Post-COVID-19 Livelihood Recovery: Assessing the Impact of the Pradhan Mantri Garib Kalyan Yojana (PMGKY) on Rural Households in Uttar Pradesh

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Abstract—The COVID-19 pandemic posed unprecedented socio-economic challenges for India's rural population, disrupting livelihoods, employment, and income stability. In response, the Government of India introduced the Pradhan Mantri Garib Kalyan Yojana (PMGKY) as an emergency social protection package aimed at safeguarding vulnerable households through food, cash, and employment support. This study empirically examines the impact of PMGKY on income and employment recovery among rural households in Uttar Pradesh during the post-pandemic phase. Using a multi-stage random sample of 600 households across four districts Auraiya, Lucknow, Chitrakoot, and Siddharthnagar primary data were collected and analysed through descriptive and inferential statistical tools, including percentage analysis, mean score comparison, Chi-square test, correlation, and regression analysis.

The results demonstrate a significant positive impact of PMGKY on livelihood restoration. Average monthly income increased by 40 percent post-intervention, and employment levels improved from 52 percent during the lockdown to 73 percent in 2022. The Chi-square test (χ^2 = 281.72, p < 0.001) confirmed a strong association between PMGKY participation and employment recovery, while correlation (r = 0.642, p < 0.01) and regression ($R^2 = 0.368$) analyses identified awareness and education as key determinants of benefit utilisation. Despite high awareness (85%) and substantial participation (71%), challenges such as payment delays, biometric errors, and limited digital literacy persisted. The study concludes that PMGKY served as an effective short-term relief mechanism but requires institutional reforms and digital inclusion to ensure sustainable livelihood resilience in rural India.

Index Terms—Post-COVID recovery, Pradhan Mantri Garib Kalyan Yojana, rural livelihoods, employment recovery, income restoration, welfare participation, Uttar Pradesh, social protection

I. INTRODUCTION

The outbreak of the COVID-19 pandemic in early 2020 created an unparalleled public health emergency that swiftly evolved into a socio-economic crisis of historic proportions. Lockdowns, transport suspensions, and business closures paralysed economic activity across India, pushing millions of households particularly those dependent on informal work into financial insecurity. Rural areas were confronted with a sudden influx of reverse migrants, loss of non-farm income, and disruptions in supply chains for agricultural produce. Uttar Pradesh, India's most populous state and a major labour-exporting region, experienced one of the largest movements of migrant workers returning from urban centres. The abrupt collapse of employment opportunities and remittance inflows severely affected consumption patterns, food security, and rural livelihoods.

In response to this humanitarian and economic emergency, the Government of India announced the Pradhan Mantri Garib Kalyan Yojana (PMGKY) in March 2020 a ₹1.70 lakh crore relief package aimed at mitigating the immediate distress of the poor and vulnerable. The scheme comprised a combination of direct benefit transfers, subsidised food-grain distribution, free cooking gas cylinders for women under the Ujjwala Yojana, increased wages under the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA), and insurance coverage for frontline health workers. The initiative was further strengthened through complementary programmes such as the Pradhan Mantri Garib Kalyan Anna Yojana (PMGKAY), which provided additional food grains to over 80 crore individuals, and the Garib Kalyan Rojgar Abhiyaan, which sought to generate employment opportunities for returning migrant workers through rural infrastructure projects.

While the immediate relief provided by PMGKY was widely recognised, questions soon arose about its long-term effectiveness in restoring livelihoods once lockdowns were lifted and the economy began to reopen. India's rural economy is characterised by high levels of informality, limited access to institutional finance, and structural dependence on remittances. In such an environment, the sustainability of short-term welfare measures is uncertain. Scholars have argued that welfare packages designed as emergency responses often address consumption needs but fail to promote income resilience or sustainable employment in the post-crisis phase (UNDP, 2022; NITI Aayog, 2023). This concern is especially relevant for Uttar Pradesh, where a substantial portion of the labour force remains engaged in low-productivity sectors and where welfare outreach varies considerably across districts.

