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A study on Commercial and Economic Dependency of Tribal Communities on Mahua in Bastar Region,Chhattisgarh, India.

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ABSTRACT
The socio-economic architecture of tribal livelihoods in the Bastar region of Bastar is profoundly intertwined with forest-based subsistence systems, wherein Mahua (Madhuca longifolia) emerges as a pivotal bio-resource. This study investigates the multidimensional commercial and economic dependency of indigenous communities on Mahua, conceptualized as both a subsistence commodity and a quasi-monetary asset. Employing a quantitative analytical framework supported by hypothetical survey data (n = 300 households), the study explores income generation, seasonal dependency, and market fluctuations. The findings indicate that Mahua functions as a "rural liquidity instrument," contributing significantly to household income diversification, gendered labor participation, and informal market integration. However, structural constraints such as price volatility, regulatory restrictions, and ecological degradation undermine its economic potential. The paper concludes with policy-oriented recommendations emphasizing value chain formalization and sustainable forest governance.

Keywords- Mahua Economy, Tribal Livelihoods, Minor Forest Produce, Bastar, Informal Markets, Economic Dependency, Rural Income Systems

1. INTRODUCTION

The tribal economies of central India, particularly within the forest-dominated landscapes of Bastar, exhibit a deeply entrenched reliance on non-timber forest produce (NTFP)-centric subsistence systems, which function as the foundational axis of livelihood security, socio-cultural continuity, and ecological adaptation. These subsistence systems are neither rudimentary nor static; rather, they represent a complex adaptive interface between human communities and forest ecosystems, wherein economic survival, cultural identity, and environmental stewardship are inextricably interwoven (Saxena, 2003; Tewari & Campbell, 2016). Within this intricate socio-ecological framework, Mahua (Madhuca longifolia) emerges as a resource of exceptional significance, transcending its material utility to assume the role of a multi-functional ecological asset and socio-economic stabilizer.

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Mahua occupies a distinctive position within the NTFP spectrum due to its extraordinary versatility and perennial availability, which collectively enhance its reliability as a livelihood resource. Unlike seasonal agricultural outputs that are vulnerable to climatic uncertainties, Mahua trees demonstrate remarkable ecological resilience, thriving in semi-arid and forested conditions typical of central India. This resilience ensures a relatively stable yield of flowers and seeds, thereby reinforcing its role as a risk-buffering mechanism within fragile rural economies (Mahapatra & Tewari, 2005). Consequently, Mahua is not merely an economic commodity; it constitutes a quasi-institutional entity embedded within the socio-cultural fabric of tribal life, influencing dietary practices, ritualistic observances, and systems of reciprocal exchange.

From a socio-cultural perspective, Mahua is deeply integrated into the cosmological and ritualistic frameworks of tribal communities, functioning as both a sacred and utilitarian resource. The collection, processing, and consumption of Mahua flowers are often associated with seasonal festivals, communal gatherings, and rites of passage, thereby reinforcing social cohesion and cultural continuity (Verma, 2014). The fermentation of Mahua flowers into traditional beverages, for instance, is not merely an act of consumption but a symbolic reaffirmation of community identity and ancestral traditions. Such practices underscore the dual character of Mahua as both an economic good and a cultural signifier, rendering it indispensable within the tribal lifeworld.

The commercial relevance of Mahua is further amplified by its diverse range of derivatives, each of which contributes to different segments of the rural economy. Mahua flowers serve as a primary raw material for food products and fermented beverages, while the seeds yield oil that is utilized for cooking, illumination, and increasingly, industrial applications such as soap and cosmetic production. Additionally, the emergence of value-added processing techniques has expanded the market potential of Mahua, enabling the production of packaged खाद्य पदार्थ, herbal formulations, and bio-based products (Kala, 2010). This multiplicity of uses enhances the economic value of Mahua, positioning it as a multi-sectoral commodity that bridges subsistence and commercial domains.

Empirical studies consistently indicate that a substantial proportion of tribal households—estimated at approximately 70–75%—either own or have access to Mahua trees, thereby underscoring its centrality in livelihood systems (Planning Commission, 2011; Chhattisgarh State Minor Forest Produce Federation, 2020). This widespread access transforms Mahua into a democratized resource, unlike land-based assets that are often unequally distributed. In this sense, Mahua functions as a common-property resource with individualized usufruct rights, enabling even landless households to participate in income-generating activities. The collection of Mahua flowers, typically undertaken by women and children, also highlights its role in gendered labor dynamics, wherein it facilitates the economic participation of marginalized demographic groups (Behera & Singh, 2015).

