis, and reliability analysis due to limitations in the available manuscript, which only contains summarized statistical results and not the full respondent level data needed for these analyses. Another potential use of respondent-level data will be in the estimation of predictive models and analysis of the impact of various demographic and financial factors on DBT-linked financial inclusion outcomes.

4. Results

4.1 Secondary Data Analysis of DBT Transfers and Transactions

The secondary data analysis involves an examination of fund transfers and volume of DBT transactions in the Vidarbha region during 2019-2020 to 2023-2024. The data is used to visualise the DBT implementation at the regional level, and to give context to the findings from the primary survey at the beneficiary level.

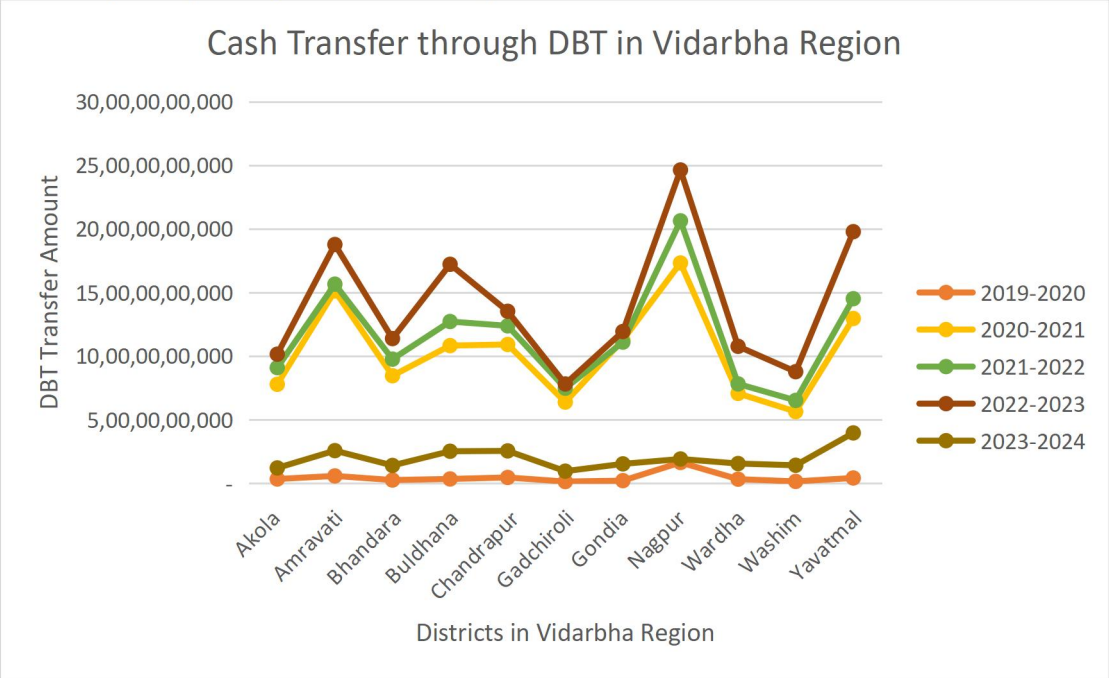

Figure 2. Cash Transfer through DBT in Vidarbha Region, 2019-2020 to 2023-2024

Source: India Data Portal.
The trend of cash transfers through DBT per district in Vidarbha region is given in figure 2. The data reveals that the number of fund transfers from DBT rose significantly in 2020-2021 and continued to be higher in 2021-2022 and 2022-2023. This is the time when the greater use of welfare transfers was observed both during and after COVID-19. The rise indicates that DBT became a key tool to facilitate the transfer of welfare benefits in an era of economic and social turmoil. The reduction in 2023-2024, however, suggests that transfers by DBT could fluctuate based on coverage, fund allocation and policy priorities.