Preliminary administrative data suggested that a significant share of rural households in UP benefitted from PMGKY's components, particularly food-grain assistance and cash transfers. However, inconsistencies in coverage, awareness gaps, and delays in benefit disbursement were also reported (Ministry of Rural Development, 2022). Moreover, the extent to which PMGKY contributed to livelihood recovery measured in terms of employment resumption, income restoration, and financial inclusion remains underexplored in empirical literature. Most existing studies concentrate on implementation aspects or macro-level fiscal evaluations, leaving a gap in understanding how the scheme affected household-level economic resilience after the pandemic subsided.

Post-pandemic recovery in India thus provides a crucial context for examining the performance of large-scale welfare interventions. The period from 2021 onwards has witnessed gradual economic reopening, but the recovery trajectory remains uneven across states and population groups. Evaluating PMGKY's role during this stage is essential to determine whether its benefits were transitional or transformative whether they merely alleviated temporary distress or facilitated durable livelihood improvements. Uttar Pradesh offers a representative case, combining high poverty incidence, large rural population, and diverse occupational structures. An empirical assessment of PMGKY's outcomes in this setting can generate policy-relevant evidence for designing more inclusive social-protection mechanisms.

The present study therefore focuses on rural households in four districts of Uttar Pradesh Auraiya, Lucknow, Chitrakoot, and Siddharthnagar that received assistance under PMGKY during and after the COVID-19 crisis. It analyses how the scheme influenced household income, employment patterns, and food security in the post-pandemic period. By comparing pre-pandemic and post-scheme conditions through survey-based data, the paper seeks to quantify the degree of livelihood recovery and identify gaps that persist in the welfare delivery architecture. In doing so, it extends the discourse on welfare efficiency beyond immediate relief toward longer-term socio-economic resilience.

The findings from this study are expected to enrich contemporary debates on the evolution of India's social protection framework. They also hold relevance for developing countries facing similar challenges of informality and welfare targeting in the aftermath of global crises. The subsequent sections review relevant literature, describe the research methodology, present empirical results, and discuss the broader implications of PMGKY for sustainable rural development in post-COVID India.

II. REVIEW OF LITERATURE

The COVID-19 pandemic generated one of the deepest global recessions in recent history, affecting both developed and developing economies. Early analyses underscored that its socio-economic impact extended beyond health shocks, disrupting labour markets, production chains, and public welfare systems (ILO, 2020; World Bank, 2021). Developing countries with large informal sectors faced disproportionate livelihood losses due to limited employment protection and weak social safety nets (FAO, 2021). India, home to more than 450 million informal workers, witnessed extensive job losses and income contraction, especially among daily-wage labourers, migrants, and small farmers (Kesar et al., 2021).

2.1 COVID-19 and Rural Livelihoods in India
The pandemic's effect on India's rural economy was paradoxical: although agriculture cushioned the initial shock, rural non-farm employment plummeted due to

mobility restrictions and declining demand. Studies by the Centre for Monitoring Indian Economy (CMIE, 2021) revealed that rural unemployment spiked to 14% during mid-2020, with over 120 million workers losing jobs nationwide. Migration scholars such as Deshingkar (2021) documented large-scale return migration from cities to villages, placing additional pressure on limited rural resources and social infrastructure.

Research by Dev and Sengupta (2020) and Mehta et al. (2021) highlighted that households dependent on informal non-farm work construction, transport, and small trade faced severe income shocks. Many families reduced consumption, borrowed at high interest rates, or liquidated assets to cope. The pandemic thus exposed the fragility of rural livelihoods and underscored the need for institutional social protection mechanisms capable of absorbing systemic shocks.

2.2 Government Response and Social Protection Measures

To mitigate the crisis, the Government of India introduced multiple welfare and fiscal interventions. Among these, the Pradhan Mantri Garib Kalyan Yojana (PMGKY) emerged as the flagship relief package. According to the Ministry of Finance (2021), PMGKY aimed to provide immediate consumption support to 80 crore individuals through free food grains, direct cash transfers to women Jan Dhan account holders, advance instalments under PM-KISAN for farmers, and wage enhancement under MGNREGA. The scheme also included ₹50 lakh insurance coverage for healthcare workers and free LPG cylinders for poor households under the Ujjwala Yojana.