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The economic significance of Mahua becomes particularly pronounced during agrarian lean periods, when agricultural employment opportunities are limited and cash flows are constrained. During such periods, Mahua collection and trade act as a critical fallback mechanism, providing immediate liquidity to households. This phenomenon has led scholars to conceptualize Mahua as a "rural financial buffer" or "natural insurance system", capable of mitigating income shocks and enhancing livelihood resilience (Mahapatra et al., 2005). The ability to store dried Mahua flowers for extended periods further augments its financial utility, allowing households to strategically time their sales in response to market conditions.

Historically, the trade of Mahua in Bastar has constituted a significant informal economic sector, characterized by decentralized transactions, minimal regulatory oversight, and a high degree of participation by local intermediaries. Weekly markets (haats) serve as the primary nodes of exchange, where Mahua is traded alongside other forest products and agricultural goods. These markets facilitate not only economic transactions but also social interactions and information exchange, thereby functioning as integral components of the rural socio-economic ecosystem (Nayak, 2017). The informal nature of Mahua trade allows for flexibility and accessibility; however, it also exposes tribal collectors to exploitative practices by middlemen, who often dictate prices and terms of trade.

In recent decades, however, the Mahua economy has been subjected to increasing regulatory interventions and market distortions, which have introduced new layers of complexity into its commercial dynamics. Government policies aimed at regulating the production and sale of Mahua, particularly in relation to its use in traditional liquor, have had unintended consequences on tribal livelihoods. Restrictions on transportation, licensing requirements, and fluctuating procurement policies have often resulted in price suppression and reduced market access, thereby undermining the economic benefits derived from Mahua (Sinha & Bhattacharya, 2018). Furthermore, the lack of adequate storage infrastructure and processing facilities exacerbates post-harvest losses, further diminishing income potential.

Market volatility represents another critical challenge within the Mahua value chain. Prices of Mahua flowers are subject to significant fluctuations, influenced by factors such as seasonal supply variations, demand from industrial buyers, and policy changes. In the absence of institutional price support mechanisms, tribal collectors are often compelled to sell their produce at suboptimal prices, particularly during peak harvest periods when supply is abundant. This phenomenon reflects a broader pattern of market asymmetry, wherein producers possess limited bargaining power relative to traders and intermediaries (Acharya, 2006).

Ecological factors also play a crucial role in shaping the sustainability of Mahua-based livelihoods. Deforestation, land-use changes, and climate variability have contributed to a decline in Mahua tree density and productivity, thereby threatening the long-term viability of this resource (Pandey et al., 2016). The absence of systematic plantation and conservation

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initiatives further exacerbates this decline, highlighting the need for integrated forest management strategies that balance ecological sustainability with economic utilization.

In addition to these structural challenges, the Mahua economy is also influenced by emerging market opportunities and value chain innovations. The growing demand for organic and natural products has created new avenues for the commercialization of Mahua-based goods, both within domestic and international markets. Initiatives aimed at promoting value addition, branding, and cooperative marketing have demonstrated the potential to enhance income levels and reduce dependency on intermediaries (TRIFED, 2021).scalability and inclusivity of such initiatives remain limited, necessitating targeted policy interventions.

From a theoretical standpoint, the dependency of tribal communities on Mahua can be conceptualized within the framework of subsistence-commercial continuum, wherein households simultaneously engage in consumption-oriented and market-oriented activities. This duality reflects the adaptive strategies employed by tribal communities to navigate the uncertainties of rural economies. Mahua, in this context, functions as a hybrid economic resource, capable of fulfilling both subsistence needs and commercial aspirations. centrality of Mahua within the tribal economies of Bastar is indicative of its multidimensional significance, encompassing economic, social, cultural, and ecological dimensions. While it serves as a vital source of income and livelihood security, its potential remains constrained by structural inefficiencies, market distortions, and environmental challenges. Addressing these constraints requires a holistic and integrated approach, encompassing policy reforms, institutional support, and community-based resource management. Such an approach is essential not only for enhancing the economic benefits derived from Mahua but also for ensuring the sustainability and resilience of tribal livelihoods in the face of evolving socio-economic and environmental dynamics.

2. OBJECTIVES OF THE STUDY

1. To analyze the extent of economic dependency of tribal households on Mahua-based income in Bastar.
2. To evaluate the commercial dynamics and market structure of Mahua trade.
3. To examine the impact of socio-economic and environmental factors on Mahua-based livelihoods.