Vol. 12 Issue 2s (May, 2026)
ISSN: 2208-2190 Pages- 455-471
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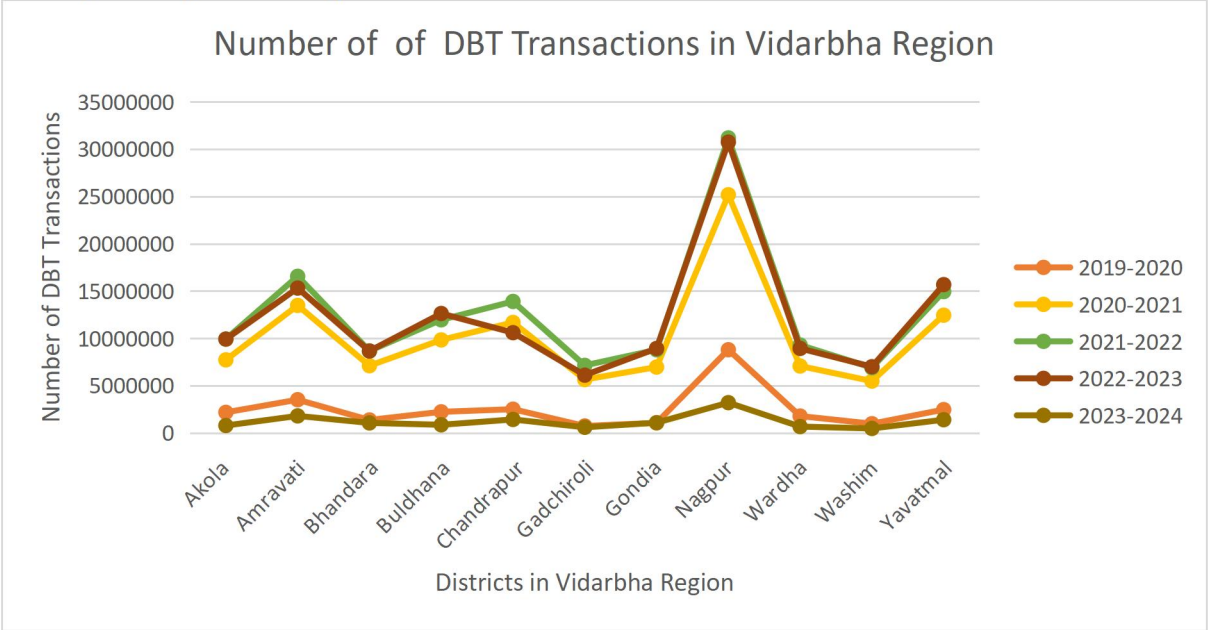

Figure 3. Number of DBT Transactions in Vidarbha Region, 2019-2020 to 2023-2024

Source: India Data Portal.

The number of DBT transactions in Vidarbha during the same time period is shown in Figure 3. The overall picture of transactions is similar to that in fund transfers. The number of DBTs grew significantly in 2020-2021 and 2021-2022, reflecting the intensified use of bank-linked benefit transfers during the crises. This trend also reverses for 2023-2024. This is not a failure of DBT, and it might not be surprising given how quickly we're moving forward. This could be due to variations in the number of schemes operating, the number of people eligible for the schemes, the frequency of transfers, or reporting. Overall, secondary data reveal that DBT has been an important instrument of welfare transfer in Vidarbha, particularly during times of increased welfare support.

4.2 Demographic Profile of Respondents

Table 1 is the demographic profile of the 400 beneficiaries of DBT included in the primary survey. As can be seen from the table, the sample has respondents of varying gender, marital, income, occupation, age and educational categories.

Table 1. Demographic Profile of Respondents

Demographic variable	Category	Respondents	Percentage
Gender	Male	306	76.50
	Female	94	23.50
Marital status	Married	306	76.50
	Unmarried	78	19.50
	Widow	16	4.00
Annual income	Above ₹5 lakh	14	3.50
	₹3 lakh to ₹5 lakh	30	7.50
	₹1 lakh to ₹3 lakh	50	12.50
	₹50,000 to ₹1 lakh	130	32.50
	Below ₹50,000	176	44.00
Occupation	Agricultural labour	86	21.50
	Farmer	184	46.00
	Salaried	56	14.00
	Self-employed	74	18.50
Age	Below 30 years	72	18.00

Vol. 12 Issue 2s (May, 2026)
ISSN: 2208-2190 Pages- 455-471
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	30-40 years	144	36.00
	40-50 years	110	27.50
	50-60 years	48	12.00
	Above 60 years	26	6.50
Educational qualification	Undergraduate	132	33.00
	Secondary education	148	37.00
	Primary education	88	22.00
	No formal education	32	8.00

Demographic profile indicates that the majority of respondents are from rural and low income groups. Very high percentage of respondents earned less than ₹1 lakh per year. The sample is comprised of farmers and agricultural labourers. The study is relevant to this profile as it is anticipated that DBT will be a key component in households dependent on agriculture, informal sector and dependence on financial assistance with welfare. The educational profile also shows that there is also a significant secondary or lower level of education. This implies that access to and financial literacy are relevant for achieving meaningful financial inclusion.

