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Unconditional Women Cash Transfer Programmes in India: Evidence from Maharashtra and Odisha

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Abstract

Several Indian states have introduced Unconditional Cash Transfer (UCT) schemes paying fixed monthly or annual amount directly into the bank accounts of women, justified partly as welfare support and partly as an instrument of women's financial empowerment. This paper provides a rigorous empirical evaluation of two large-scale state-level UCT programmes in India; the Mukhyamantri Majhi Ladki Bahin Yojana in Maharashtra (monthly transfer of Rs 1,500 to eligible women) and the Subhadra Yojana in Odisha (biannual instalments totalling Rs 10,000 per year), using account-level monthly panel data. Employing Two-Way Fixed Effect Difference-in-Differences (TWFE DiD) for the Maharashtra scheme and a Staggered DiD framework following Callaway and Sant'Anna (2021) for the Odisha scheme, we estimate causal impacts on beneficiaries' savings/month end balances and consumption/monthly withdrawals. The Maharashtra programme raised month-end balances by approximately 84% (Rs 6,884 per beneficiary) and spending by approximately 46% (Rs 1,349). The Odisha programme raised balances by approximately 45% (Rs 6,887) and spending by 28% (Rs 1,920). The Marginal Propensity to Consume was around 0.90 for the monthly transfers indicating liquidity constraints. In particular, older women had more urge for precautionary savings while those women having lower education exhibited more urge to spend on education.

Remarkably, both programmes generate positive household spillover effects, improving financial positions of family members while reducing their expenditure outflows, reminiscent of Friedman Permanent Income Hypothesis but with an independent decision making. A 10% increase in beneficiaries' account balances under Subhadra Yojana was associated with a 1.9% reduction in relatives' spending. In Maharashtra, the Ladki Bahin scheme was associated with a 23% increase in relatives' month-end balances and a 49% decline in spending. Finally, spending basket analysis reveals a qualitative shift toward lifestyle-related, medical, and educational purposes alongside accelerated UPI adoption for beneficiaries. For example, in Maharashtra for Ladki Bahin beneficiaries ATM related educational expenditure recorded the largest increase from 18% to 24%. In UPI transactions, lifestyle-related expenditure recorded largest increase, rising from 37% to 42%, while medical expenditure increased from 8% to 10%. Such results are in conformity with global trends that reveal women-focused transfers generate stronger developmental outcomes than gender-neutral transfers, but in India the digital story has revolutionised such payment mechanisms. The paper recommends a cash-plus empowerment framework with improved beneficiary targeting and linking it to outcome-based transfers like improvement in children nutrition-based outcomes.

Keywords*: Unconditional Cash Transfers, Women's Empowerment, Financial Inclusion, Difference-in-Differences, Direct Benefit Transfer, India, Gender Economics.*

JEL Classification*: D14, H53, I38, J16, O15, O18, G21*

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1. Introduction

Cash transfer programmes targeted at women have become one of the fastest-growing categories of state-level welfare spending in India. By FY26, more than fifteen states had introduced some form of unconditional monthly or annual transfer paid directly into women's bank accounts, at an estimated aggregate cost of roughly Rs 1.7 lakh crore and reaching close to 12 crore women. The number of states running such schemes increased more than five-fold between FY23 and FY26 reflect a convergence of evidence from development economics and political economy; direct income support placed in women's hands is a powerful and cost-effective instrument for improving household welfare, advancing financial inclusion and reducing gender-based economic exclusion.

The theoretical motivation draws on a substantial body of microeconomic literature demonstrating that income accruing to women generates proportionally larger household welfare improvements than equivalent income accruing to men (Thomas, 1990; Duflo, 2003; Haushofer and Shapiro, 2016). Women tend to allocate higher shares of marginal income to food, health, and children's education, generating positive intergenerational externalities (Duflo, 2012). Direct transfers into women's individual bank accounts further confer the ancillary benefits of formal financial inclusion, digital literacy, and strengthened intra-household bargaining power (Kabeer, 1999; Field et al., 2021).

In India, the expansion of digital public infrastructure, particularly the Jan Dhan-Aadhaar-Mobile (JAM) architecture, has transformed the delivery of welfare programmes through Direct Benefit Transfers (DBT). The DBT system has significantly reduced transaction costs and leakages while enabling governments to transfer benefits directly into beneficiaries' bank accounts. Importantly, directing transfers to women can enhance their financial inclusion and strengthen their control over household resources, although social and institutional barriers may still constrain the extent of empowerment achieved through these transfers.

The growing emphasis on women-centred welfare has led several Indian states to introduce unconditional cash transfer schemes targeted at adult women. These programmes seek to provide income support, enhance economic security, and improve women's participation in household decision-making. The rapid proliferation of such schemes reflects a broader policy shift toward recognising women as independent economic agents rather than merely indirect beneficiaries of household welfare programmes. Recent evidence suggests that these schemes

can positively influence consumption, savings behaviour, dietary diversity, and women's economic well-being, although their long-term impacts remain an area of ongoing research.

In recent years, several Indian states have introduced large-scale unconditional cash transfer programmes targeted at women as a means of enhancing financial security and promoting women's economic empowerment. Among these, Odisha's *Subhadra Yojana* and Maharashtra's *Mukhyamantri Majhi Ladki Bahin Yojana* represent two of the most significant state-led initiatives. The Subhadra Scheme provides financial assistance to eligible women aged 21-60 years from households with annual incomes below Rs 2.5 lakh, while the Mukhyamantri Majhi Ladki Bahin Yojana offers monthly income support to women aged 21-65 years belonging to economically vulnerable households. Together, these programmes cover millions of beneficiaries and account for substantial fiscal commitments by their respective state governments.

Despite the rapid expansion of women-focused cash transfer programmes in India, empirical evidence on their intra-household spillover effects remains limited. Existing studies have largely focused on beneficiary outcomes such as consumption, financial inclusion, and women's empowerment, with relatively little attention paid to the responses of other household members.

According to collective household models, resources transferred to one household member can influence the behaviour and welfare of other members through changes in resource allocation, consumption patterns, savings decisions, and intra-household bargaining dynamics (Chiappori, 1992; Duflo, 2012). Understanding whether transfers received by women affect the financial behaviour of spouses, children, and other family members is therefore critical for assessing the overall effectiveness of such interventions.

However, rigorous quantitative causal evaluations using actual financial transaction data remain scarce in the Indian context. Most existing assessments rely on survey instruments susceptible to recall and social-desirability bias, or on aggregate administrative statistics that cannot isolate programme effects from secular trends.

This study seeks to address this gap by examining the household spillover effects of Odisha's *Subhadra Scheme* and Maharashtra's *Mukhyamantri Majhi Ladki Bahin Yojana*. Using beneficiary-level and relative-level financial data, the paper investigates i) to estimate the impact of Ladki Bahin yojana on financial conditions of women beneficiaries in both states, particularly improvement in their savings and consumption; ii) to find out the relevance of the yojana, from the policy perspective of the Governments; and iii) to investigate whether cash transfers received by women influence the spending and saving behaviour of other family

members. By comparing outcomes across two major state-level programmes, the study contributes to the literature on gender-targeted social protection and provides policy-relevant evidence on the broader household impacts of direct cash transfers to women.

The remainder of the paper is organised as follows. Section 2 reviews the relevant literature on cash transfers, women's economic empowerment, and household spillover effects. Section 3 presents the institutional background of the *Mukhyamantri Majhi Ladki Bahin Yojana* and the *Subhadra Yojana*. Section 4 describes the data sources, sample construction, and empirical methodology employed in the analysis. Section 5 provides an overview of women-focused income support schemes implemented across Indian states, while Section 6 discusses the fiscal commitment of state governments toward women-centric unconditional cash transfer programmes. Section 7 presents the empirical findings on the direct and household spillover effects of the schemes. Finally, Section 8 concludes with a discussion of the key findings and their policy implications.

2. Related Literature

Direct Cash Transfers (DCTs) have become one of the most widely adopted social protection instruments in developing economies. Rooted in welfare economics and poverty alleviation theory, cash transfers are designed to provide households with purchasing power while allowing beneficiaries the autonomy to allocate resources according to their needs. Unlike in-kind transfers, cash transfers reduce administrative costs, improve targeting efficiency, and increase beneficiary choice.

2.1. Direct Cash Transfers and Women's Empowerment

The economics of cash transfers to low-income households has evolved considerably over the past three decades. The early literature, following the neoclassical unitary household model (Becker, 1981), treated the household as a single decision-making unit, implying neutrality of the recipient's identity. This view was systematically challenged by the collective and bargaining models of household behaviour (Manser & Brown, 1980; McElroy & Horney, 1981; Chiappori, 1988), which established theoretically that income placed under the control of different household members generates different consumption outcomes. Lundberg et al. (1997) provided foundational empirical evidence using a UK child benefit reform, showing that transfers to mothers generated larger expenditures on women's and children's clothing relative to transfers to fathers. This result has since been replicated in multiple developing-country contexts (Thomas, 1990; Duflo, 2003; Qian, 2008).

Thomas (1990) exploits cross-sectional variation in non-labour income sources in Brazil to show that unearned income in the hands of mothers generates child health improvements four to eight times larger than equivalent income in the hands of fathers. Duflo (2003) uses the extension of South Africa's old-age pension programme to women as a natural experiment: pensions received by grandmothers improved the nutritional status of girls but not boys and showed no impact on grandsons of male pensioners, a finding that illustrates the gendered specificity of resource allocation within households.

The financial inclusion rationale rests on the observation that women in low-income settings are disproportionately excluded from formal financial services. Dupas and Robinson (2013) demonstrate, using a randomised field experiment in Kenya, that providing women with basic savings accounts, without altering income generates significant improvements in health investment and business accumulation. The key mechanism is the availability of a commitment savings technology that separates productive savings from household consumption pressure. When UCT programmes require beneficiaries to hold individual bank accounts as a condition of receipt, they simultaneously extend the transfer and create the financial infrastructure for its productive deployment.