Subsequent initiatives such as the Garib Kalyan Rojgar Abhiyaan (GKRA) launched in June 2020 targeted employment generation for returning migrant workers. GKRA focused on rural infrastructure projects like road building, water conservation, and housing construction (Ministry of Rural Development, 2021). Similarly, the Pradhan Mantri Garib Kalyan Anna Yojana (PMGKAY) extended free food grains beyond the initial three-month phase, ensuring food security during prolonged lockdowns.

Several policy evaluations have documented the scope and scale of these interventions. A study by Bhattacharya and Narayanan (2022) found that

PMGKY's food subsidy component significantly reduced hunger during the peak pandemic months. NITI Aayog (2023) estimated that approximately 90% of rural households in major states accessed at least one PMGKY benefit. However, disparities in access were evident: the poorest quintile and remote rural households reported lower awareness and higher transaction costs, especially where digital infrastructure was weak.

2.3 Empirical Evidence on Welfare Outcomes

Empirical research assessing welfare outcomes of pandemic-related relief in India has expanded rapidly. Chandrasekhar and Ghosh (2022) used household panel data to show that direct benefit transfers improved short-term consumption smoothing but did not significantly influence employment recovery six months after lockdowns. Similarly, Jalan and Mahapatra (2023) observed that free food-grain distribution under PMGKAY prevented acute hunger but failed to address long-term income insecurity.

In the context of Uttar Pradesh, Mishra (2022) found that PMGKY's effectiveness was uneven across districts due to administrative bottlenecks and awareness gaps. Districts with better coordination between panchayats and local banks exhibited higher beneficiary satisfaction. Conversely, areas with high illiteracy and limited digital penetration experienced delays in Direct Benefit Transfer (DBT) payments. A study by Saxena and Singh (2023) further reported that although food support reached most households, employment restoration lagged due to limited convergence with MGNREGA and other livelihood programmes.

Studies in other states present comparable patterns. In Bihar, Kumar and Pathak (2022) documented that while 78% of surveyed households received food assistance, only 42% benefited from cash transfers. In Madhya Pradesh, Sharma (2022) found that the cash component contributed to meeting basic consumption but did not increase productive investments. These findings collectively indicate that PMGKY's design prioritised immediate relief rather than sustainable livelihood enhancement.

2.4 Role of Awareness, Accessibility, and Implementation Challenges

Awareness and information asymmetry significantly affect welfare programme outcomes. Scholars such as

Dreze and Khera (2021) argue that leakages and under-coverage in Indian welfare schemes stem from weak grievance redressal, limited transparency, and inadequate outreach. Awareness of eligibility criteria and procedural requirements often determines whether potential beneficiaries access benefits (Narayanan & Shah, 2022).

In Uttar Pradesh, administrative studies have shown that local governance capacity influences scheme uptake. The Department of Labour (2022) reported that out of approximately 16.3 million registered construction workers, only 59% were aware of their entitlement under the Building and Other Construction Workers (BoCW) component linked to PMGKY. Similar trends appeared in digital transfers: despite the expansion of Jan Dhan accounts, women in low-literacy households faced barriers in accessing cash benefits due to documentation issues or restricted mobility.

These implementation gaps underscore the importance of studying awareness and participation jointly with outcome variables such as income and employment recovery. Evaluating PMGKY without accounting for such contextual factors may overestimate its impact on livelihood resilience.

2.5 Theoretical Perspectives on Social Protection and Resilience
The design of PMGKY aligns with the Social Protection Floor (SPF) framework advocated by the International Labour Organization, which emphasises universal access to basic income security and health care during crises (ILO, 2017). From a theoretical standpoint, social-protection measures contribute to livelihood resilience by strengthening households' capacity to absorb and adapt to shocks (Folke et al., 2010; Bene et al., 2014). However, the durability of such resilience depends on the transition from consumption support to productive recovery.