4.3 Descriptive Statistics

The descriptive statistics for the amount of DBT received, pre- and post-DBT income, and pre- and post-DBT savings are provided in Table 2. The table has been updated to account for savings before and after DBT.

Table 2. Descriptive Statistics of DBT Amount, Income, and Savings

Variable	N	Mean	Standard deviation	Minimum	Maximum
DBT amount received	400	28,152	17,061	2,480	59,800
Income before DBT	400	118,157	58,746	50,450	771,830
Income after DBT	400	145,248	37,391	72,330	915,820
Savings before DBT	400	12,769	4,547	5,030	19,920
Savings after DBT	400	25,451	6,416	10,330	38,530

The descriptive statistics show that the income and saving of beneficiaries were higher in the average following DBT. Prior to DBT, the mean income was ₹118,157 and after DBT, it was ₹145,248. In the same way, mean savings rose from ₹12,769 pre-DBT to ₹25,451 post-DBT. The variation in these figures is possible to be linked to better financial situations of beneficiaries. But it is necessary to test the differences statistically to see if these differences are significant.

4.4 Paired Sample t-Test for Income Before and After DBT

A paired sample t-test was used to verify if there was a significant difference between the income before DBT and income after DBT. This test was used because it was a comparison of the same respondents over two related conditions.

Table 3. Paired Sample t-Test for Income Before and After DBT

Statistic	Income before DBT	Income after DBT
Mean	118,157	145,248
Observations	400	400
Pearson correlation	0.980	
t-statistic	-51.518	
p-value, two-tailed	5.0054×10^{-117}	
t-critical, two-tailed	1.972	

Table 3 indicates that the mean annual income went up from ₹118,157 prior to DBT to ₹145,248 following DBT. The paired sample t-test produced a t-value of -51.518, with a two-tailed p-value of 5.0054×10^{-117}. The p-value is less than 0.05, so the null hypothesis is

Vol. 12 Issue 2s (May, 2026)
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DOI: https://doi.org/10.69980/27pfd889
rejected. This means there is a significant difference between the income before and after DBT.
Cohen's dz was also determined from the reported t value and sample size to calculate the effect size. The effect size was 2.58—a very large effect. This indicates that there is a statistically significant, yet also significant difference in income before and after the DBT, within the provided data.

4.5 Paired Sample t-Test for Savings Before and After DBT

A paired sample t-test was also performed to investigate if there was a significant difference between savings before DBT and after DBT.

Table 4. Paired Sample t-Test for Savings Before and After DBT

Statistic	Savings before DBT	Savings after DBT
Mean	12,769	25,451
Observations	400	400
Pearson correlation	0.739	
t-statistic	-41.463	
p-value, two-tailed	7.2943×10^{-100}	
t-critical, two-tailed	1.972	

The results shown in Table 4 indicate that the average savings achieved was ₹25,451 after DBT compared to ₹12,769 prior to DBT. The paired sample t-test produced a t-value of -41.463, with a two-tailed p-value of 7.2943×10^{-100}. This implies that the null hypothesis is rejected, therefore the p-value is less than 0.05. This represents a statistically significant difference between the savings before and after dbt.
The effect size (Cohen's dz) was 2.07. This means this is a large effect. The result indicates that savings had increased after DBT is implemented and the increase is statistically significant and practically large based on the reported data.

4.6 Chi-square Test for Occupation and Financial Stability

A chi-square test of independence was performed to investigate whether there is an association between occupation and the perception of DBT improving financial stability of the respondents (Table 5).