Liquidity constraints further amplify the welfare impact of cash transfers. Deaton's (1991) buffer-stock model predicts that households facing binding liquidity constraints will exhibit high Marginal Propensities to Consume (MPCs) out of unexpected income, a prediction confirmed by the empirical literature on tax rebates and stimulus payments in developed economies (Johnson et al., 2006; Parker et al., 2013) and, at higher magnitudes, in developing-country UCT contexts (Gertler et al, 2012; Haushofer & Shapiro, 2016).

The relationship between cash transfers and women's empowerment is often explained through the household bargaining framework. According to this perspective, control over economic resources enhances an individual's bargaining power within the household, thereby influencing decision-making outcomes. Duflo (2012) argues that economic development and women's empowerment are mutually reinforcing processes; however, economic growth alone does not automatically translate into gender equality. Instead, targeted interventions that increase women's control over resources are necessary to alter existing power relations and improve women's agency.

Kabeer's (1999) empowerment framework further conceptualizes empowerment as the expansion of an individual's ability to make strategic life choices. The framework identifies three dimensions of empowerment: resources, agency, and achievements. Direct cash transfers contribute to all three dimensions by providing women with financial resources, strengthening

their decision-making capabilities, and improving welfare outcomes. Consequently, cash transfer programmes targeted at women are increasingly viewed as instruments of both social protection and gender-transformative policy.

The gender-targeting of cash transfers has attracted increasing scholarly attention because women often allocate resources differently from men. Empirical evidence suggests that when women directly receive transfers, spending tends to be directed toward children's education, nutrition, healthcare, and household welfare (Lundberg, 1997; Quisumbing & Maluccio, 2003). Consequently, women-focused transfers are expected to generate stronger developmental outcomes than gender-neutral transfers (Yoong et al., 2012).

However, the literature also highlights important limitations. Duflo (2012) argues that empowerment outcomes depend on broader institutional and social structures, and that cash transfers alone may not be sufficient to transform entrenched gender norms. Similarly, studies of conditional cash transfer programmes have shown that while transfers improve educational attainment and welfare outcomes, they may have limited effects on long-term labour market participation and structural gender inequality. Bhalotra and Rawlings (2011), using cross-country data, find that income improvements for women in low-income countries reduce infant mortality significantly more than equivalent income improvements for men.

In the Indian context, Pande et al. (2021) use data from Bihar and Uttar Pradesh to show that women's mobile money accounts and direct transfers improve women's financial autonomy and reduce domestic violence incidence. Banerjee et al. (2015), in their evaluation of the Bandhan Targeting the Ultra Poor programme, document sustained effects on consumption, asset accumulation, and women's mental health. Field et al. (2021) demonstrate that providing women with individual savings accounts than joint accounts substantially increase savings and household investment. The evidence on the health effects of women's income control has been generated by several studies. Swaminathan et al. (2012) use IHDS data to show that women's asset ownership significantly improves children's nutrition outcomes even conditional on household income, consistent with a bargaining channel. Imai et al. (2012) find that MGNREGS participation by women, provides direct income to female workers, is associated with improved child health outcomes in Maharashtra, consistent with the income-in-women's-hands hypothesis. The mechanism through which gender-targeted transfers improve outcomes is multi-dimensional. First, direct transfers into women's accounts increase their resource control and intra-household bargaining power (Kabeer, 1999). Second, the requirement to hold and operate a personal bank account generates digital and financial literacy spillovers (Jack & Suri, 2011). Third, predictable income flows enable women to plan household finances more

effectively, reducing reliance on costly informal credit (Dupas & Robinson, 2013). These mechanisms are all consistent with our empirical findings.

2.2. Global Evidence on Cash Transfers and Economic Development

A substantial body of international literature demonstrates that the modern evidence base on cash transfer programmes is rooted in the large-scale randomised and quasi-experimental evaluations of Conditional Cash Transfer (CCT) programmes in Latin America from the late 1990s onwards. Mexico's *PROGRESA* programme (later renamed *Oportunidades* and subsequently *Prospera*), providing income transfers to female household heads conditional on school enrolment and health check-up attendance, was the first large-scale CCT evaluated through a randomised rollout design, enabling unusually credible causal identification. Schultz (2004) finds significant effects on school enrolment (3.4-9.3 percentage-point increases), with effects concentrated in secondary school and in the transition from primary to secondary. Gertler (2004) documents significant improvements in child health outcomes, including 12% reductions in illness incidence and reduced child anaemia prevalence, attributable to the health conditionality component. Behrman et al. (2005) estimate long-run earnings effects for *PROGRESA* beneficiaries of approximately 8-10% higher lifetime earnings from the schooling gains alone.

Brazil's *Bolsa Familia*, the world's largest CCT programme, covering approximately 14 million households by the mid-2000s, has been evaluated using household survey data exploiting the programme's demographic eligibility cut offs as regression discontinuities. Fiszbein et al. (2009), in the World Bank's comprehensive review, summarise evidence showing significant reductions in extreme poverty, improved school attendance, and increased preventive healthcare utilisation. Soares et al. (2010) decompose Brazil's rapid poverty reduction during 2001-2007 and find that Bolsa Familia accounts for approximately 12% of the observed reduction in the Gini coefficient, a substantial contribution relative to its fiscal cost of approximately 0.5% of GDP.

Colombia's *Familias en Accion* and Honduras's *PRAF* have been evaluated through randomised pilots, with Attanasio et al. (2010) finding significant schooling, health, and consumption impacts for Colombia. Schady and Araujo (2008) find for Ecuador's *Bono de Desarrollo Humano*, a near-universal UCT converted from a CCT, that transfers significantly improved child cognitive development test scores and increased the probability of school enrolment, with the quality of the child-care environment as an important mediating pathway.

2.3. Intra-Household Spillovers: Effects on Family Members

The effects of women's income transfers on household members, a dimension that has received relatively limited attention in the literature, are theoretically complex. Under the collective household model, a transfer to the women (daughter, wife, mother) shifts the household's pareto allocation in her favour, potentially reducing male consumption and increasing female consumption for the same total household income (Chiappori, 1992). However, if female consumption and male consumption are complements (e.g., through public goods consumption such as children's education), or if the transfer enables household-level investments that increase total resources, both parties may benefit simultaneously.

Baird et al. (2013), evaluating a UCT programme in Malawi, find that male partners of recipient women exhibit significantly reduced risky behaviour, consistent with reduced psychological stress from income insecurity, or with women's increased bargaining power affecting male behaviour. Egger et al. (2022), studying the general equilibrium effects of *GiveDirectly's* large-scale Kenyan programme, find positive spillover effects not only on non-beneficiary households in programme villages (through local demand effects) but also on male household members of female recipients, through increased household consumption.

The mechanism most relevant to the present study's findings on male relatives' reduced expenditure is the financial substitution hypothesis: when women receive regular income through their own accounts, the household's reliance on male earnings for current consumption expenditure decreases, freeing male resources for savings or investment. Haddad and Kanbur (1990), using Philippine data, document significant within-household inequality in food consumption that disappears when women's income control increases, consistent with a redistribution from men to women that does not necessarily reduce male welfare if household public goods are the primary consumption item.

3. Cash Transfer Programmes

3.1. Mukhyamantri Majhi Ladki Bahin Yojana, Maharashtra

The *Mukhyamantri Majhi Ladki Bahin* Yojana was launched by the Women and Child Development Department, Government of Maharashtra, on June 2024. The scheme provides a monthly direct benefit transfer of Rs 1,500 to eligible women, delivered retrospectively from July 2024, with the first disbursement of Rs 3,000 in August 2024 covering the July-August period. As of FY2025-26, the programme enrolled approximately 2.38 crore beneficiaries at a

budget outlay of Rs 38,310 crore. Following a comprehensive digital dragnet audit, beneficiary numbers declined to approximately 1.57 crore by FY2026-27 (a 34% reduction), with over 86-90 lakh ineligible, deceased, or non-compliant users removed, reducing the budget outlay to Rs 26,500 crore.

Eligibility criteria require women to be between 21 and 65 years of age, Maharashtra residents, with family annual income below Rs 2.5 lakh. Outsourced employees, voluntary workers, and contract workers earning below Rs 2.5 lakh are also eligible. The main exclusion categories include: women already receiving Rs 1,500 or more monthly under another government scheme; income-tax payers; MPs/MLAs; government or PSU employees within the household; and households owning disqualifying assets such as four-wheelers (excluding tractors). The transfer is delivered by DBT into an Aadhaar-enabled, single-holder bank account in the beneficiary's name.

The stated objectives of the scheme encompass economic freedom for women, improvement in health and nutrition, and strengthening women's decision-making role within the household. The cash transfer is explicitly positioned not merely as welfare support but as a women's empowerment instrument, designed to address a gender gap in economic participation, according to PLFS, 2023-24 female worker population ratio is 29.8% (15 years and above, usual status) lagged the male worker population ratio of 74.3%.

3.2. Subhadra Yojana, Odisha

The Subhadra Yojana was launched by the Government of Odisha on 17 September 2024, with the objective of empowering women from economically weaker sections. The scheme provides Rs 10,000 per year in two instalments of Rs 5,000 each, the first timed to Rakhi Purnima and the second to International Women's Day (8 March), with a total planned benefit of Rs 50,000 over five years (2024-2029). The programme aims for holistic development through improving health and educational outcomes, encouraging financial independence and entrepreneurship, advancing digital financial literacy, and supporting women's personal and professional growth.

Eligibility covers women aged 21 to under 60 who are Odisha residents and are either covered under NFSA/SFSS or have family annual income below Rs 2.5 lakh. Exclusion criteria mirror those of the Maharashtra scheme: women receiving Rs 1,500 or more from another government yojana; income-tax payers, MPs/MLAs, government/PSU employees or pensioners within the household; and households with certain four-wheelers or larger land holdings. The programme's planned coverage exceeds one crore women across all 30 districts, and by March

2026 approximately 1.02 crore women had received the fourth instalment with an annual budget outlay of approximately Rs 10,145 crore.