Recent scholarship distinguishes between reactive and adaptive welfare responses. Reactive interventions like emergency cash or food assistance address immediate distress but fade once subsidies end. Adaptive responses such as employment generation, credit access, and skill development promote structural recovery. The challenge for India's welfare regime lies in integrating these two dimensions. Evaluating PMGKY through the lens of livelihood resilience allows researchers to assess whether the scheme's temporary relief evolved into sustained economic stability.

2.6 Research Gap
Although the reviewed literature provides extensive insights into the immediate relief and food security benefits of PMGKY, empirical evidence on its long-term impact on household income and employment recovery remains limited, especially in Uttar Pradesh. Existing studies tend to focus either on scheme implementation or macro-level fiscal outcomes rather than micro-level livelihood transformation. Furthermore, the role of awareness and accessibility in shaping programme effectiveness has not been sufficiently quantified. Hence, there is a clear research gap in evaluating how PMGKY influenced post-COVID-19 livelihood recovery and what implementation challenges affected its success. Addressing this gap forms the central focus of the present empirical investigation.

III. RESEARCH METHODOLOGY

This section outlines the research design, objectives, hypotheses, study area, sampling framework, data collection methods, and statistical tools employed to examine the role of the Pradhan Mantri Garib Kalyan Yojana (PMGKY) in supporting rural households during the post-COVID-19 recovery phase in Uttar Pradesh.

3.1 Research Design
The present study follows a descriptive and analytical research design. It integrates quantitative primary data with qualitative field observations to assess how PMGKY influenced household income and employment recovery among rural populations after the COVID-19 pandemic. The design enables both statistical analysis and contextual interpretation of the scheme's impact on rural livelihoods.

3.2 Objectives of the Study
1. To analyse the impact of PMGKY on income and employment recovery among rural households after COVID-19.

3.3 Hypotheses
- H_{01}: PMGKY has no significant impact on the income and employment recovery of rural households in Uttar Pradesh.

3.4 Study Area and Sampling Design

The study was conducted across four districts of Uttar Pradesh Auraiya, Lucknow, Chitrakoot, and Siddharthnagar representing the state's western, central, Bundelkhand, and eastern regions, respectively.

These districts were purposively selected to capture regional diversity in socio-economic conditions, labour structures, and PMGKY implementation efficiency.

A multi-stage random sampling technique was employed:

- Stage I: Two blocks selected from each district.
- Stage II: Three villages randomly chosen from each block.
- Stage III: Twenty-five rural households selected from each village using official PMGKY beneficiary lists.

This process yielded a total sample of 600 households (150 per district), ensuring representative coverage of socio-economic and geographical variation.

3.5 Data Collection Methods

Primary Data

Primary data were collected using a structured interview schedule administered face-to-face with respondents. The questionnaire included items related to:

- Socio-economic characteristics of households,
- Awareness and participation in PMGKY components,
- Changes in income and employment before and after COVID-19, and
- Difficulties encountered in accessing scheme benefits.

Secondary Data

Secondary data were obtained from official government sources such as the Ministry of Rural Development, District Statistical Handbooks, and research publications on social protection and welfare delivery during the pandemic.

3.6 Analytical Tools and Techniques

The collected data were analysed using both descriptive and inferential statistical tools, in accordance with standard practices in social science research. Descriptive statistics, including percentage analysis and mean score analysis, were employed to summarise the socio-economic characteristics of respondents and to measure average changes in household income before and after the COVID-19 pandemic. Inferential statistics were applied to test hypotheses and examine relationships between key variables. Specifically, the Chi-square test (χ^2) was used to assess the association between PMGKY participation and livelihood recovery indicators such as employment resumption, while correlation analysis measured the strength and direction of relationships between awareness levels and benefit utilisation. Furthermore, regression analysis was conducted to identify significant socio-economic determinants influencing the intensity of participation in the PMGKY scheme. All statistical computations were carried out using SPSS (Version 26) and Microsoft Excel, and the results were systematically presented through tables, charts, and interpretative discussions to ensure clarity and analytical rigour.

3.7 Data Reliability and Validity

To ensure reliability, a pilot survey of 30 households was carried out in non-sampled villages. Based on feedback, minor modifications were incorporated into the questionnaire. Data accuracy was verified through field cross-checking and consistency tests. The Cronbach's alpha coefficient of 0.82 confirmed strong internal reliability.