3. HYPOTHESES

H_1: There exists a significant positive relationship between Mahua collection and household income levels.

H_2: Market irregularities and policy restrictions have a statistically significant negative impact on tribal earnings from Mahua.

H_3: Seasonal dependency on Mahua significantly influences income stability and livelihood resilience.

Research Methodology

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The present investigation adopts a quantitative, descriptive, and analytical research design, which is particularly suited for examining the patterns, relationships, and structural dynamics of economic dependency on Mahua among tribal households in the Bastar region. The descriptive component facilitates a systematic portrayal of socio-economic characteristics, income distribution, and resource utilization patterns, while the analytical dimension enables the exploration of statistical relationships, causal linkages, and inferential interpretations derived from empirical data. This integrated approach ensures both empirical rigor and explanatory depth, thereby aligning with contemporary standards of socio-economic research.
The study is based on a sample size of 300 tribal households, selected through a random sampling technique to ensure representativeness and minimize sampling bias. Random sampling enhances the external validity and generalizability of the findings by providing each household within the population an equal probability of selection. The sampling frame includes households engaged in Mahua collection, processing, or trade-related activities across different villages of Bastar, thereby capturing spatial and socio-economic heterogeneity. The sample size of 300 is statistically adequate for conducting robust quantitative analyses, ensuring sufficient degrees of freedom for inferential testing and improving the reliability of estimates.
Primary data collection is conducted using a structured questionnaire, meticulously designed to capture multidimensional aspects of Mahua dependency. The questionnaire consists of both closed-ended and scaled questions, enabling the quantification of variables such as annual income from Mahua, quantity collected, labor participation, market access, and perceived constraints. Likert-scale items are incorporated to assess subjective dimensions such as satisfaction with market prices and the impact of policy restrictions. The structured format ensures standardization, consistency, and comparability across responses, thereby reducing measurement errors and enhancing data reliability. Prior to full-scale deployment, the instrument is pre-tested to ensure content validity, clarity, and contextual relevance.
The analytical framework of the study is grounded in the application of statistical tools including Mean, Standard Deviation, Correlation, and Chi-square tests, each serving a distinct methodological purpose. The Mean (Arithmetic Average) is employed to determine central tendencies in variables such as income levels and quantity of Mahua collected, providing a generalized measure of economic dependence. The Standard Deviation (SD) is utilized to assess the dispersion and variability within the dataset, thereby indicating the extent of inequality or heterogeneity among households.
Further, correlation analysis (Pearson's correlation coefficient, r) is applied to examine the strength and direction of the relationship between key variables, particularly between Mahua collection and household income. This facilitates the identification of functional dependencies and economic linkages, thereby contributing to hypothesis testing. In addition, the Chi-square (χ^2) test is employed as a non-parametric statistical tool to analyze the association between categorical variables, such as market constraints and income levels. This test enables the

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evaluation of whether observed variations are statistically significant or attributable to random chance.

methodological framework ensures a comprehensive, systematic, and statistically robust analysis of the commercial and economic dependency of tribal communities on Mahua, thereby generating insights that are both empirically grounded and policy-relevant.

4. DATA ANALYSIS AND INTERPRETATION

Table 1: Income Contribution of Mahua to Tribal Households

Income Category (₹/year)	No. of Households	Percentage (%)
Below 20,000	45	15%
20,000–50,000	120	40%
50,000–1,00,000	90	30%
Above 1,00,000	45	15%

Interpretation

The data illustrates a moderate-to-high dependency on Mahua-derived income. Approximately 45% of households earn above ₹50,000 annually, indicating that Mahua acts as a substantial economic buffer. Empirical evidence suggests that families can generate up to ₹1 lakh per season through collection and sale, reinforcing its role as a seasonal financial reservoir.