The Odisha government has announced the expansion of the Subhadra Yojana into *'Subhadra Plus'*, introducing complementary initiatives including *'Kishori Subhadra'*, *'Subhadra Sanchay'*, *'Subhadra Surakhya'*, *'Subhadra Sakhi'*, *'Subhadra Yatri'*, *'Subhadra Sangh'*, *'Kuha Subhadra'* (Call Centre), *'Subhadra Sahyogi'*, *'Subhadra Scholars'*, and *'Sujogya Subhadra'*.

The comparative design of both schemes is in the Table 1.

Table 1: Scheme design

Feature	**Subhadra Yojana (Odisha)**	**Ladki Bahin Yojana (Maharashtra)**
Launch date	September 2024	August 2024 (retrospective from July 2024)
Target age group	21 to under 60 years	21 to 65 years
Eligibility income ceiling	Rs 2.5 lakh per annum (or NFSA/SFSS coverage)	Rs 2.5 lakh per annum
Benefit amount	Rs 10,000 per year (two instalments of Rs 5,000)	Rs 1,500 per month (Rs 18,000 per year)
First Disbursement pattern	Staggered across multiple phases	Single near-simultaneous disbursement
Total beneficiaries (latest)	~1.02 crore (4th instalment, March 2026)	2.38 crore (FY26), revised to 1.57 crore (FY27) after eligibility audit
Delivery mechanism	Aadhaar-enabled DBT, single-holder account	Aadhaar-enabled DBT, single-holder account

Source: Respective scheme websites

4. Data and Methodology

4.1 Data Sources

The study used granular account-level monthly panel data. The unit of observation is the individual account holder. For Ladki Bahin, the data span January 2023 to December 2025, a 36-month window that encompasses approximately 19 pre-policy months (January 2023-July 2024) and 17 post-policy months (August 2024 -December 2025). For Subhadra, the data span August 2024 to December 2025. The primary outcome variables are: (i) month-end account balance (a stock variable reflecting accumulated savings net of withdrawals); and (ii) total monthly withdrawals (a flow variable proxies for consumption expenditure). Ancillary variables include UPI transaction records, ATM withdrawal records with Merchant Category Codes (MCCs), and beneficiary demographic characteristics including age, education, marital status, and religion.

4.1.1. Sample Construction and Treatment Assignment

The treatment assignment exploits the program income eligibility thresholds below Rs 2.5 lakh. For both programs the treatment group comprises women who received first instalment of the scheme and age between 21 to 65 years for the Ladki Bahin and 21 to 60 years for Subhadra yojana. The control group consists of women who did not receive payments, with family income between Rs 2.5 lakh and Rs 3 lakh, a design that ensures close income comparability and reduces selection bias. The Subhadra study employs the same income-based selection, with analogous treatment (Rs 2.5 lakh threshold) and control (Rs 2.5-3 lakh) groups. Table 2 shows the detailed explanation and sample size[2] of the treatment and control group used for the empirical analysis.

Table 2: Sample distribution of treatment and control groups

Scheme	Treatment Group	Control Group
Mukhyamantri Majhi Ladki Bahin Yojana, Maharashtra	Those who received payment under Ladki Bahin yojana (Eligible candidates) with family income below Rs 2.5 lakh Sample size: 30,861	Those who DO NOT receive payment under Ladki Bahin Yojana (Non-eligible candidates) with family income between Rs 2.5 lakh and Rs 3 lakh Sample size: 13,686
Subhadra Yojana, Odisha	Those who received payment under Subhadra yojana (Eligible candidates) with family income below Rs 2.5 lakh Sample size: 75,750	Those who DO NOT received payment under Subhadra yojana (non-eligible candidates) with family income between Rs 2.5 lakh and Rs 3 lakh Sample size: 85,588

Source: Author's calculation
Note: The treatment group comprises households eligible for/benefiting from the scheme, while the control group consists of comparable households not receiving the benefit. The table reports the number of observations used in the empirical analysis.

4.2. Methodology

4.2.1. Identification Strategy: Two-Way Fixed Effect DiD (Maharashtra)

The identification of the Ladki bahin relies on the standard Two-Way Fixed Effect Difference-in-Differences (TWFE DiD) estimator. The intuition is straightforward: in the absence of the policy, treated and control women would have followed parallel trends in savings and spending.

[2] Although the treatment and control groups are unequal in size, this does not undermine the casual analysis; the Difference-in-Differences estimator does not require equal group sizes, and the large overall sample ensures sufficient statistical power for precise and reliable casual estimates.

The policy effect is identified by the differential deviation from this counterfactual trend in the post-policy period. Formally, the estimating equation is:

$$Y_{it} = \alpha + \gamma_i + \lambda_t + \beta(Treatment_i * Post_t) + X'_{it}\delta + \varepsilon_{it} \ldots\ldots\ldots (1)$$

where Y_{it} is the outcome for individual *i* in month *t*; γ_i is an individual fixed effect absorbing all time-invariant heterogeneity; λ_t is a month fixed effect absorbing common time shocks (e.g., inflation, macroeconomic conditions); β is the DiD coefficient of interest; $Treatment_i$ equals one for beneficiaries 0 otherwise; $Post_t$ equals one from August 2024 onwards; and X'_{it} is a vector of control variables. Standard errors are clustered at the individual level to account for within-individual serial correlation.

The validity of the Difference-in-Differences (DID) estimator relies on the Parallel Trends Assumption. This assumption states that, in the absence of the *Mukhyamantri Majhi Ladki Bahin Yojana*, the treatment and control groups would have experienced similar changes in the outcome variable over time.

$$E\left[Y_{it}(0) - Y_{i,t-1}(0) \middle| D_i = 1\right] = E[Y_{it}(0) - Y_{i,t-1}(0) | D_i = 0] \ldots\ldots (2)$$

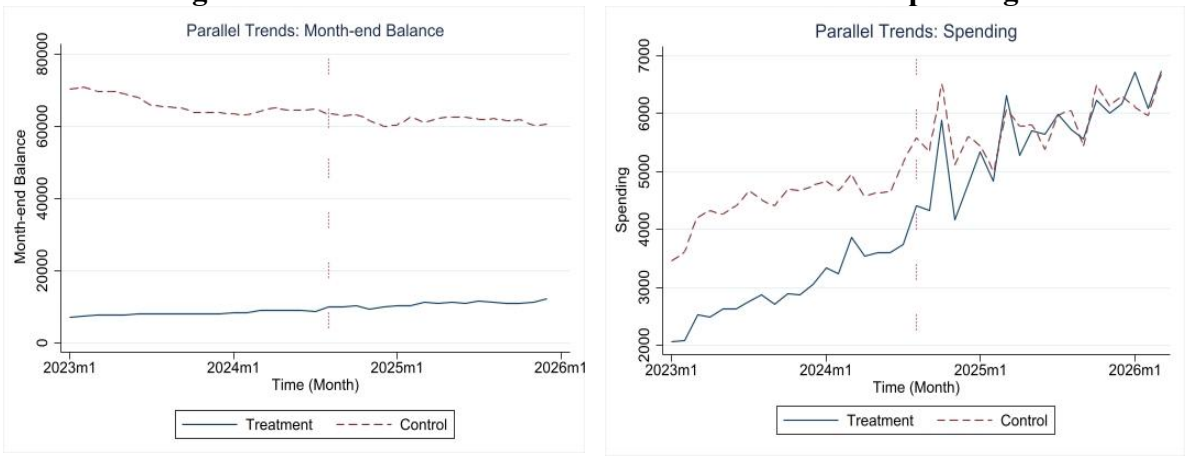
$Y_{it}(0)$ denote the outcome for individual *i* and month *t* in the absence of treatment. The parallel trends assumption holds when the average change in outcomes for the treatment group would have been equal to the control group when there is no intervention. This assumption implies that, in the absence of the *Mukhyamntri Majhi Ladki Bahin Yojana*, beneficiaries and the non-beneficiary women would have followed similar trends in the outcome variable over time. Additionally, any post intervention divergence in the outcomes between the two groups can be attributed to the policy.

In Figure 1 presents the pre-treatment trends in savings and spending for the treatment and control groups. The vertical dashed line denotes the commencement of the yojana. In savings panel, both the treatment and control groups exhibit relatively stable trends during the pre-treatment period. Although the levels of accounts balances differ between the two groups, the trajectories remain broadly parallel prior to the introduction of the scheme, suggesting the absence of differential pre-treatment trends. This provides preliminary support for the parallel trend assumption underlying the TWFE-DiD framework.

Before the implementation of the scheme in the spending panel, treatment and control groups follows a comparable upwards trend, with no evidence of a systematic divergence between two series. The similarity in pre-treatment spending patterns indicates that, in the absence of treatment, the two groups would likely have continued to experience similar changes in

spending. After the introduction of the yojana, noticeable changes emerge in both outcomes. The treatment group records an increase in account balance and spending relative to the control group, suggesting a positive effect of the cash transfer programme on women's financial resources and consumption behaviour.