3.8 Analytical Framework

The analytical process consisted of three key stages:

1. Descriptive analysis of household characteristics, awareness, and participation levels.
2. Comparative analysis of income and employment before and after COVID-19 to measure the extent of livelihood recovery.
3. Inferential testing (Chi-square, correlation, and regression) to determine the statistical significance of PMGKY's impact.

The empirical results and their interpretation are presented in the subsequent section.

IV. DATA ANALYSIS AND INTERPRETATION

This section presents a state-level analysis of the socio-economic and livelihood impacts of PMGKY on 600 surveyed households in Uttar Pradesh. The results integrate descriptive summaries and statistical tests to

evaluate income recovery, employment resumption, awareness, and participation patterns in the post-COVID-19 period.

4.1 Socio-Economic Profile of Respondents
The survey revealed that 61.7% of respondents were male and 38.3% were female. Caste composition indicated 70.2% OBC, 21.8% SC, and 6.3% ST households. The average family size was 5.24 members, with mean education level equivalent to middle school.
Occupationally, 49.1% were engaged in agriculture, 28.5% in wage labour, and 15.7% in self-employment or small trade. The prevalence of informal occupations reflects the vulnerability of rural households during lockdown disruptions.

4.2 Income Patterns Before and After COVID-19
The analysis of household income patterns before, during, and after the COVID-19 pandemic reveals significant fluctuations in the economic well-being of rural households. Prior to the pandemic in 2019, the average monthly household income was ₹12,750. During the nationwide lockdown of 2020, this figure declined sharply to ₹7,950, representing a reduction of approximately 37.6 percent. However, following the implementation of the Pradhan Mantri Garib Kalyan Yojana (PMGKY) and the gradual reopening of rural economic activities, average income levels rose to ₹17,830 by 2022. This post-intervention increase of nearly 40 percent reflects the scheme's substantial contribution to restoring consumption capacity and stabilising household livelihoods in the post-pandemic period. Nevertheless, field observations indicate that much of this recovery was short-term and consumption-driven, with limited reinvestment in productive or asset-building activities, suggesting that while PMGKY effectively mitigated immediate financial distress, its impact on long-term livelihood sustainability remained modest.

4.3 Awareness and Access to PMGKY Components
As per the primary data collected by the researcher in 2024, awareness levels regarding various components of the Pradhan Mantri Garib Kalyan Yojana (PMGKY) were observed to be substantially high across rural areas of Uttar Pradesh. The findings revealed that about 94.2 percent of respondents were aware of the free food grain distribution under PMGKAY, and nearly 91.8 percent reported having received this benefit, making it the most effectively implemented component of the scheme. Similarly, 79.6 percent of households were aware of the cash transfer components such as Jan Dhan and PM-Kisan, though only 61.5 percent confirmed actual receipt of such financial aid. Awareness of employment-related benefits under MGNREGA stood at 65.8 percent, while 43 percent reported participation or wage benefit utilisation. In the case of LPG distribution under the Ujjwala Yojana, 55.2 percent of respondents indicated awareness and 39.7 percent had availed of the facility. The insurance and health benefit segment recorded the lowest awareness level of 33 percent, with only 19.4 percent of households benefiting from it. Overall, the study found an average awareness rate of 85 percent, while the overall benefit utilisation stood at 71.1 percent. These results demonstrate that, although the PMGKY scheme successfully achieved extensive public awareness—particularly through its food and cash assistance measures—its actual reach and effectiveness were constrained by administrative bottlenecks, technological limitations, and lower digital literacy among rural populations.

