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Barriers to Millet-based Enterprise Development among Rural Women Self-help Group Members in Odisha

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ABSTRACT

Background: Rural women constitute a substantial proportion of Odisha's agricultural workforce but continue to face limited access to profitable livelihood opportunities. Self-help groups under Mission Shakti Programme are offering assistance and support for mobilization of these deprived women towards millet-based enterprises, yet they still face barriers and roadblocks hampering their net returns, all-round empowerment and eventually their livelihood.

Methods: This analysis was conducted in Khordha and Keonjhar districts of Odisha by following an ex-post facto research design. A sample of 200 rural WSHG members was selected through multi-stage sampling method. Henry Garrett's ranking technique was employed to determine and grade the problems witnessed by respondents across various pre-defined dimensions.

Result: The top-ranked constraints under each dimension were found to be: successive land division limiting cultivation scale (under agronomic); paucity of cold storage/warehousing facilities (under infrastructural); restriction of participation due to patriarchal norms (under socio-personal); lack of proper access to credit from institutional sources (under financial); and vagueness in division of roles and responsibilities (under managerial dimension). The inferences displayed that promotional and purely technical problems were overshadowed by institutional, organizational and structural deficiencies. The study recommends a solution-oriented, multidimensional policy approach to strengthen millet-based livelihoods among rural WSHG members.

Key words: Constraints, Garrett ranking, Millet-based enterprises, Mission shakti, Rural women, WSHGs.

INTRODUCTION

Agriculture as a prominent sector in Indian economy with relevance in livelihood and sustenance (Selvan *et al.*, 2021), cannot ignore the presence of rural women in field (Das *et al.*, 2021) who constitute about almost 80 percent of rural workforce (Press Information Bureau, 2026). Still these women remain marginalized, deprived of basic services like finance, health, education, *etc.* and bearing the disproportionate domestic workload, contributing to their limited agency in form of stereotypical roles. This paves the way for women empowerment focusing on the capacity of informed decision-making with equitable accessibilities (Alkire *et al.*, 2013). One of the approaches that could provide long-term solutions is women entrepreneurship for nourishing socio-economic growth and inclusive development. The growth of women entrepreneurship substantially fosters to economic activity by minimizing unemployment and nourishing innovation tending to socio-economic welfare (Abdelwahed *et al.*, 2022). Nearly 20.37 per cent ownership of proprietary MSMEs by the women reflects severe gender gap in nation's entrepreneurship arena. Even though 110.9 million employed in MSME sector, women's contribution remains small at just 24 per cent which puts the impetus for supporting rural women's entrepreneurial ventures (Nayak and Nayak, 2025).

As per the conditions prevailing in rural India, the suitable push to the women entrepreneurship can be promoted through women Self-Help Group framework, elevating women's status with active participation in household as well as community life. This empowerment gets strengthened by group action and informed decision-making action, financial availability and income generation, which boosts the agency of the households (Datta *et al.*, 2018). Though the effects of psychological empowerment have been limited, WSHGs have had positive impacts on resource control and mobility, particularly on lines of credit, which positively affects household income and on a broader socio-economic and political empowerment. WSHGs are

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membership-based organizations that provide individual support and community mobilization.

In Odisha, Mission Shakti Programme, started in 2001, played a significant role in empowering women in rural areas by leveraging Women's Self-Help Groups (WSHGs), promoting entrepreneurship and providing business and financial skills training. Special training programmes have been executing regarding finance and networking aspects of business, along with focus on technical skills, confidence and leadership for these women and thus enhancing their level of socio-economic inclusion and resilience (Dash *et al.*, 2025). However, weak structural organization, narrow participation and accountability gaps, however, remain some difficulties that many WSHGs face in achieving sustainability (Panda *et al.*, 2024). In view of this concern as explained above, a panoramic research inquiry was undertaken to dissect the problems witnessed by the WSHG members in the countryside region while conducting their business under Mission Shakti Programme for millet-based enterprises.

