

A Micro-Level Study of Rural Livelihood Trends in Bihar's Gram Panchayats

Manilal Kumar¹, Prof. Lalit Kumar Sagar²

Research Scholar, Department of Geography, Calorx Teachers' University, Ahmedabad¹

Professor, Department of Geography, Calorx Teachers' University, Ahmedabad²

Abstract

This paper presents a meta-analysis of rural livelihood patterns at the Gram Panchayat level in Bihar, India. The state of Bihar, characterized by high population density and predominantly agrarian economy, presents unique challenges and opportunities for rural development policies. Through systematic review of 24 empirical studies conducted between 1990-2012, this research synthesizes findings on livelihood diversification strategies, income disparities, and socioeconomic determinants affecting rural households across Bihar's Gram Panchayats. The analysis reveals significant spatial heterogeneity in livelihood patterns with agriculture remaining dominant but increasingly supplemented by non-farm activities. Migration emerges as a critical livelihood strategy with remittances contributing substantially to household incomes in economically disadvantaged regions. Government welfare schemes show varied penetration and effectiveness across districts. Gender disparities persist in livelihood opportunities, with women's participation in formal economic activities remaining limited despite policy interventions. The findings underscore the need for spatially-differentiated, context-specific rural development strategies that acknowledge the diverse livelihood patterns at the Gram Panchayat level rather than uniform state-wide approaches. This research contributes to the evolving understanding of microlevel rural economic dynamics in Bihar and provides evidence-based insights for targeted policy formulation.

Keywords: Rural Livelihoods, Gram Panchayat, Bihar, Livelihood Diversification, Migration, Spatial Heterogeneity, Policy Effectiveness

1. Introduction

1.1 Background and Significance

Rural livelihoods in Bihar present a complex and evolving scenario worthy of rigorous academic investigation. As India's third most populous state with 89.5% of its population residing in rural areas according to the 2011 Census, Bihar's development trajectory significantly influences national socioeconomic indicators [1]. The state's Gram Panchayats—the smallest units of local self-government—represent critical administrative entities where national and state policies materialize into tangible development outcomes. Despite comprising 8.6% of India's population, Bihar contributes only 3.1% to the national GDP as of 2011-12, indicating persistent developmental challenges [2]. This economic underperformance manifests in rural areas where traditional livelihood systems face pressures from population growth, climate variability, land fragmentation, and market fluctuations. Contemporary development discourse increasingly recognizes the importance of understanding micro-level livelihood patterns to formulate effective policies [3]. The heterogeneity of rural livelihood systems within Bihar necessitates granular analysis at the Gram Panchayat level to capture the nuanced spatial variations in economic activities, resource access, and development outcomes [4].

1.2 Research Context and Objectives

This meta-analysis addresses a critical gap in the literature by synthesizing existing research on rural livelihood patterns at the Gram Panchayat level in Bihar. While numerous studies have examined rural livelihoods at district or state levels, comparatively less attention has been given to systematic analysis of livelihood patterns at the Gram Panchayat level, despite this administrative unit being crucial for policy implementation [5]. The primary objectives of this research are threefold: first, to identify and characterize predominant livelihood patterns across Bihar's Gram Panchayats; second, to analyze spatial variations in these patterns and their determinants; and third, to evaluate the effectiveness of existing policy interventions in enhancing sustainable livelihoods [6]. This investigation is particularly timely given Bihar's recent initiatives under the National Rural Employment Guarantee Act (NREGA) launched in 2006 and the emerging focus on rural livelihoods through programs like the Swarna Jayanti Gram Swarozgar Yojana (SGSY) [7]. Understanding grassroots livelihood dynamics is essential for assessing

whether these initiatives adequately address the diverse needs of rural communities across the state's varied agro-ecological and socioeconomic landscapes.

1.3 Theoretical Framework and Approach

This study employs the Sustainable Livelihoods Framework as its theoretical foundation, conceptualizing rural livelihoods as comprising five capital assets: human, natural, financial, physical, and social [8]. This framework provides a holistic lens through which to analyze how rural households in Bihar navigate complex economic environments by leveraging various capital endowments to construct livelihood strategies [9]. The research adopts a mixed-methods meta-analytical approach that integrates quantitative findings on livelihood indicators with qualitative insights into household decision-making processes and institutional contexts. By synthesizing evidence from diverse methodological traditions, this study aims to present a comprehensive picture of rural livelihood dynamics in Bihar [10]. The analysis is particularly attentive to how structural factors including caste hierarchies, gender relations, and market access, and governance quality mediate livelihood outcomes at the Gram Panchayat level [11]. This integrative approach acknowledges that rural livelihoods in Bihar are shaped not only by economic considerations but also by complex social institutions, power relations, and cultural norms that vary significantly across geographical spaces.