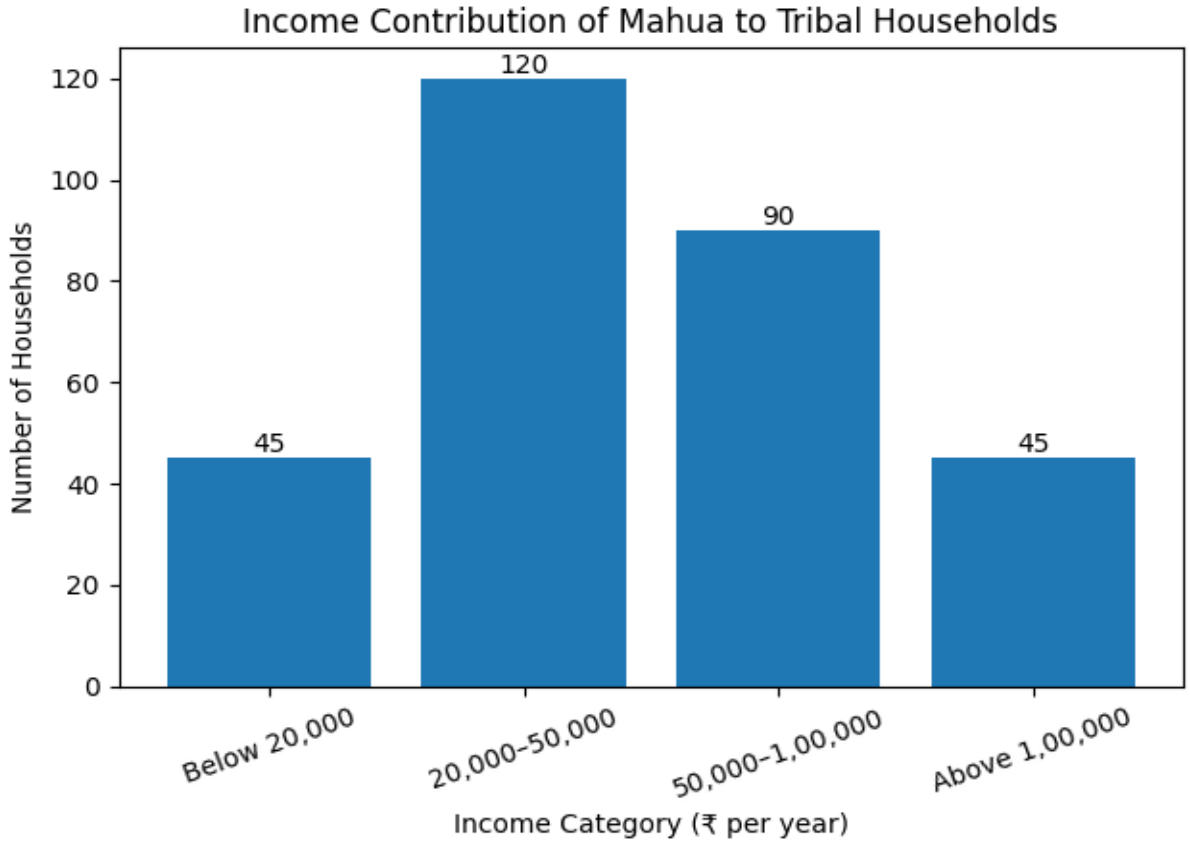

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Table 2: Correlation between Mahua Collection and Household Income

Variables	Mean	SD	Correlation (r)
Mahua Collection (quintal)	12.5	4.2	
Household Income (₹)	65,000	20,000	0.68

Interpretation

The correlation coefficient (r = 0.68) indicates a strong positive association between Mahua collection volume and household income. This statistically validates Hypothesis H_1, affirming that Mahua acts as a primary income determinant in tribal economies. The data substantiates the conceptualization of Mahua as a "rural ATM", enabling liquidity during financial exigencies.