Table 5. Occupation and Agreement that DBT Improved Financial Stability

Occupation	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Total
Agricultural labour	10	12	10	26	28	86
Farmer	10	18	16	52	88	184
Salaried	6	10	10	12	18	56
Self-employed	6	12	12	22	22	74
Total	32	52	48	112	156	400

The value of the chi-square statistic was 10.53, on 12 degrees of freedom. The p-value was 0.57. As p-value > 0.05, the null hypothesis is not rejected. In other words, there is no statistically significant correlation between an occupation and perception of DBT helping financial stability.
Cramer's V measure was used to determine the level of association. The value of Cramer's V was 0.094, which indicates a very weak association. This is consistent with the results of the chi-square test and indicates that there is not a significant difference in perceptions of financial stability between occupational groups when it comes to DBT.

4.7 One-sample t-Test for Financial Stability

Vol. 12 Issue 2s (May, 2026)
ISSN: 2208-2190 Pages- 455-471
DOI: https://doi.org/10.69980/27pfd889
The one sample t-test was used to determine if there was a significant agreement that DBT enhanced their financial stability as beneficiaries. The test score was 3, the neutral score on a five-point Likert scale.

Table 6. Agreement that DBT Improved Financial Stability

Response category	Score	Frequency
Strongly disagree	1	32
Disagree	2	52
Neutral	3	48
Agree	4	112
Strongly agree	5	156

Table 6 shows that the mean score was 3.77 and the standard deviation was 1.304. The one-sample t-test gave a t value of 11.81 and a number of degrees of freedom of 399; the p value was <0.001. The value of the p-statistic is less than the significance level of 0.05, so the null hypothesis is rejected. This meant that beneficiaries strongly agreed that DBT helps them in financial stability.
The effect size (Cohen's d) was 0.59. This is a medium size effect. Thus, the result indicates that the agreement among the beneficiaries was not only statistically significant but also practically significant.

4.8 Chi-square Test for Occupation and Banking Service Usage

A chi-square test of independence was performed to test if occupation is related to the perception that DBT increased their use of banking services, as seen in Table 7.

Table 7. Occupation and Agreement that DBT Encouraged Banking Service Usage

Occupation	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Total
Agricultural labour	8	8	10	28	32	86
Farmer	16	18	20	60	70	184
Salaried	6	6	8	16	20	56
Self-employed	8	8	10	28	20	74
Total	38	40	48	132	142	400

The chi-square statistic was 2.21 degrees of freedom, 12. The p-value was 0.999. The p value is > 0.05 and the null hypothesis is not rejected. That is, there is no statistically significant correlation between occupation and agreement that DBT facilitated the use of banking services.
The association in Cramer's V was very small – 0.043. Overall, this finding indicates that the perception that DBT promoted the use of banking service was relatively consistent across occupational groups.

4.9 One-sample t-Test for Banking Service Usage

One-sample t-test was used to determine whether beneficiaries significantly agreed that DBT prompted them to utilize banking services. As before, the neutral point of the 5-point Likert scale was considered to be 3 and was used as the test value.

Table 8. Agreement that DBT Encouraged Banking Service Usage

Response category	Score	Frequency
Strongly disagree	1	38
Disagree	2	40
Neutral	3	48
Agree	4	132

Vol. 12 Issue 2s (May, 2026)
ISSN: 2208-2190 Pages- 455-471
DOI: https://doi.org/10.69980/27pfd889

Strongly agree	5	142

Table 8 indicates that the mean score is 3.75 and the standard deviation is 1.31. For the one-sample t-test, t was 11.41 with 399 degrees of freedom and p was < 0.001. As the value of p is less than 0.05, the null hypothesis is rejected. This means that there was a large consensus among beneficiaries that DBT made them more inclined to use banking services.
The effect size (Cohen's d) was 0.57. This means there is a medium impact. The findings indicate higher perceived use of financial services among beneficiaries who use DBT.

4.10 Summary of Hypothesis Testing

Table 9 summarizes the results of hypothesis testing.