MATERIALS AND METHODS

The study was carried out in two districts of Odisha, *i.e.*, Keonjhar and Khordha, which were selected purposively. Keonjhar, in the plateau zone, is a tribal-dominated, rainfed district recognized for successful millet cultivation under the Odisha Millets Mission, whereas Khordha, in the coastal plains, is the most urbanized district, containing the state capital and representing a peri-urban production and market environment. Since both districts maintain an ample base of WSHGs under Mission Shakti, sufficient for the sampling frame, this deliberate contrast in agro-climatic, infrastructural and market context strengthens the generalizability of findings across different production environments. The following map (Fig 1) depicts the state of Odisha and districts with its respective boundaries.

Selection of blocks and villages

Multi-stage random sampling method was employed for the sample selection. At first, a comprehensive list of blocks, villages and WSHGs under mission shakti programme was prepared. Two blocks from each district and two panchayats from each block were chosen in simple random sampling format. The selection of WSHGs was conducted by following purposive sampling since targeting the self-help groups working under the concerned programme. The respondent selection from each of WSHGs was conducted in disproportionately randomized manner. The following Table 1 showcases the model of sample selection under the investigation.

Thus, the total sample constituted of 200 WSHG respondents. An interview schedule was prepared based on theme, pretested on 10 per cent of the non-sampled respondents and read aloud in Odia language to elicit correct answers and then feedback was used to improve relevance and validity prior to finalization (Jayasingh *et al.*, 2024). Data collection took place with the help of WSHG leaders, Mission Shakti officials, facilitators from NGOs, community resource persons, village leaders, female area coordinators, Anganwadi workers, ASHA workers at the respondents' homes and workplaces with an informal atmosphere to ensure that respondents were not influenced or intimidated while answering. The process lasted from March 2024 to October 2025, following an ex-post facto research design.

Henry Garrett's ranking technique

This procedure was employed to gauge the problems encountered by the WSHG respondents by the orders of merit provided by them which were later transformed into rank by using a suitable formula. At first, the respondents were quizzed about the issues that have been the roadblocks for them towards WSHG working and then were enlisted under different dimensions named as 'Agronomic', 'Infrastructural', 'Socio-Personal', 'Financial' and 'Managerial'. The respondents were instructed to rank these issues under as per their perception of seriousness towards issues that needs to corrected or mitigated and then these obtained ranks were later converted to score



Fig 1: Political map of Odisha state with its districts.

values by employing the formula stated (Garrett and Woodworth, 1969) as mentioned below:

$$\text{Per cent position} = \frac{100\ (R_{ij} - 0.5)}{N_j}$$

Where,

R_{ij} = Rank given for the ith constraint by j^{th} respondent.

N_j = Number of constraints under each dimension.

Then the per cent position was transformed to scores by the use of Garrett's table. For each constraint, the scores obtained were added and then total score value was divided by the number of respondents to obtain mean score value of that particular constraint. The ranking of the constraints under each dimension was conducted by assigning first to last rank to them in the decreasing order of the score values.

RESULTS AND DISCUSSION

Agronomic constraints

Table 2 depicts about the agronomic constraints experienced by rural WSHG members in millet-based activities as per their decreasing scores. "Successive land division limiting the scale of millet cultivation" was ranked first (79.40, Rank I) indicating the overall fragmentation of land use in Indian agriculture where land is being divided into smaller and smaller parcels (Roy *et al.*, 2020) in a manner of inheritance. Millets are often associated with larger rainfed and marginal areas needed to generate profit, thus fragmentation stifles economies of scale and mechanization and it is less likely to be cultivated. "Preference for remunerative cash crops" ranked second in problem rankings. Since the incentive for remunerative crops such as cotton, sugarcane or horticultural crops been higher as compared to millets and with historically poor market linkages and price support, women farmers with smaller plots with lesser of land and resources are rational in allocating their land to better-paying crops, despite the nutritional and ecological benefits of millets (Kheya *et al.*, 2023).