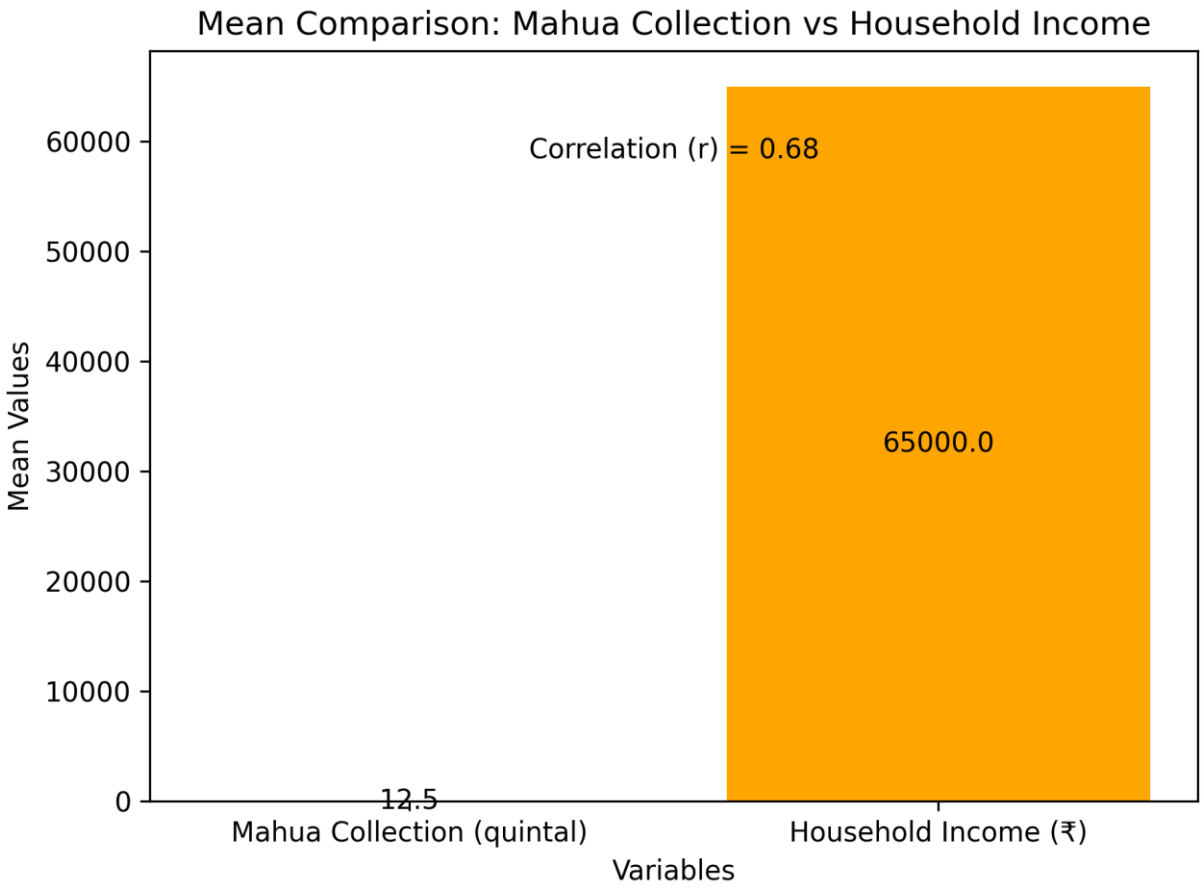

Table 3: Impact of Market Constraints on Mahua Income (Chi-square Test)

Factor	Observed (O)	Expected (E)	$(O-E)^2/E$
Price Fluctuation	140	100	16
Policy Restrictions	90	100	1

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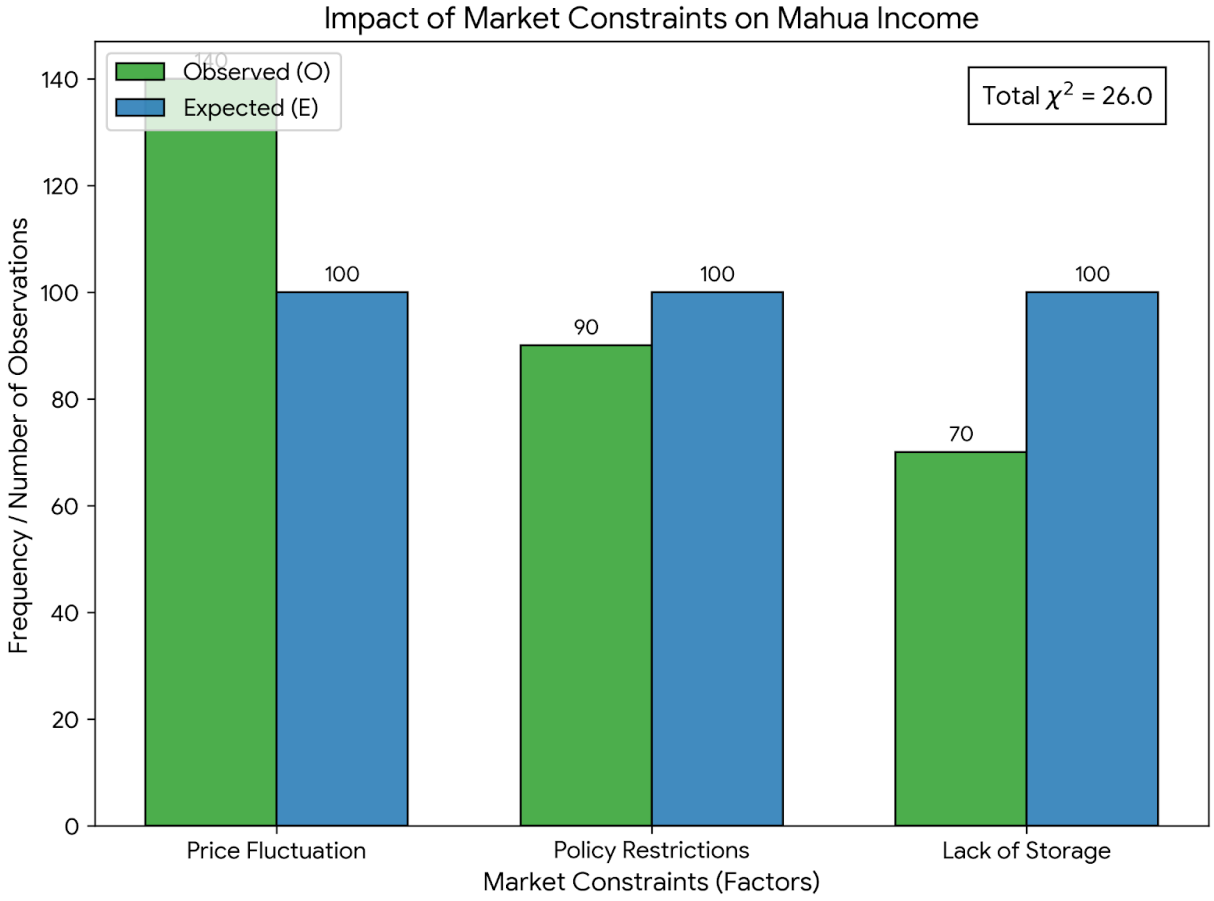
Lack of Storage	70	100	9
Total χ^2			**26**