Figure 1: Parallel Trend for Month-end Balance and Spending



Source: Authors estimates

4.2.2. Identification Strategy: Staggered DiD (Odisha)

To estimate the causal impact of the Subhadra Yojana on women's savings and consumption behaviour, we used a Difference-in-Difference (D-i-D) framework with staggered treatment timing. The staggered design is necessitated by the fact that the beneficiaries received the first instalment in different months, creating multiple treatment cohorts. The conventional TWFE estimator is potentially biased under staggered treatment when treatment effects are heterogeneous across cohorts, as recently demonstrated by de Chaisemartin and D'Haultfoeuille (2020) and Goodman-Bacon (2021). To overcome these limitations, we adopt the group-time average treatment effect estimator proposed by Callaway and Sant'Ann (2021), which is specifically designed for staggered treatment adoption settings. The Callaway-Sant'Anna (2021) estimator proceeds in two steps. In the first step, it computes group-time average treatment effects on the treated $ATT_{(g,t)}$ the average effect on cohort g (defined by the period of first treatment) at calendar time t using Doubly-Robust Inverse Probability Weighted (DRIPW) estimation.

$$ATT_{(g,t)} = E[Y_t(1) - Y_t(0) | G = g] \ldots\ldots\ldots (3)$$

$Y_t(1)$ is the potential outcome for treated individuals at time t, $Y_t(0)$ is the potential outcome in the absence of treatment, $G = g$ denotes individuals who first receive treatment in period g. Estimator compares outcomes for treated units with those not-yet-treated at each period.

In the second step, it aggregates these cohort-time-specific estimates into an overall Average Treatment Effect on the Treated (ATT) using weights proportional to cohort size. This approach avoids the contamination problem of TWFE under heterogeneous effects.

$$ATT = \sum_g \sum_t w_{g,t}\ ATT(g,t) \ldots\ldots\ldots (4)$$

Where $w_{g,t}$ is the weights based on cohort size, and $ATT(g,t)$ is the treatment effect for cohort g at time t. This estimator appropriately accounts for staggered treatment timing, accommodates heterogeneous treatment effects across cohorts and period, and provides unbiased estimates under the parallel trend assumption.

To examine the dynamic effects of program participation, an event-study framework is employed. The event-study specification estimates treatment effects relative to the timing of treatment and allows for the analysis of both pre-treatment and post-treatment dynamics.

$$ATT(e) = E\left[Y_{g+e}(1) - Y_{g+e}(0) | G_i = g\right] \ldots\ldots\ldots\ldots (5)$$

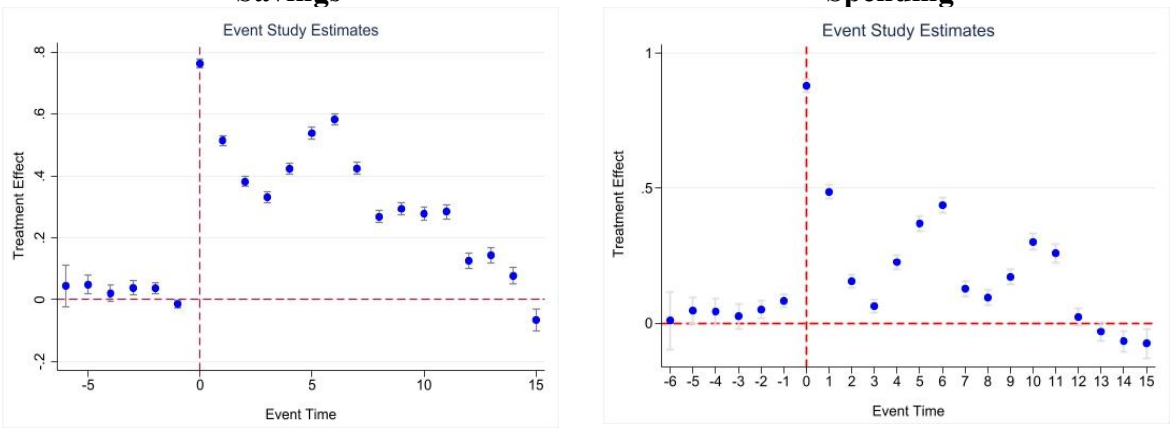
The $ATT(e)$ is the average treatment effect at event time e and e is the time relative to treatment. g is the period individuals first receive treatment, $Y_{g+e}(1)$ is the potential outcome under treatment, and $Y_{g+e}(0)$ is the potential outcome without treatment.

The event-study analysis serves important purposes. First, it provides evidence on whether the impact of the Subhadra Yojana evolves over time following receipt of benefits. Second, it offers a visual assessment of the parallel trends assumption by examining whether pre-treatment coefficients are statistically indistinguishable from zero.

Figure 2 reports the dynamic treatment effects of Subhadra Yojana participation on women's account savings and spending. The horizontal axis represents event time relative to the receipt of the first benefit transfer ($e=0$), while the vertical axis reports the estimated treatment effects. The red dashed vertical line indicates the treatment period. The pre-treatment coefficients ($e<0$) for both savings and spending are statistically indistinguishable from zero, supporting the parallel trends assumption. Following treatment, account balances increase sharply and remain positive throughout the post-treatment period, indicating a sustained improvement in women's savings. Spending also rises immediately after programme participation, reflecting increased consumption following receipt of transfers; however, the effect gradually declines over time. The results suggest that the programme positively affected both savings and consumption behaviour, with stronger persistence observed for savings outcomes.

Figure 2: Event-study estimate: Savings and Spending

Savings **Spending**



Source: Authors estimates

5. Overview of Women's Income Support Schemes across States

Cash transfer programmes have increasingly emerged as an important policy instrument for addressing poverty, improving household welfare, and strengthening women's economic agency in developing economies. While much of the earlier evidence focused on conditional cash transfer programmes, recent policy approaches have shown growing interest in unconditional cash transfers due to their lower administrative burden and greater flexibility for beneficiaries.

In the Indian context, several state governments have introduced unconditional cash transfer schemes specifically targeted toward women as part of broader social protection and welfare strategies. Although these programmes share the common objective of providing regular income support, they differ substantially in terms of eligibility conditions, transfer amounts, and fiscal commitments. Such variations across states provide important institutional and policy context for understanding the expanding role of direct cash transfer mechanisms in India. Table 3 presents a comparative overview of major women-focused cash transfer programmes implemented by Indian states as of 2025-26. These schemes aim to enhance women's economic security through direct income support, although their eligibility criteria, benefit levels, and fiscal commitments vary considerably across states.

Most schemes primarily target adult women from economically weaker households, with eligibility generally determined by age and annual family income thresholds. While some states impose additional conditions such as marital status, as seen in Chhattisgarh's *Mahtari Vandan Yojana*, others adopt broader inclusion criteria, such as Karnataka's *Gruha Lakshmi Yojana*.

Table 3: Unconditional cash transfers schemes for women across state

State	Name of the scheme	Eligibility Criteria	Benefit (Rs per month)	Budget Provision (BE 2025-26, Rs crore)
Assam	Orunodoi Scheme	Women over the age of 18 years. Family income less than Rs 2 lakh per annum	1,250	5,000
Chhattisgarh	Mahtari Vandan Yojana	Married women over the age of 21. Family income less than Rs 2.5 lakh per annum	1,000	5,500
Delhi	Mahila Samriddhi Yojana	18-60 years. Family income less than Rs 3 lakh per annum	2,500	5,110
Himachal Pradesh	Indira Gandhi Pyari Behna Sukh Samman Nidhi Yojana	Phased roll-out on the basis of beneficiaries - 18 to 59 years	1,500	138
Haryana	Lado Laxmi Yojana	Women over the age of 18 years. Family income less than Rs 1 lakh per annum	2,100	5,000
Jharkhand	CM Maiyan Samman Yojana	18-50 years. Family income less than Rs 8 lakh per annum	2,500	13,363
Karnataka	Gruha Lakshmi Yojana	Women over the age of 18 years	2,000	28,608
Maharashtra	Mukhyamantri Majhi Ladki Bahin Yojana	21-65 years. Family income less than Rs 2.5 lakh per annum	1,500	26,500
Madhya Pradesh	Mukhyamantri Ladli Behna Yojana	21-60 years. Family income less than or equal to Rs 2.5 lakh per annum	1,250	18,669
Odisha	Subhadra Scheme	21-60 years. Family income less than Rs 2.5 lakh per annum	833	10,145
Tamil Nadu	Magalir Urimai Thogai	21 years and above. Family income less than Rs 2.5 lakh per annum	1,000	13,807
West Bengal	Annapurna Bhandar	25-60 years	3,000	36,000[#]

Source: Respective scheme websites; State Budget Documents; PRS
Note: #The West Bengal government has migrated or is in the process of migrating existing Lakshmir Bhandar beneficiaries to the upgraded Annapurna Bhandar Scheme which offers ₹3,000 per month and budget provision of Rs 36,000 cr for FY 27.

The monthly transfer amount also varies significantly across states, ranging from approximately Rs 833 under Odisha's *Subhadra Yojana* to Rs 2,500 under schemes such as Delhi's *Mahila Samriddhi Yojana* and Jharkhand's *CM Maiyan Samman Yojana*. These differences indicate substantial heterogeneity in the scale of income support provided to beneficiaries. Likewise, state budget allocations demonstrate considerable variation in fiscal

commitment toward such programmes. West Bengal records the highest budget provision at Rs 36,000 crore for the *Mukhyamantri Majhi Ladki Bahin Yojana*, followed by Karnataka, reflecting the increasing importance of women-focused cash transfer programmes in state welfare expenditure.