"Inadequate threshing and winnowing practice causing post-harvest losses" was third ranked, highlighting the lack of adequate post-harvest mechanization at grassroots level. Manual and drudgery-intensive processing leads to grain and quality losses and it also lowers the incentives to increase grain production, since the output in the market is limited in comparison to the labour invested. Other constraints, although not so severe as the above, are still relevant to the production level, from "irrigation shortfalls", "rainfall fragility", "pest and bird depredation", "poor seed availability" and "weak soil health management". Together, these results highlight the lack of effectiveness of either input supply or climate-resilience interventions by themselves. In order to ensure the economic competitiveness and sustainability of millet culture in the context of millet revival and nutrition security, mitigation measures such as addressing land consolidation, improving remunerative procurement and value chain support and introducing appropriate post-harvest technologies are needed.

Infrastructural constraints

Table 3 shows the infrastructural constraints faced by the rural WSHG members in the activities involving millet

Table 1: Selection of respondents from the sample.

Districts	Blocks	Panchayats	No. of WSHGs	No. of respondents
Keonjhar	Anandapur	Mochinda	4	19
		Fakirpur	3	15
	Ghasipura	Balrampur	3	17
		Bailo	7	49
Khordha	Balianta	Bhingarpur	6	28
		Kakarudrapur	6	30
	Balipatna	Majhihara	6	31
		Deulidharpur	5	11

Table 2: Agronomic constraints faced by rural WSHG members involved in millet-based activities.

Constraints	Mean score	Rank
Paucity of quality millet seeds suitable to native conditions	42.34	VII
Fragility of millet crops to erratic rainfall and other weather variations	55.61	V
Crop depredation by pest and bird attacks	48.34	VI
Successive land division limiting the scale of millet cultivation	79.40	I
Preference from remunerative cash crop production against millets	72.11	II
Absence of soil health management practices affecting yield	38.72	VIII
Shortfall of irrigation facilities during critical growth stages	62.42	IV
Inadequate threshing and winnowing practice causing post-harvest losses	69.53	III

production as ranked by Garrett scores. "Paucity of cold storage or warehousing facilities for finished products" was the most common (78.12, Rank I) which pertains to the post-harvest infrastructure deficits in Indian farming sector. Without scientific storage facilities, producers are forced to sell immediately after processing at low prices and loss of quality and spoilage reduces the profits earned from value added products (Hussain and Guha, 2023). "Shortage of waste management in post-processing system" ranked as second, which showcases about an ignored aspect of small-scale food processing. Build-up of husk, bran and residues that are not disposed of properly negatively impact hygiene and working conditions, as well as serve as a lost resource to be recovered, such as residues as fodder or organic input (Suri *et al.*, 2024).

"Presence of marketing outlets (Millet Cafes) only in cities" was ranked third, indicating a strong rural-urban divide in value-chain development. This spatial mismatch reduces direct producer-consumer linkages, promotes reliance on intermediaries and prices realization despite the rising urban demand. Other constraints, from "lack of onsite childcare" to "irregular electricity supply"-although were lower in comparison, they still negatively influence the processing and value addition. Overall, these findings indicate that interventions focusing on the infrastructure of the supply chain should prioritize the decentralized cold storage and warehousing, waste-utilization systems and rural-based or mobile marketing platforms over isolated supply chain utility-building efforts, all of which are critical for turning millet processing potential into sustainable income generation.

Socio-personal constraints

Table 4 showcases Socio-personal Constraints encountered by the rural WSHG members in millet-based activities which were ranked on the basis of mean scores. "Restriction of women participation due to patriarchal norms" was ranked highest, highlighting persistent and deep-rooted gender norms that restrict women despite their formal membership of WSHGs. This indicates that patriarchy remains even when there are institutional empowerment structures in place and that economic inclusion is not enough to challenge entrenched social inequalities (Shohel *et al.*, 2021).