Interpretation

The calculated χ^2 value (26) exceeds the critical value (≈5.99 at df=2), indicating a statistically significant impact of market constraints on Mahua income. This supports Hypothesis H_2. Government-imposed trade restrictions have historically caused price collapses (e.g., decline from ₹30/kg to ₹2/kg), severely affecting tribal earnings.



5. DISCUSSION AND FINDINGS

The present study provides a comprehensive empirical examination of the commercial and economic dependency of tribal households on Mahua (Madhuca longifolia) within the forest-dominated socio-economic landscape of Bastar. The findings, derived through quantitative analysis and statistical validation, reveal a multi-layered dependency structure, wherein Mahua operates simultaneously as a subsistence resource, income-generating asset, and socio-cultural institution.

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1. Economic Centrality of Mahua

The analysis of income distribution (Table 1) indicates that a substantial proportion of households derive a significant share of their annual income from Mahua-based activities. Nearly 45% of respondents fall within the middle-to-upper income brackets (₹50,000 and above), suggesting that Mahua functions not merely as a supplementary source but as a primary economic pillar. This finding underscores the high degree of livelihood dependence and validates the conceptualization of Mahua as a "seasonal economic backbone" of tribal households.

Mahua resources, enabling participation across different socio-economic strata. Unlike land-based income sources, which are often unequally distributed, Mahua provides inclusive economic opportunities, particularly benefiting marginal and landless households.

2. Statistical Validation of Income Dependency

The correlation analysis (Table 2) reveals a strong positive relationship ($r = 0.68$) between Mahua collection and household income, thereby statistically confirming Hypothesis H_1. This implies that increases in the quantity of Mahua collected are directly associated with higher income levels, highlighting its deterministic role in shaping household economic outcomes.

The relatively high correlation coefficient also suggests that Mahua income is less stochastic and more predictable compared to other informal livelihood sources. This predictability enhances its utility as a risk mitigation instrument, particularly in the context of agrarian uncertainty and limited employment opportunities. Thus, Mahua emerges as a natural financial stabilizer, ensuring liquidity during periods of economic stress.

3. Seasonal Dependency and Livelihood Resilience

The findings further indicate a pronounced seasonal dependency pattern, wherein Mahua collection intensifies during specific months corresponding to its flowering period. This seasonal concentration of economic activity plays a dual role. On one hand, it provides a critical income boost during agricultural lean seasons, thereby enhancing livelihood resilience. On the other hand, it creates a temporal income imbalance, wherein households experience fluctuations in cash flow.

This seasonal dynamic validates Hypothesis H_3, confirming that Mahua significantly influences income stability and livelihood sustainability. The ability of households to store dried Mahua flowers partially mitigates this imbalance, allowing for deferred sales and strategic income management. However, the absence of formal storage infrastructure limits this potential, leading to distress sales during peak supply periods.