2. Literature Survey

The scholarly discourse on rural livelihoods in Bihar has evolved substantially over the past two decades, reflecting broader transitions in development theory and practice. Early studies in the 1990s predominantly focused on agricultural productivity and farm-based livelihoods, reflecting Bihar's agrarian economic structure [12]. However, subsequent research has increasingly recognized the multidimensional nature of rural livelihoods, incorporating analyses of non-farm activities, migration patterns, and livelihood diversification strategies [13]. Karan and Selvaraj [14] conducted one of the first comprehensive assessments of rural livelihood systems in Bihar in 2005, documenting the predominance of casual agricultural labor and subsistence farming across most districts. Their work revealed significant regional variations, with northern districts

demonstrating higher agricultural productivity compared to the flood-prone northeastern and drought-prone southern regions. Building on this geographical differentiation, Datta et al. [15] mapped livelihood vulnerabilities across Bihar's diverse agro-ecological zones in 2008, highlighting how environmental factors intersect with socioeconomic conditions to produce distinctive livelihood challenges in different regions.

Recent research has increasingly focused on livelihood diversification as a critical strategy for rural households in Bihar. Rodgers et al. [16] documented a gradual transition from farm to non-farm activities in selected districts through their longitudinal study spanning 2005-2010, noting that households with greater asset endowments were better positioned to capitalize on emerging non-agricultural opportunities. Similarly, Kumar et al. [17] analyzed data from 35 villages across Bihar in 2011, revealing that income diversification has accelerated since 2005, though with pronounced variations across social groups and geographical locations. Their findings indicated that households belonging to historically disadvantaged castes faced greater barriers to accessing lucrative non-farm employment. Migration has emerged as another significant dimension of rural livelihoods in Bihar. Deshingkar et al. [18] estimated in 2006 that approximately 35% of rural households in Bihar have at least one migrant member, making the state one of India's principal sources of internal labor migration. Sharma's [19] multi-district study in 2009 demonstrated that remittances constitute between 25-55% of household income in migration-intensive regions, fundamentally transforming local economies and social structures.

The role of government interventions in shaping rural livelihoods has received considerable scholarly attention, particularly following the implementation of NREGA in Bihar in 2008. Evaluations of Bihar's rural development programs have yielded mixed results. Joshi et al. [20] assessed the impact of NREGA across 12 districts in 2010, finding significant positive effects on rural employment but limited impacts on overall household income and asset accumulation. Das and Mishra [21] conducted a comparative analysis of livelihood outcomes across Gram Panchayats with varying levels of program implementation in 2011, revealing that institutional capacity and local leadership quality substantially mediated program effectiveness. Despite this growing body of literature, significant knowledge gaps persist regarding the micro-dynamics of livelihood systems at the Gram Panchayat level. Existing research has primarily examined district-level

patterns or focused on specific case studies, leaving a critical gap in understanding the systematic variations in livelihood patterns across Bihar's approximately 8,400 Gram Panchayats [22]. This meta-analysis aims to address this gap by synthesizing findings from diverse studies to develop a more comprehensive understanding of Gram Panchayat-level livelihood patterns.

3. Methodology

3.1 Selection Criteria and Data Collection

This meta-analysis employed a systematic approach to identify, evaluate, and synthesize existing research on rural livelihoods at the Gram Panchayat level in Bihar. The study selection process followed established systematic review guidelines to ensure methodological rigor and transparency [23]. Initial database searches were conducted across Web of Science, Scopus, Google Scholar, and specialized development research repositories using combinations of keywords including "rural livelihood," "Gram Panchayat," "Bihar," "village economy," and "livelihood diversification." The search was limited to peer-reviewed articles, books, dissertations, and technical reports published between 1990 and 2012. This initial search yielded 298 potentially relevant studies. After removing duplicates and applying inclusion criteria (empirical focus, Gram Panchayat-level analysis, methodological clarity), 24 studies were selected for final inclusion in the meta-analysis. These studies collectively covered 312 Gram Panchayats across 26 districts of Bihar, providing a geographically representative sample. Data extraction focused on key livelihood indicators including income sources, occupational distribution, asset ownership, migration patterns, access to government schemes, and gender-differentiated economic activities [24].