Table 9. Summary of Hypothesis Testing

Hypothesis	Test used	Result	Decision
H01: No significant difference between income before and after DBT	Paired sample t-test	Significant difference found	Rejected
H02: No significant difference between savings before and after DBT	Paired sample t-test	Significant difference found	Rejected
H03: No significant relationship between occupation and perceived financial stability	Chi-square test	No significant relationship found	Not rejected
H04: Beneficiaries do not significantly agree that DBT improved financial stability	One-sample t-test	Significant agreement found	Rejected
H05: No significant relationship between occupation and use of banking services	Chi-square test	No significant relationship found	Not rejected
H06: Beneficiaries do not significantly agree that DBT encouraged banking service usage	One-sample t-test	Significant agreement found	Rejected

The results show that there are statistically significant differences in income or savings pre and post-DBT. The beneficiaries also strongly agreed that DBT facilitated financial stability and promoted banking services. Occupational status, however, was not significantly positively correlated with perceived financial security or financial services usage. This means that the gains from financial inclusion via DBT could be felt among occupational groups as a whole, not just within a certain livelihood category.

5. Discussion

The results reveal that DBT has contributed to financial inclusion of beneficiaries at Vidarbha by bringing the welfare receipt and the formal banking interaction together. Structural changes in income and saving post DBT have been observed which indicate direct transfers are likely to complement food-based income and low-paid employment as a source of financial support for households relying on farming and agricultural labour and other low-paid income. This is significant because the demographic characteristics of the respondents demonstrate a greater proportion of lower income beneficiaries and agriculture related jobs. Even casual transfers can make a difference for these households, in terms of making funds available for current needs and for small savings. It confirms the understanding that transfers linked to welfare can help achieve financial inclusion as long as they flow through formal accounts and are utilized by the beneficiaries in their financial life.
The saving from the result is especially significant. Financial inclusion isn't about opening up a bank account or getting a transfer. It also has the ability to save money, handle small surpluses, and engage in formal institutions. The rise in savings following the DBT seems to indicate that beneficiaries are employing bank-linked transfers not just for consumption but also for basic financial management. Mia et al. (2019) remind us that financial inclusion and

Vol. 12 Issue 2s (May, 2026)
ISSN: 2208-2190 Pages- 455-471
DOI: https://doi.org/10.69980/27pfd889
financial deepening are key to enhance financial systems' functioning and reach, particularly in developing areas. The present findings bring this to DBT beneficiaries of Vidarbha.

The research also revealed that beneficiaries strongly agreed that DBT has made their finances more stable. This perception is relevant because financial stability in low income households is often associated with regular income and the capacity to cope with normal living costs. While DBT can't necessarily change a household's income structure, it can be a structured and documented support mechanism. This could help to limit uncertainty for Welfare Beneficiaries receiving Welfare benefits via Bank Accounts. However, the results should be taken with a pinch of salt. This does not necessarily imply a strict causal relationship, and income and/or savings can also be caused by employment or the agricultural situation, household composition, or other welfare measures. Still, the strong statistical findings indicate that beneficiaries associate DBT with improved financial conditions.

The article's main point about banking service usage is at the center. The rate of significant agreement across beneficiaries was high that DBT made them more likely to use banking services. This confirms that DBT can help move from passive to active account ownership. Financial inclusion should be measured through account ownership and the ways in which people save, borrow, make payments and manage financial risk, according to the World Bank (2022). The beneficiaries who are receiving DBT will have to go to banks, use ATMs, contact business correspondents, check balance, withdraw or save the money transferred. This repeated interaction can lead to greater familiarity with formal financial services. Recent research on digital public infrastructure in rural India also suggests that UPI adoption can help boost financial inclusion, as it has led to an increase in the use of saving accounts, the decline of informal borrowing, and greater trust in digital finance (Balasundaram et al., 2026). Research on mobile money also suggests that financial inclusion can be achieved through digital financial tools, provided that they give greater control to the user of mobile money over transactions and diminish the practical constraints on financial inclusion (Kim, 2022).

The findings of the occupation are nuanced to the discussion. There is no significant association between occupation and financial stability or access to banking services as indicated by the chi-square tests. This indicates that the answers of the farmers, agricultural labourers, salaried and self-employed respondents are not significantly different. This is corroborated by the relatively small effect sizes. A plausible reason may be that DBT serves as an inter-livelihood financial channel as a common good. For everyone who responds, they are all DBT beneficiaries, so the benefits received by them via a bank account might be comparable by occupation. The utility of the finding is that it indicates that the reach of financial inclusion is DBT-led could be quite extensive across various groups of beneficiaries. It should also not be emphasized that there are no occupation-related differences. The disparities in financial inclusion can be deeper than just occupation. The level of banking use can be affected by gender, education, distance from bank branch, access to a digital version of the bank, past ownership of bank accounts, and financial education. Babajide et al. (2020) reveal that the availability and availability of financial institutions can impact financial inclusion penetration. This reinforces the importance of studying infrastructure and access to facilities at a local level in the future. Although Vidarbha beneficiaries might have similar perceptions of occupations, they might also have different levels of ease of access to banking services at the location and social group.