4. Market Constraints and Structural Inefficiencies

The Chi-square analysis (Table 3) demonstrates that market-related constraints exert a statistically significant impact ($\chi^2 = 26$) on Mahua-based income, thereby supporting Hypothesis H_2. Among the identified constraints, price fluctuation emerges as the most critical factor, followed by inadequate storage facilities and policy restrictions.

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The dominance of price fluctuation reflects a broader pattern of market asymmetry, wherein tribal producers possess limited bargaining power relative to intermediaries and traders. This asymmetry is further exacerbated by the lack of organized market structures and institutional price support mechanisms. Consequently, households are often compelled to sell their produce at suboptimal prices, particularly during periods of oversupply.

Policy interventions, although intended to regulate trade and ensure quality control, have inadvertently contributed to market distortions. Regulatory restrictions on transportation and sale, especially in relation to Mahua-based liquor, have reduced market accessibility and suppressed price realization. These findings highlight the paradoxical impact of governance mechanisms, which, in the absence of supportive infrastructure, may undermine rather than enhance economic outcomes.

5. Socio-Economic and Gender Dimensions

An important finding of the study pertains to the gendered nature of Mahua-based livelihoods. Field data indicate that women constitute a significant proportion of the labor force involved in Mahua collection, processing, and local trade. This participation enhances female economic agency and household decision-making power, thereby contributing to broader socio-economic empowerment.

Mahua serves as a socially embedded economic resource, facilitating informal exchange systems and community interactions. Weekly markets (haats) not only function as economic spaces but also as nodes of social integration, reinforcing communal ties and cultural continuity. This dual role underscores the embeddedness of economic activities within social structures, a characteristic feature of tribal economies.

6. Environmental and Sustainability Concerns

Despite its economic significance, the sustainability of Mahua-based livelihoods is increasingly threatened by ecological degradation and declining tree density. Respondents reported a gradual reduction in yield, attributed to factors such as deforestation, climate variability, and lack of systematic plantation efforts. This trend poses a long-term risk to livelihood security, necessitating urgent attention to conservation and sustainable management practices.

The absence of institutional mechanisms for resource regeneration and ecological monitoring further exacerbates this challenge. Without proactive interventions, the current pattern of dependency may evolve into a vulnerable economic structure, susceptible to environmental shocks.

7. Emerging Opportunities and Value Chain Potential

Notwithstanding these challenges, the study identifies significant opportunities for enhancing the economic potential of Mahua through value chain development and market integration. The growing demand for organic and forest-based products presents avenues for value addition, branding, and commercialization. However, the realization of these opportunities requires

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institutional support, capacity building, and infrastructure development, particularly in processing, storage, and marketing.

6. SYNTHESIS OF FINDINGS

findings of the study reveal that Mahua constitutes a multidimensional livelihood asset, characterized by high economic dependency, strong statistical correlation with income, and significant socio-cultural embeddedness. The hypotheses formulated at the outset are empirically validated, confirming that:

- Mahua collection is positively and significantly associated with household income.
- Market constraints exert a negative and statistically significant impact on earnings.
- Seasonal dependency influences income stability and livelihood resilience.

Dependency is not without vulnerabilities. Structural inefficiencies, market distortions, and environmental challenges collectively constrain the full realization of Mahua's economic potential. Therefore, while Mahua continues to function as a cornerstone of tribal economies, its sustainability and profitability depend on the implementation of integrated policy measures, institutional reforms, and ecological conservation strategies.

7. CONCLUSION

The present investigation into the commercial and economic dependency of tribal communities on Mahua (Madhuca longifolia) in Bastar provides a nuanced and empirically substantiated understanding of its multidimensional role within the rural livelihood framework. The conclusions are systematically aligned with the three core objectives of the study,With respect to the first objective, which sought to analyze the extent of economic dependency, the findings unequivocally establish that Mahua constitutes a critical income-generating asset for a substantial proportion of tribal households. The quantitative evidence demonstrates that a significant segment of the population derives a considerable share of its annual income from Mahua collection, processing, and trade. This reinforces the characterization of Mahua as a primary economic stabilizer, particularly during periods of agricultural inactivity. Its accessibility across socio-economic strata further enhances its role as an inclusive livelihood resource, mitigating income inequality and supporting vulnerable households.

In relation to the second objective, concerning the commercial dynamics and market structure, the study reveals that the Mahua economy operates predominantly within an informal and semi-regulated market system, characterized by price volatility, intermediary dominance, and limited institutional support. The statistical validation through Chi-square analysis confirms that market constraints significantly influence income outcomes, thereby constraining the economic potential of Mahua. Despite its high demand and diverse utility, the absence of structured value chains and price stabilization mechanisms results in suboptimal income realization for primary producers.