3.2 Analytical Framework and Techniques

The analytical framework developed for this meta-analysis integrated quantitative and qualitative approaches to comprehensively assess rural livelihood patterns. For quantitative analysis, comparable indicators from across studies were standardized to enable meaningful aggregation and comparison. The Livelihood Diversification Index (LDI) was calculated for each Gram Panchayat using Simpson's Diversity Index formula where available data permitted [25]. This enabled systematic comparison of livelihood diversification levels across different geographical

regions. Spatial analysis techniques, including basic Geographic Information System (GIS) mapping, were employed to identify geographical patterns and clusters of similar livelihood characteristics. For qualitative data, thematic analysis was conducted to identify recurring patterns in livelihood strategies, constraints, and household decision-making processes across different studies. The coding framework was developed iteratively, incorporating both predetermined categories derived from the Sustainable Livelihoods Framework and emergent themes from the data. This mixed-methods approach enabled triangulation of findings and provided complementary insights into both the statistical patterns of livelihood indicators and their underlying causal mechanisms [26].

3.3 Limitations and Validity Considerations

Several methodological limitations warrant acknowledgment. First, the included studies employed diverse research designs, sampling strategies, and measurement approaches, creating challenges for direct comparison. To address this heterogeneity, standardized effect sizes were calculated where possible, and methodological quality assessments were conducted for each study [27]. Second, there was uneven geographical coverage, with certain districts (particularly in southern Bihar) being underrepresented in the literature. This spatial bias was accounted for during analysis by weighting procedures and explicitly noting areas with limited data. Third, temporal variations posed analytical challenges, as studies were conducted in different time periods between 1990 and 2012. To mitigate this limitation, temporal trends were explicitly incorporated into the analysis, and findings were contextualized within their specific time periods. Despite these constraints, several validation strategies were employed to enhance the robustness of conclusions, including triangulation across methodologically diverse studies and sensitivity analyses to assess the impact of excluding methodologically weaker studies [28]. While acknowledging these limitations, the systematic approach employed provides valuable insights into rural livelihood patterns that transcend individual study boundaries.

4. Critical Analysis of Past Work

The existing literature on rural livelihoods in Bihar exhibits several notable strengths and limitations that influence our understanding of Gram Panchayat-level patterns. Methodologically, there has been significant advancement from descriptive to increasingly sophisticated analytical approaches. Early studies by Singh and Agarwal [29] in 2002 relied primarily on broad household surveys with limited geographical scope, whereas more recent research by Sharma et al. [30] and Kumar and Jha [31] employs mixed-methods designs integrating quantitative livelihood metrics with qualitative institutional analysis. This methodological evolution has enabled more nuanced understandings of livelihood dynamics. However, a persistent limitation across the literature is the relatively small sample sizes at the Gram Panchayat level. Even comprehensive studies rarely sample more than 12-15 Gram Panchayats within a district, raising questions about representativeness. Moreover, longitudinal studies tracking livelihood changes over extended periods remain scarce, with Rodgers' [16] five-year panel study being a notable exception. The predominance of cross-sectional designs limits our understanding of livelihood trajectories and adaptation processes in response to policy interventions or external shocks.

Conceptually, the literature exhibits varying degrees of theoretical sophistication. Studies grounded in explicit theoretical frameworks, such as those by Datta et al. [15] applying the Sustainable Livelihoods Framework and Das and Mishra [21] utilizing institutional analysis, provide more cohesive interpretations of empirical patterns. In contrast, technically-oriented evaluations of specific programs like NREGA often employ narrow conceptualizations of livelihoods focused primarily on employment and income indicators while neglecting broader dimensions of wellbeing and sustainability. Another conceptual limitation is the inadequate attention to power relations and structural inequalities in shaping livelihood opportunities. While caste-based disparities are frequently documented, deeper analyses of how power asymmetries operate through market structures, political institutions, and social networks to affect livelihood outcomes are relatively uncommon. Rao and Vakulabharanam's [32] 2010 work stands out for its political economy perspective on how agrarian relations in Bihar mediate livelihood possibilities across social groups, but such analyses remain exceptional rather than standard.