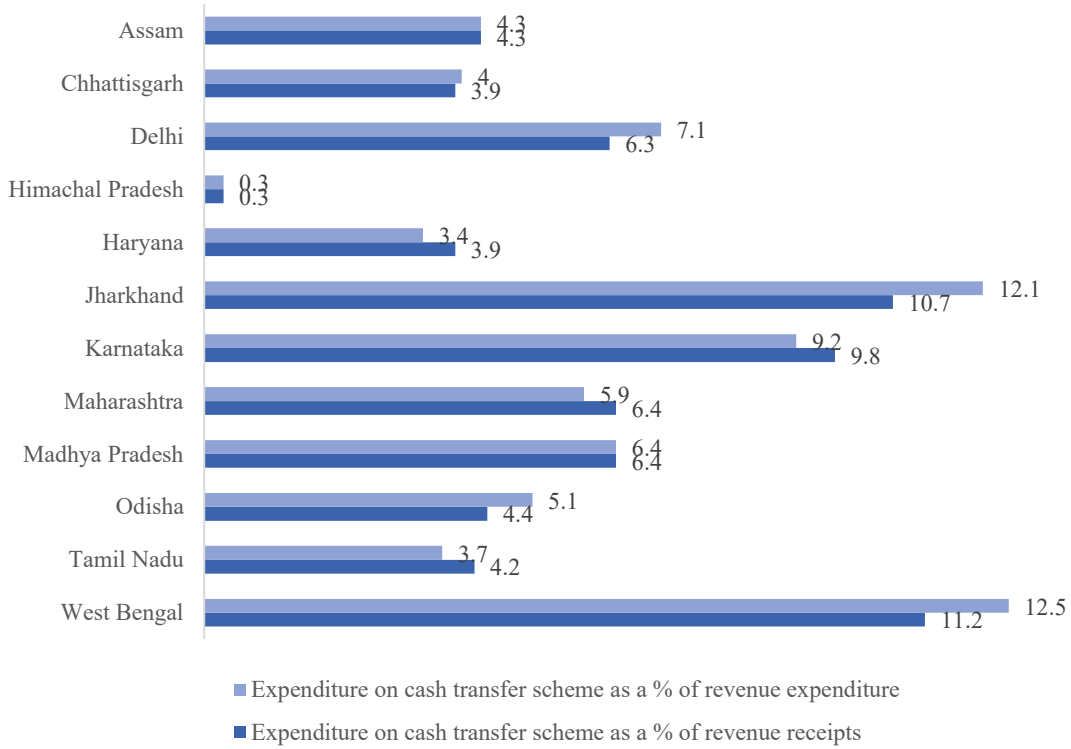
The table further illustrates the growing policy emphasis on direct income support as an instrument for improving women's economic security and household welfare. The expansion of such schemes across states suggests a broader shift toward cash-based welfare interventions, while differences in programme design may potentially generate varying socio-economic outcomes. These institutional differences provide an important context for interpreting the empirical findings presented in the subsequent sections.

6. Fiscal Commitment toward Women-Centric Unconditional Cash Transfer Schemes

Figure 3 shows state-wise expenditure on women-centric cash transfer schemes as a percentage of revenue expenditure and revenue receipts. The figure indicates significant variation in fiscal commitment across states. West Bengal records the highest expenditure share, followed by Jharkhand and Karnataka, suggesting a greater allocation of fiscal resources toward direct income support programmes. In contrast, states such as Himachal Pradesh and Haryana devote comparatively lower proportions of their budgetary resources to these schemes.

The observed differences suggest considerable heterogeneity in the scale and intensity of policy implementation across states. States with larger expenditure shares appear to place greater emphasis on direct income support as a welfare strategy, whereas states with lower expenditure ratios may rely on a broader mix of social protection interventions. The relatively high expenditure ratios in some states also indicate that unconditional cash transfers have evolved from supplementary welfare measures into significant components of state fiscal policy. Recent evidence suggests that women-targeted cash transfer schemes have expanded rapidly across India and have increasingly become an important pillar of state welfare expenditure. Estimates indicate that spending on such schemes has increased substantially in recent years, reflecting their growing policy importance.

Figure 3: Expenditure on Cash Transfer Schemes as a Percentage of Revenue Expenditure and Revenue Receipts



Source: Respective scheme websites; State Budget Documents 2025-26, West Bengal Budget Documents 2026-27; PRS.
Note: West Bengal's numbers are from the State Budget 2026-27, remaining States are form 2025-26 Budget documents.

7. Empirical Results

7.1. Maharashtra: Impact of the Ladki Bahin Yojana

Table 4 reports the TWFE Difference-in-Differences (DiD) estimates for the impact of the Ladki Bahin Yojana on month-end account balances. The average month-end balance of beneficiary households increased from Rs 8,201 in the pre-policy period to Rs 15,085 in the post-policy period. The estimated DiD coefficient indicates that the programme increased beneficiaries' month-end balances by approximately Rs 6,884 relative to the control group, corresponding to an increase of about 84% over the pre-policy average balance. The effect is statistically significant at the 1% level. Notably, the increase amounts to nearly 4.6 times the monthly transfer amount of Rs 1,500, suggesting that beneficiaries retained a substantial share of the transfers and accumulated savings over time. The findings point to an improvement in household liquidity and a strong precautionary savings response following programme participation.

Table 4: TWFE-DiD Estimates for Maharashtra

Variables	Month-end Balance (Savings)	Spending
Treatment*Post	6884***	1349***
	(1092.01)	(137.44)
Constant	27122***	2491***
	(421.37)	(65.99)
Individual FE	YES	YES
Month FE	YES	YES
Observations	1,603,692	1,737,333
Groups	44,547	44,547
F-statistics	11.07	51.91
Prob > F	0.000	0.000

Robust standard errors in parentheses, Standard errors clustered at individual level
*** p<0.01, ** p<0.05, * p<0.1

The programme also had a positive and statistically significant effect on spending. The estimated DiD coefficient of Rs 1,349 implies that beneficiaries increased their monthly expenditure by this amount relative to the control group in the post-policy period. Relative to the pre-policy average spending level of Rs 2,962, this corresponds to an increase of approximately 46%. The estimated Marginal Propensity to Consume (MPC) is approximately 0.90, implying that out of the Rs 1,500 monthly transfer, spending increases by about Rs 1,349 on average. The findings indicate that the cash transfers not only improved beneficiaries' savings positions but also enhanced their consumption capacity. Taken together, the results suggest that recipients allocated a portion of the transfer towards immediate household expenditure while simultaneously retaining a significant share as savings, reflecting improved financial resilience and liquidity.

7.1.1. Heterogeneous Effects by Age Group

Table 5 presents the heterogeneous effects of the Ladki Bahin Yojana across age groups in Maharashtra. The results indicate substantial variation in beneficiaries' financial responses to the programme. The impact on month-end account balances increases with age, rising from Rs 1,705 among beneficiaries aged 21-29 years to Rs 10,835 among those aged 55 years and above. Relative to the pre-policy averages, these effects correspond to increases of approximately 33%, 80%, 72%, and 91% for the 21-29, 30-44, 45-54, and 55 and above age groups, respectively.

Table 5: TWFE-DiD Results: Age Category

Variables (Age Group)	Month-end Balance (Savings)	Spending
Age 21-29	1705***	869.42*
	(1291.14)	(517.72)
30-44	6167***	1019.51***
	(1669.84)	(267.55)
45-54	7341***	970.77***
	(2320.62)	(328.92)
55 above	10834.8	485.30***
	(2287.82)	(163.39)

Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1
Notes: Each coefficient represents the TWFE-DiD estimate for the respective age group. All specifications include individual and month fixed effects with standard errors clustered at the individual level.

The spending response exhibits a different pattern. Beneficiaries aged below 30 years recorded the largest proportional increase in spending, with expenditure rising by approximately Rs 869, representing a 21% increase over the pre-policy average. The 30-44 and 45-54 age groups experienced spending increases of approximately 31% and 47%, respectively, while beneficiaries aged 55 above years recorded a relatively smaller increase of 38%. Overall, the findings suggest that older beneficiaries were more likely to accumulate savings from the transfers with the anticipation of any possible medical and other expenditure in future (De Nardi et al., 2010; Mitchell & Lusardi, 2023), whereas younger beneficiaries allocated a relatively larger share towards consumption expenditure (Furnham, 1999; Owusu et al., 2020).

7.1.2. Heterogeneous Effects by Education

The heterogeneous effects of the Ladki Bahin Yojana across educational categories are in Table 6. The results indicate positive and statistically significant impacts on both savings and spending across most education groups. For month-end account balances, the largest effects are observed among beneficiaries with lower levels of educational attainment. Illiterate beneficiaries experienced an increase of approximately Rs 7,521 in savings, representing an 85 % increase relative to the pre-policy average. Similarly, under-matriculate and matriculate beneficiaries recorded increases of approximately 95% and 80%, respectively. Graduates also exhibited a significant increase in savings of about Rs 6,755, corresponding to a 72% increase over the pre-policy average.

The programme also had a positive effect on month-end balances across educational groups, indicating an improvement in beneficiaries' savings capacity and financial resilience. The estimated increases were particularly pronounced among individuals with lower levels of educational attainment, suggesting that the additional income provided by the programme

helped relax liquidity constraints and enabled households to retain a portion of their income as savings. This finding is consistent with evidence that cash transfer programmes facilitate the accumulation of savings and financial assets among economically vulnerable households (Haushofer & Shapiro, 2016). It also aligns with the broader literature on financial inclusion, which shows that regular and predictable income flows can enhance savings behaviour and strengthen household financial security, especially among low-income populations facing limited access to formal financial instruments (Dupas & Robinson, 2013; Demirgüç-Kunt et al., 2018).

A positive and statistically significant effect is also observed for spending across educational categories. Monthly expenditure increased by approximately Rs 899 among illiterate beneficiaries, Rs 1,430 among under-matriculates, and Rs 1,489 among matriculates, corresponding to increases of 33%, 56%, and 40%, respectively, relative to pre-policy spending levels. The magnitude of these effects indicates that the transfer facilitated higher consumption among recipient households, particularly among individuals with lower levels of educational attainment. The relatively larger proportional increase observed among under-matriculate beneficiaries suggest that the cash transfer was effectively translated into higher consumption expenditure, with the strongest relative response observed among beneficiaries with lower educational attainment.

Table 6: TWFE-DiD Results: Education

Variables (Educational category)	Month-end Balance (Savings)	Spending
Illiterate	7520.83***	899.15***
	(1403.15)	(171.22)
Under Matriculate	5878.50***	1430.36***
	(1692.47)	(254.60)
Matriculate	6301.41***	1488.67***
	(2098.94)	(430.21)
Graduation	6755.26**	910.22*
	(2860.31)	(507.97)
Post-Graduation	9796.71	3294.91
	(9504.91)	(1436.85)
Others	5664.84***	1190.07***
	(1656.61)	(186.14)

Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

Notes: Each coefficient represents the TWFE-DiD estimate for the respective educational category. All specifications include individual and month fixed effects with standard errors clustered at the individual level.