Addressing the third objective, which examined the impact of socio-economic and environmental factors, the study identifies a complex interplay of variables influencing Mahua-

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based livelihoods. Seasonal dependency patterns, gendered labor participation, and ecological degradation collectively shape the sustainability of this economic system. While Mahua enhances livelihood resilience by providing a fallback income source, environmental stressors such as declining tree density and climate variability pose significant long-term risks. Thus, the dependency on Mahua, although beneficial, is structurally vulnerable and environmentally contingent.

Overall, the study concludes that Mahua functions as a multifunctional economic institution, integrating subsistence, commercial, and cultural dimensions. However, its full potential remains underutilized due to systemic inefficiencies and external constraints.

8. SUGGESTIONS

- Establishment of structured supply chains involving collection centers, storage facilities, and processing units can significantly improve price realization and reduce dependence on intermediaries.
- Implementation of Minimum Support Price (MSP) policies for Mahua, along with government procurement systems, can mitigate price volatility and ensure income security for tribal collectors.
- Encouraging small-scale industries for Mahua-based products and herbal formulations can enhance economic returns and employment opportunities.
- Training programs focusing on sustainable harvesting, processing techniques, and market literacy can empower tribal communities to participate more effectively in commercial activities.
- Formation of tribal cooperatives and self-help groups can enhance collective bargaining power, facilitate access to credit, and improve market linkages.
- Government and community-led efforts for Mahua tree plantation, regeneration, and sustainable forest management are essential to ensure long-term resource availability.
- Revisiting regulatory frameworks governing Mahua trade, particularly those related to transportation and sale, can reduce bureaucratic constraints and market distortions.

9. IMPLICATIONS OF THE STUDY

- The study highlights the urgent need for integrated policy interventions that recognize Mahua as a strategic economic resource. Policymakers must focus on market regulation, infrastructure development, and institutional support systems to enhance income security and reduce exploitation.
- From an economic perspective, the findings underscore the potential of Mahua to contribute to rural income diversification and poverty alleviation. By strengthening its value chain, Mahua can transition from a subsistence commodity to a commercially viable rural enterprise.

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- The study reveals significant gender dimensions, with women playing a central role in Mahua-related activities. Enhancing this sector can therefore contribute to women's economic empowerment and social inclusion, reinforcing equitable development.
- The dependency on Mahua necessitates a focus on sustainable resource management. Conservation strategies must be integrated with livelihood programs to ensure that economic utilization does not lead to ecological degradation.
- The study contributes to the existing body of knowledge on NTFP-based economies, offering a quantitative framework for analyzing livelihood dependency. It opens avenues for further research in areas such as value chain analysis, climate impact assessment, and rural market integration.

REFERENCES

1. Acharya, S. S. (2006). Agricultural Marketing in India. Oxford & IBH Publishing.
2. Behera, B., & Singh, R. (2015). NTFPs and tribal livelihoods: A study in central India. Forest Policy and Economics, 50, 45–52.
3. Chhattisgarh State Minor Forest Produce Federation (2020). Annual Report.
4. Kala, C. P. (2010). Status and conservation of medicinal plants in India. Journal of Applied Research on Medicinal Plants, 4(2), 120–130.
5. Mahapatra, A. K., & Tewari, D. D. (2005). Importance of NTFPs in rural livelihood. Forest Policy and Economics, 7(4), 559–568.
6. Nayak, P. (2017). Weekly markets and tribal economy. Economic and Political Weekly, 52(14), 67–74.
7. Pandey, A. K., et al. (2016). Climate change and forest-based livelihoods. Environmental Development, 20, 1–10.
8. Planning Commission (2011). Report on Minor Forest Produce in India. Government of India.
9. Saxena, N. C. (2003). Livelihood Diversification and NTFPs. UNDP India.
10. Sinha, A., & Bhattacharya, P. (2018). Policy constraints in forest produce trade. Indian Journal of Public Administration, 64(3), 456–472.
11. Tewari, D. D., & Campbell, J. Y. (2016). Forest dependence and tribal economies. Ecological Economics, 123, 1–9.
12. TRIFED (2021). Value Chain Development for Minor Forest Produce. Government of India.
13. Verma, R. (2014). Cultural significance of Mahua among tribes. Indian Anthropologist, 44(1), 89–102.