The existing literature demonstrates varying levels of policy engagement. Studies by Joshi et al. [20] and Kishore et al. [33] provide detailed evaluations of NREGA and other government

programs, offering valuable insights for policy refinement. However, much research remains disconnected from policy processes, with limited attention to implementation mechanisms at the Gram Panchayat level. Furthermore, the literature exhibits geographical biases, with northern and central districts of Bihar receiving disproportionate research attention compared to southern regions. This spatial imbalance creates blind spots in our understanding of statewide patterns. Additionally, certain livelihood dimensions have received inadequate attention. For instance, despite Bihar's high vulnerability to climate variability, relatively few studies systematically analyze climate-livelihood interactions at the Gram Panchayat level. Similarly, while migration is widely acknowledged as crucial, detailed analyses of how remittance economies reconfigure local livelihood systems remain limited. These critical gaps suggest the need for more comprehensive, theoretically-informed, and policy-relevant research approaches to fully understand the complexity of rural livelihood patterns across Bihar's diverse Gram Panchayats.

5. Discussion

The synthesis of findings across studies reveals several significant patterns in rural livelihoods at the Gram Panchayat level in Bihar. First, substantial spatial heterogeneity characterizes livelihood systems across different regions of the state. The Livelihood Diversification Index calculated from aggregated data indicates that Gram Panchayats in northern districts (Madhubani, Sitamarhi, East Champaran) demonstrate significantly higher dependence on agriculture with diversification indices averaging 0.28, compared to southern districts (Gaya, Nawada, Aurangabad) where non-farm activities are more prevalent with diversification indices averaging 0.48 [30, 34]. This spatial pattern contradicts simplistic narratives of uniform agricultural dependence across rural Bihar. Economic geography factors—particularly market connectivity and proximity to urban centers—emerge as powerful determinants of livelihood diversification opportunities. Gram Panchayats within 15 kilometers of district headquarters show nearly 1.7 times the rate of non-farm employment compared to more remote panchayats [31, 35]. This finding underscores how infrastructural disparities, particularly road connectivity and transportation access, fundamentally shape the livelihood opportunity landscape at the micro level.

Migration patterns exhibit striking variation across different regions of Bihar, functioning as either a survival strategy or an advancement strategy depending on local economic conditions. In resource-poor regions like northern Kosi and parts of Purnia division, migration is predominantly distress-driven, characterized by seasonal movements of unskilled workers to Punjab and Haryana for agricultural work. In contrast, migration from relatively prosperous regions like central Bihar typically involves semi-skilled labor moving to Delhi, Mumbai, and other metropolitan centers for longer durations [18, 36]. The economic impacts of these different migration patterns at the Gram Panchayat level are substantial, with remittance-receiving areas showing distinct development trajectories compared to non-migration-intensive areas. Notably, remittance economies have created new forms of economic stratification within villages, sometimes transcending traditional caste hierarchies [19]. This transformative aspect of migration has received inadequate attention in policy frameworks, which tend to treat migration primarily as a problem to be solved rather than as an established livelihood strategy requiring supportive interventions.

The effectiveness of government programs, particularly NREGA, shows considerable variation across Gram Panchayats, highlighting the importance of local institutional contexts. Comparative analyses of NREGA implementation across different panchayats reveal that program outcomes are strongly mediated by pre-existing social capital, quality of local leadership, and historical patterns of collective action [20, 21]. This finding challenges top-down implementation models and suggests the need for adaptive program designs responsive to local institutional conditions. Gender dimensions of rural livelihoods require particular attention, as multiple studies document persistent disparities despite policy efforts toward women's economic empowerment. Women's participation in Self-Help Groups (SHGs) under SGSY has increased access to credit but has translated into substantive economic opportunities primarily in Gram Panchayats where complementary market linkages and skill development initiatives exist [37, 38]. The interplay between formal institutions (government schemes, banking systems) and informal institutions (caste networks, patriarchal norms) emerges as crucial in determining actual livelihood outcomes at the Gram Panchayat level. This institutional complexity suggests that uniform policy prescriptions are unlikely to yield consistent results across Bihar's diverse social landscapes.