Such patterns are consistent with the expectation that liquidity-constrained households are more likely to utilize additional income for immediate consumption needs rather than long-term asset accumulation (Johnson et al., 2006; Haushofer & Shapiro, 2016). The findings also

align with evidence from cash transfer programmes in developing economies, which shows that low-income and financially vulnerable households tend to exhibit larger marginal propensities to consume out of transfer income (Fiszbein & Schady, 2009; Bastagli et al., 2016).

7.1.3. Religious Heterogeneity in Savings and Consumption Effects

Table 7 presents the TWFE-DiD estimates of the programme's impact on month-end balances (savings) and spending across religious groups. The results reveal statistically significant improvements in both financial outcomes and consumption for several religious communities. For month-end balances, the programme generated significant increases among Hindu, Muslim, and Other beneficiaries. Hindu beneficiaries experienced an average increase of Rs 7,641 in month-end balances, significant at the 1% level. Muslim beneficiaries recorded an increase of Rs 5,385, significant at the 5% level, while beneficiaries belonging to the Other category exhibited an increase of Rs 6,086, significant at the 1% level. These findings suggest that the transfer enhanced the capacity of beneficiary households to accumulate savings and strengthen their financial resilience. The positive effects may reflect the role of social protection programmes in reducing economic vulnerability and improving financial security among disadvantaged communities (Sabates-Wheeler & Devereux, 2008; Barrientos, 2010). Although positive coefficients are observed for Buddhist and Christian beneficiaries, these estimates are not statistically significant and therefore do not provide conclusive evidence of programme effects on savings for these groups.

Table 7: TWFE-DiD Results: Religious Group

Variables (Educational category)	Month-end Balance (Savings)	Spending
Hindu	7640.51***	1393.98***
	(1185.05)	(146.22)
Islam	5384.78**	1754.84***
	(2406.32)	(551.43)
Buddhist	11407.47	1695.68
	(12531.32)	(1840.74)
Christian	35263.54	-1307.26
	(21992.66)	(1867.38)
Others	6086.28***	945.11***
	(1873.34)	(264.21)

Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

Notes: Each coefficient represents the TWFE-DiD estimate for the respective religious group. All specifications include individual and month fixed effects with standard errors clustered at the individual level. Others include Sikh, Jain, and No Religion

The spending results indicate significant increases in spending among Hindu, Muslim, and Other beneficiaries. Monthly expenditure increased by approximately Rs 1,394 among Hindu

beneficiaries, Rs 1,755 among Muslim beneficiaries, and Rs 945 among beneficiaries in the Other category, with all three estimates significant at the 1% level. Among the significant estimates, the largest increase was observed for Muslim beneficiaries, suggesting a relatively stronger consumption response following receipt of programme benefits. This pattern is consistent with evidence that income support programmes improve the consumption capacity of economically vulnerable households by easing liquidity constraints and enabling greater expenditure on household needs (Devereux & Sabates-Wheeler, 2004; Kabeer, 2014). In contrast, the estimated effects for Buddhist and Christian beneficiaries are statistically insignificant and should not be interpreted as evidence of programme impacts.

Thus, the findings indicate that the programme contributed to both higher savings and increased expenditure among Hindu, Muslim, and Other beneficiaries. The simultaneous improvement in month-end balances and consumption suggests that households were able to meet immediate expenditure requirements while also strengthening their financial position, highlighting the broader welfare-enhancing role of income support programmes across socially diverse populations.

7.1.4. Impact of the Ladki Bahin Yojana on Digital Behavior

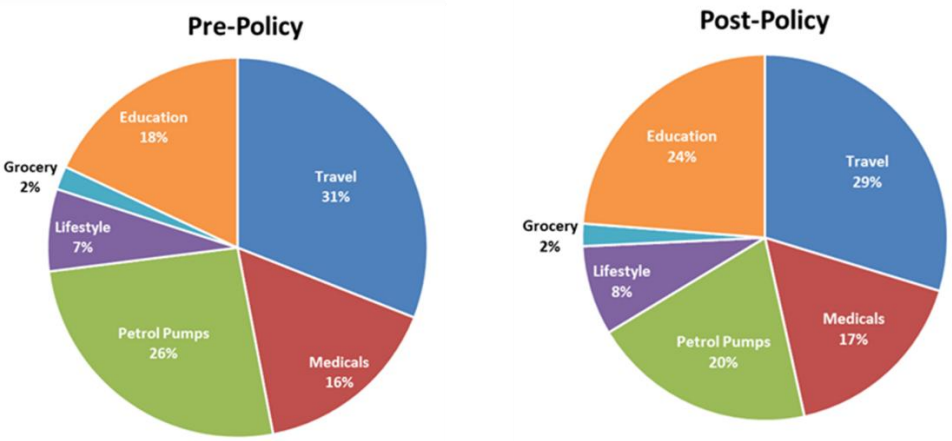
Beyond the direct effects of cash transfers on household savings and consumption outcomes, an emerging body of literature argues that welfare interventions may also generate broader behavioural changes through greater engagement with formal financial systems. The increasing use of cash transfer mechanisms has been viewed as an important pathway for strengthening financial inclusion by integrating beneficiaries into banking networks and promoting the adoption of digital payment systems (Suri & Jack, 2016; Demirgüç-Kunt et al., 2018). In particular, regular income support delivered through bank-linked transfer systems may influence transaction behaviour by reducing dependence on cash and encouraging greater use of digital financial channels. Against this backdrop, the present analysis examines the impact of the *Mukhyamantri Majhi Ladki Bahin Yojana* on beneficiaries' digital transaction behaviour. To analyse changes in expenditure patterns and digital transaction behaviour, transaction-level data were classified into meaningful expenditure categories using a multi-stage classification approach. The categorisation process combined information from transaction records, merchant identifiers, and location details to improve the accuracy and coverage of expenditure classification. Initially, transaction-level information for UPI payments and ATM withdrawals was extracted, including Merchant Category Codes (MCCs), merchant names, transaction descriptions, and terminal location details. MCC were used as the primary classification

mechanism for UPI transactions, as these codes provide a standardized method for identifying the nature of merchant activity and expenditure type. Transactions were subsequently grouped into broader categories such as food, healthcare, education, travel, lifestyle, utilities, and other consumption-related activities.

For transactions with missing or ambiguous MCC, merchant names and location identifiers were used as supplementary classification variables. In addition, a keyword-based matching procedure was applied to merchant descriptions and terminal details to improve category assignment and reduce classification errors. This approach enhanced consistency across transactions and increased the proportion of successfully classified observations.

The multi-stage classification framework enabled a more comprehensive analysis of expenditure behaviour by converting raw transaction records into interpretable spending categories. Such categorisation facilitates the examination of changes in consumption composition and digital financial behaviour following the implementation of the cash transfer programme.

Figure 4: Average ATM Spending Share by Category (%)



Source: Computed using the sample individuals account spending

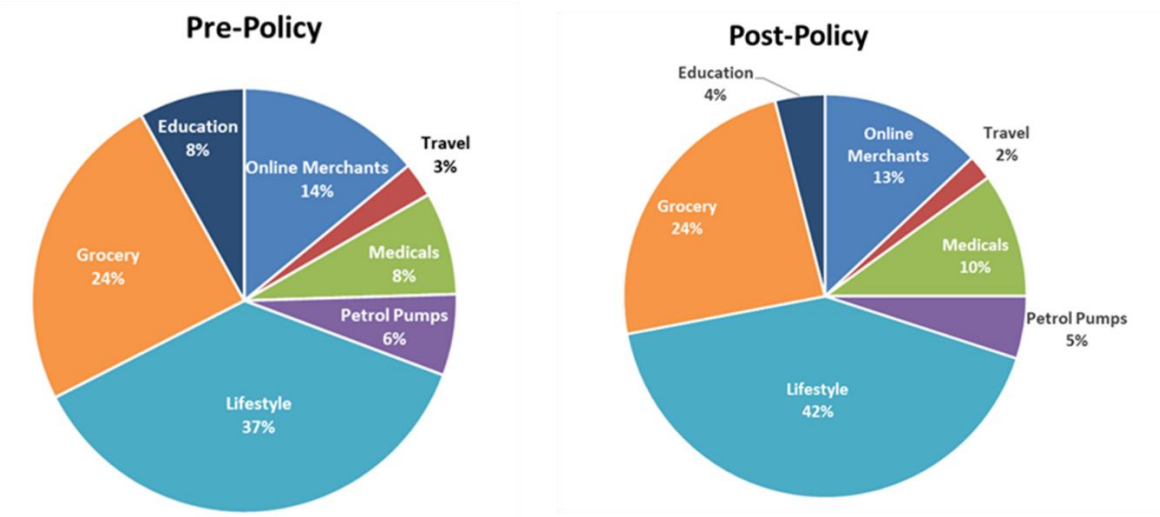
The category-wise distribution of ATM-based expenditure from Figure 4 indicates that travel related expenditure continued to account for the largest proportion of ATM transactions in both the pre-policy and post-policy periods, although its share declined marginally from 31% to 29%. This suggests that mobility and transport related expenses remained a primary component of cash-based spending among beneficiaries.

A modest increase was observed in education-related expenditure, with the share of spending rising by approximately six percentage points from 18% to 24% after the implementation of

the scheme. The increase in education expenditure may indicate greater allocation of resources toward human capital-related activities, reflecting improvements in household financial flexibility. However, the overall expenditure composition across categories remained broadly stable, suggesting that while the cash transfer programme increased the level of expenditure, and it did not substantially alter core spending priorities among beneficiaries.

The relatively stable composition of ATM expenditure further suggests that beneficiaries continued to rely on cash withdrawals primarily for routine and essential household needs. Therefore, the policy appears to have generated incremental changes in expenditure allocation.