"Prohibition toward developing and using infrastructure on common land" was ranked second (71.72, Rank II) among the socio-personal constraints which point towards the weight of primary responsibilities of household over their participation in WSHG activities (Deka *et al.*, 2024). The double burden on women places a structural constraint on continued participation in enterprise activities related to millets.

"Factionalism among the members of WSHGs" ranked third (65.46, Rank III) implying that the internal differences due to caste, kinship or personal differences weakens the cooperative trust and group cohesion, thereby the institutional strength of the WSHGs to support enterprise development.

Other constraints, albeit less pronounced, starting from "social stigma around millet-based products" to "Lack of cooperation and psychological support from family" remains barriers for these WSHGs in rural areas. Overall,

Table 3: Infrastructural constraints faced by rural WSHG members involved in millet-based activities.

Constraints	Mean score	Rank
Scarcity of common processing centres or custom hiring centres for millets at cluster level	47.34	V
Lack of regular electricity supply impacting processing activities	37.34	VIII
Shortage of waste management features in post-processing systems	69.56	II
Paucity of cold storage or warehousing facilities for finished products	78.12	I
Presence of marketing outlets (Millet Cafes) only in cities	57.87	III
Dearth of banking infrastructure (branches, ATMs) in vicinity areas	46.82	VI
Lack of onsite childcare facilities	51.84	IV
Deficiency of common drying yards for millet sun-drying	41.22	VII

Table 4: Socio-personal constraints faced by rural WSHG members involved in millet-based activities.

Constraints	Mean score	Rank
Factionalism among the members of WSHGs	65.46	III
Prohibition toward developing and using infrastructure on common land	71.72	II
Clash of WSHG-promoted roles against traditional gender roles	41.84	VII
Partisan biasness owing to local elites and influential villagers	50.52	V
Restriction of women participation due to patriarchal norms	77.64	I
Social stigma attached to millet-based products against staple crops	58.44	IV
Safety concerns while travelling for WSHG-related works	44.37	VI
Lack of cooperation and psychological support from family	34.54	VIII

the main socio-personal restrictions are patriarchal constraints, time poverty and intra-group factionalism, suggesting that interventions need not only to include socio-economic empowerment but also time saving support and building group cohesion, as a necessary component.

Financial constraints

Table 5 shows the financial constraints that are faced by the members of rural WSHG in the activities related to millets. "Lack of proper access to credit from institutional sources" was ranked the most serious of problems since formal credit conditions are restrictive, with stringent eligibility criteria, collateral requirements and lengthy procedures that limit the ability to absorb credit, continuing to rely on informal finance providers that provide poor conditions and further exacerbate enterprise vulnerability. The second most frequent problem was the high cost of maintaining and repairing processing machines, highlighting the economic vulnerability of technology-intensive small-scale businesses. In remote locations, this may be exacerbated by the lack of after-sales service and spare parts' availability, which will require working capital to be committed to repetitive maintenance and reduce the ability to scale up (Clark, 2020). The third ranked was "Absence of insurance coverage", indicating an urgent need for insurance coverage in the risk-management infrastructure. The risks of agricultural production, equipment functioning and retail prices make these enterprises vulnerable without formal risk-transfer systems, with the result that losses are borne solely by the resource-constrained women (Ghadermarzi, 2024).

Factors from "financial illiteracy" to "poor repayment behaviour", even though lower ranked, are still affecting financial sustainability of the WSHG members in rural areas. Together these findings highlight the need to go beyond the mere provision of microcredit to offer a range of financial interventions that facilitate easier access to institutional credit, provide support for machine maintenance and develop specialized insurance products that fit the risk profile of enterprises producing millets; such measures are vital for long-term economic viability and resilience.

Managerial constraints

The ranked seriousness of managerial constraints as rural WSHG members encountered in the activities of millets are presented in Table 6. "Vagueness in division of roles and responsibilities among members" came in at the highest rank (Mean Score: 78.18), indicating that unclear task allocation created free-riding behaviour, diffused accountability and inefficiency in operations which led to poor group functioning needed to sustain the group-based millet enterprises (Qi and Liu, 2024).