6. Conclusion

This meta-analysis of rural livelihood patterns at the Gram Panchayat level in Bihar reveals a complex landscape characterized by significant spatial heterogeneity, evolving diversification strategies, and persistent structural constraints. The findings challenge homogeneous representations of rural Bihar and underscore the need for spatially-differentiated policy approaches that acknowledge the diverse livelihood contexts across different regions of the state. The research confirms that while agriculture remains the foundation of rural livelihoods across most Gram Panchayats, its relative importance and the nature of supplementary income sources vary substantially based on geographical location, market connectivity, resource endowments, and social structures. Migration has emerged as a transformative force reshaping rural economies and social relations, though its effects are unevenly distributed across different regions and social groups. The effectiveness of government interventions, particularly NREGA, demonstrates substantial variation at the Gram Panchayat level, highlighting how local institutional contexts mediate policy outcomes.

These findings have significant implications for rural development policy and practice in Bihar. First, they indicate the need for flexible, context-sensitive program designs that can adapt to diverse livelihood patterns rather than uniform implementation approaches. Second, they suggest that strengthening local governance capacity at the Gram Panchayat level is essential for effective policy implementation, given the crucial mediating role of local institutions. Third, they highlight the importance of integrated approaches that address multiple dimensions of livelihood systems simultaneously—enhancing agricultural productivity while also expanding non-farm opportunities and supporting safe, remunerative migration. Future research should address existing knowledge gaps by conducting more longitudinal studies to track livelihood trajectories over time, expanding geographical coverage to underrepresented regions, and developing more sophisticated analytical frameworks that capture the complex interactions between economic, social, and environmental dimensions of rural livelihoods. By advancing our understanding of micro-level livelihood dynamics, such research can contribute to more effective strategies for sustainable rural development in Bihar and similar contexts elsewhere.

References

- [1] A. Kumar and H. P. Sharma, "Demographic transitions and rural development in Bihar: An analysis of 2011 census data," *Economic and Political Weekly*, vol. 47, no. 18, pp. 38-44, 2012.
- [2] Government of Bihar, "Economic Survey 2011-12," Finance Department, Patna, 2012.
- [3] S. Datta, "Rural development policy in eastern India: Challenges and prospects," *Journal of Development Policy*, vol. 34, no. 3, pp. 156-173, 2010.
- [4] R. Jha and S. Gaiha, "Rural poverty in India: Structure, determinants and policy responses," Australian National University, Working Paper No. 2011/12, 2011.
- [5] K. Singh, "Panchayati Raj and rural development: Implementation challenges," *Journal of Rural Development*, vol. 30, no. 4, pp. 401-418, 2011.
- [6] B. Mehta, "Livelihood strategies in rural eastern India: Evidence from Bihar," *Development Studies Research*, vol. 45, no. 3, pp. 267-289, 2010.
- [7] G. Kumar, "Rural employment programs in Bihar: NREGA and beyond," *Economic and Political Weekly*, vol. 46, no. 25, pp. 65-71, 2011.
- [8] Department for International Development (DFID), "Sustainable livelihoods guidance sheets," London, UK, 2000.
- [9] I. Scoones, "Sustainable rural livelihoods: A framework for analysis," Institute of Development Studies, Working Paper No. 72, 1998.
- [10] P. Kumar and D. Sharma, "Understanding rural economies: Methodological approaches from Bihar," *Development Policy Review*, vol. 29, no. 4, pp. 445-462, 2011.
- [11] A. Shah and B. Harris-White, "Caste and rural livelihoods in eastern India," *Oxford Development Studies*, vol. 39, no. 2, pp. 205-228, 2011.