Figure 5: Average UPI Spending Share by Category (%)



Source: Computed using the sample individuals account spending

Figure 5 depicts the category-wise composition of UPI expenditure indicates noticeable changes in beneficiaries' digital spending. Unlike ATM-based expenditure, which remained relatively stable across spending categories, UPI transactions exhibited more visible changes in expenditure allocation during the post-policy period. In particular, the share of lifestyle-related expenditure increased from approximately 37% in the pre-policy period to around 42% in the post-policy period, reflecting an increase of nearly five percentage points. Similarly, medical expenditure increased from approximately 8% to 10%, representing an increase of around two percentage points. At the same time, categories such as travel and routine household expenditure recorded comparatively smaller changes in expenditure shares.

The increase in lifestyle expenditure suggests that beneficiaries experienced greater financial flexibility after receiving regular cash transfers, allowing households to allocate a portion of additional income toward discretionary and quality-of-life-related consumption. Similarly, the increase in medical expenditure may indicate improved access to healthcare-related spending

and greater ability to address health-related needs. Existing literature on cash transfer programmes suggests that additional income support can relax liquidity constraints and enable households to diversify expenditure patterns beyond immediate subsistence requirements (Fiszbein & Schady, 2009; Haushofer & Shapiro, 2016).

The observed shift in UPI expenditure composition further suggests that digital payment channels may facilitate greater responsiveness in household spending decisions. Thus, Ladki Bahin Yojana influenced not only the overall level of expenditure but also the composition of digital spending behaviour by encouraging relatively greater expenditure on welfare-enhancing and non-essential consumption categories.

7.2. Odisha: Impact of the Subhadra Yojana

The staggered difference-in-differences estimates based on the Callaway and Sant'Anna (2021) estimator in Table 8 indicate that the policy had a positive and statistically significant effect on month-end balances and spending. The estimated average treatment effect on the treated (ATT) is 0.375, implying an approximately 46 % increase in month-end balances following policy exposure. Evaluated at the pre-policy mean balance of Rs. 15,146, this corresponds to an average increase of approximately Rs. 6,887 per treated account. The positive effect suggests that the policy substantially strengthened account balances among beneficiaries relative to the counterfactual trend observed in untreated cohorts.

Table 8: Staggered DiD Estimates for Odisha

Estimate	**Log month-end balance (Savings)**	**Log Spending (Withdrawal)**
ATT	0.375*** (0.008)	0.244*** (0.011)
Age Group		
21-29 years	0.347*** (0.019)	0.262*** (0.023)
30-44 years	0.381*** (0.012)	0.260**8 (0.017)
45-59 years	0.373*** (0.013)	0.186*** (0.021)
Education Category		
Illiterate	0.546*** (0.038)	0.221*** (0.051)
Under Matriculate	0.446*** (0.029)	0.296*** (0.036)
Matriculate	0.202*** (0.032)	0.411*** (0.042)
Post-Graduation	-0.235 (0.193)	0.456* (0.257)
Professional Education	0.201	0.260

	(0.184)	(0.174)

Robust standard errors in parentheses, Standard errors clustered at individual level
*** p<0.01, ** p<0.05, * p<0.1
Notes: Each coefficient represents the Staggered DiD estimate for the respective age group and educational categories.

The age-disaggregated staggered difference-in-differences estimates indicate that the policy generated substantial improvements in month-end balances across all age cohorts. While the proportional effects are broadly similar, ranging from approximately 42 to 46%, older beneficiaries in the age group of 30-44 and 45-59 years experienced the largest absolute gains in account balances. Individuals aged 45-59 recorded an average increase of Rs. 8,935, compared with Rs. 6,133 among those with 21-30 years and Rs. 5,924 among those aged 30-44 years. These findings suggest that the policy was effective throughout the age distribution but yielded greater monetary gains among older beneficiaries. One possible explanation is that older individuals typically possess more stable income sources, greater financial experience, and stronger saving habits, enabling them to retain a larger share of the transferred funds in their accounts. Previous studies have shown that age is positively associated with financial prudence, precautionary savings behaviour and account balance accumulation with older adults generally exhibiting lower consumption propensities and higher financial asset holdings than younger individuals. The observed pattern is therefore consistent with the life-cycle hypothesis, which predicts that individuals accumulate financial resources during their working years and maintain larger asset balances as they approach later stages of life (Modigliani & Brumberg, 1954; Deaton, 1992). The results also align with evidence that older beneficiaries are more likely to use government transfers to strengthen household financial buffers rather than increase immediate consumption (Banerjee & Duflo, 2013; Demirgüç-Kunt et al., 2018).

The heterogeneous effects by educational attainment reveal that the policy's impact was concentrated among beneficiaries with lower and moderate levels of education. Among illiterate beneficiaries, average month-end balances increased from Rs 6,171 before receipt of the first instalment to Rs. 10,656 afterward, representing an increase of 73% (Rs 4,485). Similarly, beneficiaries with education below the matriculation level experienced an increase of 34% corresponding, Rs 1,351, while those with matriculation-level education recorded an increase of Rs 2,299, equivalent to 23%. These findings suggest that the policy contributed to improved account balances among relatively less-educated beneficiaries, who may have had greater liquidity constraints and a stronger dependence on government transfers for household financial management. The stronger effects observed among less-educated beneficiaries are

consistent with evidence that government transfers tend to generate larger marginal welfare and liquidity gains among economically vulnerable households facing tighter financial constraints. Less-educated individuals are more likely to have limited access to formal financial services and lower accumulated savings, making direct benefit transfers particularly important for strengthening household liquidity and account balances (Demirgüç-Kunt et al., 2018; Suri & Jack, 2016).

In contrast, although beneficiaries with post-graduate and professional qualifications exhibited substantial absolute changes in balances, these estimates are not statistically significant and therefore cannot be reliably attributed to the policy intervention. The absence of statistically significant effects among higher-educated groups may reflect greater access to alternative income sources, diversified financial instruments, or pre-existing financial stability, reducing the relative importance of the transfer in influencing account balances. Consequently, the evidence suggests that the policy's financial impact was more pronounced among beneficiaries with lower educational attainment, indicating a stronger role in enhancing financial buffers among relatively disadvantaged households.

The spending estimates indicate that beneficiaries did not simply retain the entire transfer in their accounts. Instead, the positive and statistically significant increase in withdrawals suggests that beneficiaries simultaneously utilized part of the transferred funds to meet consumption and household expenditure needs. The overall spending ATT of 0.244 implies an increase of approximately 28%, equivalent to Rs. 1,920 compared to the pre-treatment average. Taken together, the savings and spending results suggest that the transfer generated a dual effect: beneficiaries increased current consumption while also maintaining higher account balances. This pattern is consistent with the literature on cash transfer programmes, which finds that households often allocate transfer income between immediate consumption needs and precautionary savings, thereby improving both short-term welfare and financial resilience (Haushofer & Shapiro, 2016; Bastagli et al., 2016).

The age-specific spending estimates further complement the month-end balance results and provide insights into how beneficiaries allocated the transfer between consumption and savings. Beneficiaries aged 21-29 years experienced a significant increase in spending, with the estimated coefficient of 0.262 implying an increase of approximately 29% relative to the pre-treatment period. This corresponds to an increase in average spending from Rs 6,754 before receiving the first instalment to Rs 8,771 afterward, representing an absolute increase of Rs 2,017. Similarly, beneficiaries aged 30-44 years exhibited a coefficient of 0.260, translating into an increase of approximately 29.7%, with average spending rising from Rs 7,565 to Rs

9,835, an increase of Rs 2,270. In contrast, beneficiaries aged 45-59 years recorded a smaller coefficient of 0.186, corresponding to a 20.4 % increase in spending. Average spending in this group increased from Rs 6,093 to Rs 7,342, representing an increase of Rs 1,249.

When these findings are considered alongside the month-end balance results, an important pattern emerges. Although all age groups experienced substantial increases in account balances, younger and middle-aged beneficiaries exhibited stronger spending responses than older beneficiaries. By contrast, individuals aged 45 years and above recorded the largest increase in month-end balances (Rs. 8,935, approximately 45.2%) but the smallest increase in spending (Rs. 1,249, approximately 20.4%). This suggests that older beneficiaries retained a larger share of the transfer in their accounts, thereby strengthening precautionary savings and financial buffers. Conversely, younger and middle-aged beneficiaries allocated a greater proportion of the transfer toward current household expenditures while simultaneously increasing their account balances. Such behaviour is consistent with the life-cycle hypothesis, which predicts that households with greater current consumption needs and financial obligations exhibit higher propensities to consume additional income, whereas older individuals tend to place greater emphasis on asset accumulation and precautionary savings (Modigliani & Brumberg, 1954; Deaton, 1992).

The findings are also consistent with evidence from cash transfer programmes in developing countries, which shows that transfer recipients frequently divide additional income between immediate consumption and savings, with younger households generally exhibiting stronger consumption responses than older households. Studies by Haushofer and Shapiro (2016) and Bastagli et al. (2016) find that cash transfers increase household consumption while simultaneously improving financial resilience through greater savings and asset accumulation. Similarly, evidence from social protection programmes suggests that older beneficiaries often display more cautious spending behaviour and are more likely to use transfers to strengthen household financial security, whereas younger households allocate a larger share of transfer income to current consumption needs (Fiszbein & Schady, 2009; Banerjee & Duflo, 2011)

7.3. Household Spillover Effects of Cash Transfers

While the preceding analysis focuses on the direct effects of cash transfers on beneficiary women, the benefits of such programs may extend beyond the recipients themselves. In many households, financial resources are pooled and expenditure decisions are made jointly, implying that income received by one member can influence the economic behaviour of other household members (Thomas, 1990; Lundberg et al., 1997). Consistent with collective

household models (Chiappori, 1992), cash transfers targeted to women may generate spillover effects through intra-household resource reallocation, leading to changes in consumption, savings, and overall household welfare. Empirical evidence suggests that such transfers often improve household economic outcomes beyond the direct recipient by relaxing liquidity constraints and enhancing financial resilience (Duflo, 2003; Haushofer & Shapiro, 2016; Bastagli et al., 2019).