4.4 Employment Recovery after PMGKY
As per the primary data collected by the researcher in 2024, a significant variation was observed in the employment status of rural households before, during, and after the COVID-19 pandemic. Prior to the pandemic in 2019, about 78 percent of respondents reported being fully employed, while 15 percent were partially employed, and only 7 percent were unemployed. However, during the nationwide lockdown in 2020, employment levels deteriorated sharply, with the proportion of fully employed individuals declining to 52 percent, while partial employment increased to 24 percent and unemployment surged to 24 percent. Following the implementation of the Pradhan Mantri Garib Kalyan Yojana (PMGKY) and the gradual reopening of rural economic activities in 2022, employment conditions improved considerably. The proportion of fully employed respondents rose to 73 percent, partially employed decreased to 18 percent, and unemployment dropped to 9 percent, indicating a clear trend of recovery. This improvement suggests that PMGKY, along with complementary public employment programmes such as MGNREGA and the Garib

Kalyan Rojgar Abhiyaan (GKRA), played a crucial role in absorbing returning migrants and providing short-term livelihood opportunities during the post-pandemic phase. The data thus reaffirm that targeted welfare and employment interventions were instrumental in restoring livelihood stability among rural households in Uttar Pradesh after the economic disruptions caused by COVID-19.

4.5 Statistical Analysis

4.5.1 Chi-Square Test

As per the primary data collected by the researcher in 2024, the Chi-square test was applied to examine the relationship between participation in the Pradhan Mantri Garib Kalyan Yojana (PMGKY) and the recovery of employment among rural households in Uttar Pradesh. The test results revealed a highly significant association, with a calculated Chi-square value of $\chi^2 = 281.72$, degrees of freedom ($df = 2$), and a p-value less than 0.001. The data indicated that 66.5 percent of PMGKY beneficiaries were fully employed after the pandemic compared to only 42.1 percent among non-beneficiaries. Similarly, 24.3 percent of beneficiaries were partially employed against 35.6 percent of non-beneficiaries, while the unemployment rate was considerably lower among beneficiaries (9.2 percent) than among non-beneficiaries (22.3 percent). These results clearly demonstrate that participation in PMGKY was strongly and positively associated with employment restoration in the post-pandemic period. Beneficiary households were significantly more likely to regain full employment, confirming the programme's effectiveness in supporting livelihood recovery through direct and indirect employment opportunities.

4.5.2 Correlation Analysis

As per the primary survey data collected by the researcher in 2024, a positive and statistically significant correlation was observed between the awareness levels of respondents and their utilisation of PMGKY benefits. The Pearson correlation coefficient was calculated as $r = 0.642$ ($p < 0.01$), signifying a moderately strong and direct relationship between the two variables. This finding implies that respondents who possessed greater awareness of the scheme's objectives, eligibility criteria, and procedures were substantially more likely to access multiple PMGKY benefits. The results suggest that awareness functions as a critical determinant of welfare inclusion, and that enhancing information dissemination through local governance, digital platforms, and grassroots outreach can substantially improve the reach and effectiveness of welfare delivery mechanisms.

4.5.3 Regression Analysis

According to the primary data collected by the researcher in 2024, a multiple regression analysis was conducted to identify the major socio-economic factors influencing the intensity of participation in PMGKY among rural households. The regression model yielded an R^2 value of 0.368, indicating that approximately 36.8 percent of the variance in PMGKY participation could be explained by the independent variables included in the model. The results revealed that awareness score ($\beta = 0.486$, $t = 8.42$, $p < 0.001$) and education level ($\beta = 0.271$, $t = 4.65$, $p < 0.001$) had the most significant positive effects on participation intensity. The gender of the household head ($\beta = 0.153$, $t = 2.33$, $p = 0.021$) also showed a positive influence, indicating that male-headed households were slightly more likely to access benefits than female-headed ones. Conversely, the income category ($\beta = -0.128$, $t = -2.09$, $p = 0.037$) displayed a negative relationship, suggesting that lower-income households benefited more extensively from the scheme reflecting PMGKY's pro-poor targeting mechanism. Overall, the regression model ($F = 21.83$, $p < 0.001$) confirms that awareness and education significantly determine participation levels, highlighting the need for enhanced public communication, financial literacy, and inclusive outreach strategies to ensure equitable access to government welfare programmes.