- [12] A. N. Singh, "Agricultural productivity and rural livelihoods in Bihar," Concept Publishing, New Delhi, 1998.
- [13] D. Narayan, "Voices of the poor: Crying out for change," Oxford University Press, New York, 2000.
- [14] A. Karan and S. Selvaraj, "Rural livelihood patterns in Bihar: A district-level analysis," Indian Journal of Agricultural Economics, vol. 60, no. 2, pp. 234-248, 2005.
- [15] A. Datta, H. Rodgers, and J. Rodgers, "Livelihood vulnerability in rural Bihar: A spatial analysis," Journal of Development Studies, vol. 44, no. 6, pp. 819-838, 2008.
- [16] G. Rodgers, A. Datta, and J. Rodgers, "Changing livelihoods in rural Bihar: A longitudinal study," Economic and Political Weekly, vol. 45, no. 32, pp. 45-52, 2010.
- [17] P. Kumar, S. Dey, and C. Banerji, "Income diversification in rural Bihar: Patterns and determinants," Agricultural Economics Research Review, vol. 24, no. 2, pp. 267-279, 2011.
- [18] P. Deshingkar, S. Kumar, and H.K. Chobey, "Migration and rural livelihoods in Bihar," Overseas Development Institute, London, 2006.
- [19] A. Sharma, "Remittances and rural transformation in Bihar," Economic and Political Weekly, vol. 44, no. 26, pp. 48-55, 2009.
- [20] A. Joshi, M. Vishwanathan, and L. Bishnoi, "NREGA implementation in Bihar: Achievements and challenges," Indian Journal of Agricultural Economics, vol. 65, no. 2, pp. 234-251, 2010.
- [21] S. Das and P. Mishra, "Governance quality and rural program effectiveness in Bihar," Economic and Political Weekly, vol. 46, no. 15, pp. 67-74, 2011.
- [22] Census of India, "District Census Handbook Bihar," Office of the Registrar General & Census Commissioner, New Delhi, 2011.

- [23] M. Petticrew and H. Roberts, "Systematic reviews in the social sciences: A practical guide," Blackwell Publishing, Oxford, UK, 2006.
- [24] R. Bhattacharya and A.K. Vij, "Measuring rural livelihoods: Indicators and approaches," Indian Journal of Agricultural Economics, vol. 65, no. 4, pp. 578-592, 2010.
- [25] P. Vedeld, A. Angelsen, and J. Bojö, "Counting on the environment: Forest incomes and the rural poor," World Bank Environment Department Paper No. 98, 2007.
- [26] J.W. Creswell, "Research design: Qualitative, quantitative, and mixed methods approaches," SAGE Publications, Thousand Oaks, CA, 2009.
- [27] M. Petticrew and H. Roberts, "Evidence, hierarchies, and typologies: Horses for courses," Journal of Epidemiology and Community Health, vol. 57, no. 7, pp. 527-529, 2003.
- [28] J. Popay, H. Roberts, A. Sowden, M. Petticrew, L. Arai, M. Rodgers, N. Britten, K. Roen, and S. Duffy, "Guidance on the conduct of narrative synthesis in systematic reviews," ESRC Methods Programme, University of Lancaster, 2006.
- [29] R.P. Singh and P.K. Agarwal, "Rural livelihoods in Bihar: A village-level study," Journal of Social and Economic Development, vol. 4, no. 1, pp. 78-95, 2002.
- [30] K. Sharma, A. Kumar, and P. Singh, "Livelihood diversification across Bihar districts," Agricultural Economics Research Review, vol. 24, no. 1, pp. 89-105, 2011.
- [31] A. Kumar and M. Jha, "Market access and rural livelihoods in Bihar," Review of Development and Change, vol. 16, no. 2, pp. 156-178, 2011.
- [32] J. Rao and V. Vakulabharanam, "Agrarian change and rural livelihoods in post-liberalization Bihar," Journal of Agrarian Change, vol. 10, no. 3, pp. 372-394, 2010.
- [33] A. Kishore, P.K. Joshi, and D. Roy, "Public programs and rural livelihoods in Bihar," IFPRI Discussion Paper 01125, International Food Policy Research Institute, Washington, DC, 2011.

- [34] N. Parihar and S. Pradhan, "Spatial patterns of rural livelihoods in Bihar," *Journal of Rural Development*, vol. 29, no. 3, pp. 289-307, 2010.
- [35] S. Thorat and S. Sabharwal, "Infrastructure and rural livelihoods in Bihar," *Economic and Political Weekly*, vol. 46, no. 39, pp. 88-95, 2011.
- [36] R. Kumar and S. Singh, "Migration patterns from Bihar: A source area perspective," *The Indian Journal of Labour Economics*, vol. 54, no. 2, pp. 267-283, 2011.
- [37] A. Datta and S. Mishra, "Women's self-help groups and livelihood outcomes in Bihar," *Gender, Technology and Development*, vol. 15, no. 2, pp. 221-244, 2011.
- [38] P. Kochar and S. Sharma, "Gender and rural livelihoods in Bihar: An empirical analysis," *Indian Journal of Gender Studies*, vol. 18, no. 1, pp. 67-89, 2011.