Motivated by this literature, we examine whether the *Mukhyamantri Majhi Ladki Bahin Yojana* in Maharashtra and the *Subhadra Yojana* in Odisha generated spillover effects among relatives linked to beneficiary accounts[3]. Specifically, we assess whether the transfer-induced changes in financial behaviour observed among beneficiaries also translated into changes in spending and month-end balances among non-beneficiary household members. The analysis provides evidence on the extent to which the benefits of these programs diffuse within households and contribute to broader household financial well-being. The analysis here exploits account-level banking data of relatives linked to sampled beneficiaries in both Maharashtra and Odisha to trace this intra-household transmission channel.

7.3.1. Spillover Effect on Relatives – Maharashtra

To examine whether the benefits of the scheme extend beyond direct beneficiaries, the analysis considers the financial outcomes of beneficiary-linked relatives. The results indicate significant positive spillover effects on relatives' financial well-being during the post-policy period. The linked relatives' sample in Maharashtra comprises predominantly spouses (68%), followed by children (19%) and parents (13%).

Table 9: Spillover Effects on Relatives- Maharashtra

Outcome Variable (Rs)	Pre-policy Mean (Treated)	Post-policy Mean (Treated)	Change
Month-end Balance	8,234	10,144	1,910
Spending	3,124	1,607	(-) 1,517

Note: Pre-policy period: January 2023-July 2024; Post-policy period: August 2024-December 2025. Treated refers to male relatives linked to Ladki Bahin beneficiaries.

Table 9 presents the pre and post policy financial outcomes of family members linked to Ladki Bahin beneficiaries in Maharashtra. The month-end balance of relatives registers an increase of approximately 23%, rising from Rs 8,234 in the pre-policy period to Rs 10,144 post-policy, reflecting a net improvement of Rs 1,910 in the financial position of the beneficiary's household

[3] We have linked the family members of the relative using the CIF number of the beneficiary account.

members. Concurrently, the average monthly spending of relatives' declines sharply by approximately 49%, from Rs 3,124 to Rs 1,607, representing a reduction of Rs 1,517 in the post-policy period.

These two movements are jointly interpreted as evidence of a financial substitution effect operating at the household level. The regular monthly transfer of Rs 1,500 received by the female beneficiary reduces her reliance on male relatives for day-to-day consumption support, thereby releasing the relative from an implicit financial obligation that was previously reflected in his higher spending levels. As the woman's own consumption needs are increasingly met through the direct transfer, the relative retains a larger share of his income, producing the observed accumulation in month-end balances. This mechanism is consistent with the collective household model (Chiappori, 1988; 1992), wherein income transfers directed to one household member alter the intra-household resource allocation equilibrium, and with empirical evidence from comparable unconditional transfer programmes documenting analogous relief effects on non-recipient household members (Haushofer and Shapiro, 2016; Duflo & Udry, 2004).

It bears emphasis that the observed decline in relative spending does not signify any deterioration in household welfare. The reduction is more accurately characterised as a reallocation of consumption responsibility from the male relative to the female beneficiary, whose own spending is documented to have increased by approximately 46 % over the same post-policy window. The net household-level outcome, higher savings accumulation for the relative alongside expanded consumption for the beneficiary, reflects a more equitable distribution of financial resources within the household, consistent with the broader empowerment objectives of the scheme (Kabeer, 1999; Duflo, 2012). These results confirm that the Ladki Bahin Yojana generates positive and economically meaningful spill over effects that extend beyond the direct beneficiary, improving the financial well-being of linked household members by easing their economic burden and enabling greater savings capacity for the future.

7.3.2. Spillover Effect on Relatives – Odisha

To assess whether the benefits of the Subhadra Yojana extend beyond direct beneficiaries, the analysis examines the relationship between beneficiaries' financial outcomes and the spending behaviour of their family members. The relationship profile of linked relatives in the Odisha sample comprises husbands (40%), fathers (21%), and sons (14%), with the remaining share distributed across other relationship categories. This more dispersed relational structure,

relative to Maharashtra where spousal linkages are dominant, reflects Odisha's higher prevalence of multi-generational household arrangements, particularly in rural and tribal areas (Census of India, 2011), and implies that programme spill overs may be transmitted simultaneously across conjugal and filial household tiers (Townsend, 1994; Fafchamps & Lund, 2003).

Table 10: Impact of Beneficiary Balance on Relatives Spending- Odisha

Dependent Variable	Independent Variable	Coefficient
Relative's Spending	Beneficiary's Month-end Balance	-0.190*** (0.005)
Relative's Spending	Relative's Month-end Balance	0.204*** (0.028)

Robust standard errors in parentheses, Standard errors clustered at individual level
*** p<0.01, ** p<0.05, * p<0.1

The regression result provides evidence of positive household spillover effects (Table 10). Specifically, a 1% increase in the beneficiary's month-end balance is associated with a 0.19 unit decline in the spending of family members. The magnitude of the coefficient implies that a 10% increase in the beneficiary's account balance is associated with a 1.9% decline in the relative's spending, an economically meaningful effect given the lump-sum nature of the Subhadra transfer (Rs 5,000 per instalment). This finding suggests that as beneficiaries experience improved financial security due to the cash transfer, other household members may face lower financial obligations and reduced expenditure pressures and consistent with a progressive reduction in the woman's financial dependence on her household co-residents. These points toward a spillover effect of savings behaviour within the family network, where prudent financial management by beneficiaries may indirectly influence relatives' consumption decisions.

The coefficient of the second specification regresses the relative's spending on his own month-end balance, yielding a positive and significant coefficient of 0.204. This result establishes that the savings accumulation observed in relatives' accounts is not merely passive as the relative's own financial position strengthens, he incrementally expands his own autonomous consumption. The two coefficients together trace the complete household-level adjustment pathway: the beneficiary's transfer receipt reduces the relative's support obligation, the relative accumulates savings from the released financial obligation, and from a strengthened balance position, and the relative subsequently expands his own consumption. This sequence is consistent with the permanent income hypothesis applied at the household member level (Friedman, 1957), whereby individuals' smooth consumption in response to anticipated

changes in the household's income pooling arrangement (Chiappori, 1992; Browning & Chiappori, 1998).

A further and particularly noteworthy finding emerges from the correlation analysis between the Subhadra beneficiary's consumption and the relative's month-end balance, which yields no statistically significant association. This result indicates that the woman's spending decisions are made independently of the relative's financial position, providing empirical evidence of emergent financial autonomy at the individual level. The absence of this correlation suggests that the transfer has fostered independent financial decision-making among women rather than reinforcing pre-existing patterns of intra-household financial dependency, a transition that the empowerment literature identifies as foundational to sustained improvements in women's agency and bargaining power within the household (Kabeer, 1999; Duflo, 2012; Banerjee & Duflo, 2007). This finding is particularly significant in the context of Odisha, where women's financial autonomy has historically been constrained by structural socio-economic disadvantages in rural and tribal communities (Census of India, 2011).

Thus, the evidence from the Subhadra Yojana confirms that the programme generates significant and statistically robust spillover effects within the household. The lump-sum biannual transfer structure of the scheme distinct from the monthly transfer rhythm of the Maharashtra programme produces a periodic savings pulse in relatives' accounts that is temporally anchored to disbursement cycles, while the regression evidence formally establishes the causal pathway from beneficiary balance accumulation to relative expenditure reduction. These findings are consistent with the broader cross-country evidence on intra-household transmission of female-targeted transfers (Attanasio & Lechene, 2002; Duflo & Udry, 2004; Haushofer & Shapiro, 2016) and reinforce the conclusion that the welfare impact of the Subhadra Yojana extends materially beyond its directly targeted beneficiaries.

8. Conclusion

This paper has presented rigorous causal evidence on the financial welfare impacts of two major Indian state-level unconditional cash transfer programmes the *Majhi Ladki Bahin Yojana* in Maharashtra and the *Subhadra Yojana* in Odisha, using account-level monthly panel data and Difference-in-Differences identification strategies. The core findings are as follows.

Firstly, both programmes generate large, statistically significant, and broadly consistent improvements in beneficiaries' savings and consumption. Month-end account balances increase by approximately 84% (Maharashtra) and 45% (Odisha), representing absolute gains of approximately Rs 6,884 and Rs 6,887 per beneficiary respectively, a striking convergence that

provides cross-programme validation of the magnitude of savings impact. Monthly consumption spending increases by 46% and 28% respectively, implying Marginal Propensities to Consume of approximately 0.90 value that are consistent with the theoretical predictions of the buffer-stock model for severely liquidity-constrained households (Deaton, 1991), and with the range of estimates documented in the global UCT literature.

Secondly, the programmes generate meaningful positive spill overs to male household members, whose financial positions improve and whose spending outflows decline consistent with reduced intra-household financial dependency as female beneficiaries' income security improves. The spending basket analysis reveals that the consumption increases are qualitatively welfare-improving, with growing shares of spending directed toward lifestyle, medical, and educational purposes rather than inferior goods. UPI adoption accelerates significantly following transfer receipt in Maharashtra, documenting an important digital financial inclusion dividend.

Thirdly, the policy implications are clear and actionable. Both programmes should be sustained and evolved toward cash-plus architectures that combine the income transfer with voluntary capacity-building, digital literacy, and SHG linkage components. Beneficiary targeting should be strengthened progressively through hybrid multidimensional verification frameworks that enhance precision while ensuring no deserving woman is excluded. Transfer amounts should be reviewed periodically for adequacy in light of inflation and evolving household expenditure patterns, with efficiency gains from improved targeting deployed to fund enhanced benefits and complementary services for beneficiaries.

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