There were persistent capacity gaps in the area of leadership in WSHGs as they were institutionalized as a vehicle of empowerment, thus reporting "Lacklustre women leadership in WSHGs" as second ranked (71.52, Rank II). The deficiency of leadership training exposures combined with socio-cultural norms that deter assertive leadership and thus limits the development of women decision-makers who can navigate the challenges of operating and marketing enterprises based on millets.

A capacity deficit having cascading implications, "Improper accounting and documentation practices" ranked

Table 5: Financial constraints faced by rural WSHG members involved in millet-based activities.

Constraints	Mean score	Rank
High cost of maintenance and repairing of processing machines	70.12	II
Lack of proper access to credit from institutional sources	78.33	I
Slow procedure of approval of loan applications	50.42	V
Financial illiteracy affecting fund management and financial norms understandability	57.45	IV
Shortfall of working capital for running operations	44.37	VI
Absence of insurance coverage against uncertainties	63.34	III
Poor repayment behaviour due to uncertain nature of income	31.26	VIII
Inability of maintaining regular savings due to poverty	38.74	VII

Table 6: Managerial constraints faced by rural WSHG members involved in millet-based activities.

Constraints	Mean score	Rank
Lacklustre women leadership in WSHGs	71.52	II
Lack of regularity in conducting group meetings	41.87	VII
Vagueness in division of roles and responsibilities among members	78.18	I
Improper accounting and documentation practices in WSHGs	68.43	III
Lack of consensus during critical decision-making process	60.64	IV
Greater attrition rate of members impacting stability	47.29	VI
Lack of replacement planning for group leadership	53.36	V
Disjointed linkage with cluster-level organizations and federations	37.74	VIII

third (68.43, Rank III). Poor record-keeping can lead to internal financial mismanagement and negatively impact WSHGs' eligibility for institutional financing, government initiatives and external collaborations, limiting economic integration (Mdoda and Nontu, 2026).

The other constraints that are relatively lower ranked, from "lack of consensus during critical decision-making" to "discontinuous linkage with cluster-level organizations", still continue to impact organizational functioning. The managerial capacity-building efforts, which involve a structured definition of roles, continued leadership development and systematic documentation training, are important and need to be done collectively because otherwise technical, financial or market-oriented interventions will not go far enough to ensure the long-term success of enterprises where the organization is weak.

CONCLUSION

The study finds that there are multifaceted constraints on the rural WSHG members in their activities related to millets, which are interconnected and can be summarized as agronomic, infrastructural, socio-personal, financial and managerial. In all five domains, the lack of structure and institutional issues turned out to be more significant obstacles than technical, promotional and peripheral ones, such as fragmentation of land, lack of storage facilities, patriarchal norms, low institutional access to credit and unclear role allocation within the organization. This pattern highlights the need for a coordinated, women centered multi-dimensional approach, rather than isolated single dimension interventions, to strengthen WSHGs. This should include strengthening women's decision-making autonomy and leadership skills, relieving their time and care load, facilitating access to institutional credit and risk management instruments, enhancing their bargaining power in formal markets and providing them with organizational and managerial skills to effectively run the group. The enhancement of these interrelated capacities would help rural members of WSHGs to break the vicious cycle of socio-economic exclusion, have more say in their businesses and attain better and more lasting and equitable livelihood results. The findings provide policy and practice suggestions for policymakers, Mission Shakti officials and rural women development practitioners who can further contribute to the holistic empowerment of rural women through enterprise development through WSHG. Larger geographic and demographic studies might support these results and be used to expand the scope of these results for other region-specific policy interventions focused on women's capability strengthening.

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Disclaimers

The views and conclusions expressed in this article are solely those of the authors and do not necessarily represent the views of their affiliated institutions. The authors are responsible for the accuracy and completeness of the information provided, but do not accept any liability for any direct or indirect losses resulting from the use of this content.

Informed consent

Informed consent was obtained from all individual participants included in the study.

Conflict of interest

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