4.6 Major Findings

As per the primary data collected by the researcher in 2024, several significant findings emerged from the analysis of the impact of the Pradhan Mantri Garib Kalyan Yojana (PMGKY) on rural households in Uttar Pradesh. First, the study observed a marked recovery in household income, with average monthly earnings increasing by approximately 40 percent in the post-PMGKY period, surpassing pre-pandemic income levels. This rise indicates that the scheme effectively mitigated the economic shock induced by COVID-19 and contributed to household financial stability. Second, while awareness levels were high, averaging

85 percent across all components of PMGKY, actual benefit utilisation remained moderate at around 71 percent, suggesting the presence of administrative and informational barriers that limited full participation. Third, the study found a substantial improvement in employment conditions, with the proportion of fully employed individuals increasing to 73 percent after the implementation of PMGKY. The Chi-square test ($\chi^2 = 281.72$, $p < 0.001$) confirmed a statistically significant relationship between scheme participation and employment resumption, indicating that beneficiaries were far more likely to regain livelihood opportunities compared to non-beneficiaries.

Furthermore, statistical tests revealed that awareness and education played a decisive role in shaping participation outcomes. The correlation coefficient ($r = 0.642$) established a positive and significant relationship between awareness and benefit utilisation, while the regression model underscored that higher education and awareness levels were key determinants of access to scheme benefits. Lastly, several implementation challenges were identified during fieldwork, including payment delays, biometric authentication failures, and inadequate grievance redressal mechanisms in remote rural areas. These findings collectively highlight both the successes and structural constraints of PMGKY in fostering post-pandemic livelihood recovery.

4.7 Interpretation

The empirical evidence derived from the primary survey conducted by the researcher in 2024 clearly demonstrates that the Pradhan Mantri Garib Kalyan Yojana (PMGKY) made a substantial positive contribution to rural livelihood recovery in the aftermath of the COVID-19 pandemic. Quantitative indicators including the Chi-square value ($\chi^2 = 281.72$), correlation coefficient ($r = 0.642$), and regression coefficient ($R^2 = 0.368$) collectively substantiate the hypothesis that participation in PMGKY significantly enhanced both income restoration and employment resumption among rural households in Uttar Pradesh. These results validate the assumption that comprehensive welfare packages, when effectively targeted, can act as powerful instruments of socio-economic resilience during large-scale crises.

However, the moderate explanatory power of the regression model suggests that structural and institutional factors such as local governance efficiency, administrative transparency, awareness dissemination, and digital accessibility continue to play a pivotal role in determining welfare outcomes. The findings imply that while PMGKY succeeded in providing short-term financial relief and food security, its long-term sustainability as a livelihood support mechanism depends on deeper systemic reforms. Therefore, policy emphasis must shift from immediate relief measures to sustainable livelihood resilience, achieved through continuous welfare integration, financial inclusion, digital empowerment, and rural infrastructure strengthening. In essence, PMGKY served as an effective crisis management intervention, but its future potential lies in evolving from a temporary relief package into a comprehensive socio-economic safety net that promotes inclusive and durable rural development.

V. CONCLUSION AND POLICY SUGGESTIONS

5.1 Conclusion

The COVID-19 pandemic imposed severe and unprecedented challenges on India's rural economy, causing widespread unemployment, migration, and income collapse. In this context, the Pradhan Mantri Garib Kalyan Yojana (PMGKY) emerged as a cornerstone of the government's social protection response. The present empirical study assessed the post-pandemic livelihood recovery of rural households in Uttar Pradesh and evaluated PMGKY's effectiveness in mitigating economic distress.

The research, based on a state-level sample of 600 households across four representative districts, reveals a compelling narrative of partial yet meaningful recovery. Income levels, which had declined sharply during lockdowns, increased by nearly 40% following PMGKY interventions. Employment, which had dropped to 52%, rebounded to 73% by 2022, primarily due to food security, cash transfers, and wage employment components. These outcomes strongly validate the study's alternative hypothesis (H_{11}), affirming that PMGKY exerted a significant positive influence on the income and employment recovery of rural households in Uttar Pradesh.

Statistical tests corroborate this conclusion:

- The Chi-square test ($\chi^2 = 281.72$, $p < 0.001$) confirmed a strong association between PMGKY participation and employment resumption.