The secondary data on transfers and transactions provides additional background for the survey results. During COVID-19, there was a significant increase in the number of transfers and transactions conducted by DBT, which then fell in 2023-2024. This is a pattern that indicates the intensive use of DBT during a time of increased welfare requirements. But, don't use the drop as proof of lowered effectiveness. The volume of DBTs can fluctuate as a result of scheme cycles, eligibility criteria, administrative regulations, fund allocation and reporting. As such, the secondary data should be used as background evidence of DBT activity, with the primary survey data being used for the main beneficiary level evidence.

The policy message is that DBT should be used as a delivery vehicle for welfare and a financial inclusion tool. Its value as a financial inclusion can be enhanced if the beneficiaries are given guidance on how to safely and regularly use accounts. The awareness among bank,

Vol. 12 Issue 2s (May, 2026)
ISSN: 2208-2190 Pages- 455-471
DOI: https://doi.org/10.69980/27pfd889
administration, and welfare departments should be enhanced regarding the use of accounts, alerts of transactions, complaints, and precautions to be taken with websites. The Reserve Bank of India (2021) highlights four aspects of financial inclusion, namely usage, financial literacy, consumers protection, and quality of access. These dimensions are of equal importance for beneficiaries of DBT who might have bank accounts but need assistance to confidently use formal services.

In addition, financial literacy support can play a vital role in reinforcing DBT related inclusion. The study conducted by Dash and Mohanta, 2024 reveals that financial literacy, awareness and availability of appropriate financial products affect inclusive financial behaviour of the rural households. This implies that DBT might result in more robust inclusion effects when there is a combination of direct transfers, education about the benefits of DBT to beneficiaries, and local financial guidance. Business correspondent services and last-mile banking points need to be enhanced in rural areas and semi-urban areas. This is critical because the more banking interaction there is, the more access beneficiaries need to have to banking services without undue cost, travel, or confusion. The findings from the rural households in Odisha also suggest that financial inclusion is influenced by the household's access to financial services (DBT delivery) as well as the economic empowerment of households based on landholding, gender, caste, family type, distance to the financial institution, and financial behaviour (Nayak et al., 2024).

There are some limitations in the study. It is based on selected districts of Vidarbha and available survey and secondary data are used. The study was unable to use regression, factor analysis, and reliability tests as there were no raw data for the respondents. The study also excludes the qualitative interviews, which could not be used to capture the detailed experiences of the beneficiaries of failed transactions, authentication problems, or access to banks. Future studies should also investigate the drivers of financial inclusion at the micro level using data at the respondent level to study these drivers with respect to DBT linkage. It can also make comparisons between districts, gender groups, scheme types and digital access levels. Longitudinal studies would be particularly beneficial to understand if DBT is associated with sustained increases in savings, use of bank services and financial stability.

6. Conclusion

The study ends by concluding that Direct Benefit Transfer has improved the financial inclusion of beneficiaries in Vidarbha, enabling the welfare receipt to be linked with formal banking. These findings suggest that DBT is associated with better income, wealthier savings, more financial stability, and higher levels of banking services. The results indicate that DBT needs to be understood not merely as a welfare delivery system, but also as a way for rural and semi-urban recipients to become better connected to the formal financial system. There were no significant differences in occupation based on the absence of occupation-based differences, which further shows that the use of DBT linked inclusion is widely experienced throughout various livelihood groups. The results, however, should be understood in the context of the limitations of the survey data and secondary data used, and not be interpreted as strictly causal. On balance, it seems that DBT has a positive impact on financial inclusion in Vidarbha by facilitating access to financial services, promoting financial service use and basic financial security amongst beneficiaries. This evidence can be further bolstered by respondent-level data sets, a longitudinal design, and a comparison of different regions and beneficiaries.

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Vol. 12 Issue 2s (May, 2026)
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