- The Pearson correlation coefficient (r = 0.642, p < 0.01) demonstrated that higher awareness directly led to greater benefit utilisation.
- The Regression model (R² = 0.368) highlighted awareness and education as key determinants of participation, with a negative relationship between income and benefits received confirming the pro-poor orientation of the scheme.

These quantitative findings are complemented by qualitative insights: respondents widely appreciated PMGKY's role in sustaining food security and immediate relief but pointed to persistent implementation barriers such as delayed payments, weak digital access, and inadequate grievance redressal mechanisms.

The study thus concludes that while PMGKY succeeded as an emergency welfare response, its long-term sustainability as a livelihood resilience instrument remains limited. It functioned effectively as a consumption stabiliser, but its capacity to trigger productive recovery or asset formation was modest. The results underscore the importance of transforming short-term welfare measures into integrated, adaptive, and inclusive livelihood systems.

5.2 Policy Implications
Based on the empirical findings and field-level observations, several policy implications can be drawn for strengthening future social-protection frameworks in India.
1. Strengthening Awareness and Digital Inclusion
The positive correlation between awareness and benefit utilisation (r = 0.642) indicates that effective communication determines welfare success. Hence, government departments should institutionalise awareness drives at Panchayat level, using digital platforms, local radio, and women's self-help groups. Expanding digital literacy and mobile-based service delivery can further improve direct transfer efficiency and inclusion.

2. Convergence of Welfare and Livelihood Schemes
PMGKY's success was largely consumption-based, while livelihood creation remained fragmented. Converging PMGKY with MGNREGA, PMEGP, and NRLM can transition beneficiaries from relief to resilience. Employment generation through rural infrastructure and micro-enterprise support should be prioritised to ensure sustained income recovery beyond the pandemic period.

3. Targeting Last-Mile Delivery Challenges
The study identified issues such as biometric authentication failures, delayed DBT transfers, and lack of grievance redressal in remote villages. Strengthening the Common Service Centre (CSC) network, simplifying verification protocols, and establishing village-level grievance committees will enhance efficiency and accountability in scheme execution.

4. Gender-Sensitive Policy Strengthening
Regression results indicate that female-headed households were less likely to access PMGKY benefits. Future welfare frameworks should adopt a gender-sensitive approach by improving access for women through flexible documentation norms, women-led SHGs, and gender budgeting practices to ensure inclusive social protection.

5. Institutionalizing a Permanent Social Protection Framework
The pandemic revealed the absence of a permanent shock-responsive system. Building a National Rural Social Protection Framework (NRSPF) anchored at the district level and integrating health, employment, and welfare databases would create an institutional mechanism capable of delivering rapid, data-driven support during future crises. This would align with India's commitments under the ILO's Social Protection Floor and UN Sustainable Development Goals (SDG 1, 8, and 10).

6. Promoting Productive Livelihoods
While PMGKY restored basic consumption, long-term resilience depends on productive investments. The government should focus on skill development, micro-credit access, and agricultural value-chain integration to convert welfare recipients into economically active producers. Linking welfare assistance with skill training and entrepreneurship will enable durable livelihood recovery.

7. Strengthening Local Governance and Monitoring
Panchayati Raj Institutions (PRIs) and local administrative units play a vital role in last-mile delivery. The study's field data suggest that districts

with stronger local governance networks achieved better participation rates. Establishing real-time monitoring dashboards and third-party evaluations can ensure transparency and performance accountability at the grassroots level.

The evidence from rural Uttar Pradesh affirms that PMGKY provided a critical socio-economic safety net during the COVID-19 crisis, preventing widespread hunger and supporting household consumption recovery. The programme's success, however, was largely contingent upon awareness, education, and administrative delivery capacity. To transform temporary relief into sustainable progress, India must now move toward institutionalising welfare resilience by integrating social protection with livelihood promotion, enhancing digital access, and empowering local institutions.

In essence, PMGKY stands as a landmark intervention in India's crisis governance, demonstrating how timely state action can stabilise livelihoods under distress. Its evolution into a comprehensive, adaptive, and inclusive welfare framework will determine the resilience of India's rural economy in future global shocks.

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