

# Self-Employment And Women Empowerment: Working Conditions, Credit Access, And Sustainability Among Self-Help Group Members in Rural India

<sup>1</sup> Mandadi Venkatesh Reddy

<sup>1</sup> Research Scholar, Department of Economics, Acharya Nagarjuna University, A.P.

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## Abstract

Women's economic participation through self-employment represents a critical pathway toward poverty alleviation and gender equality in developing economies. Self-Help Groups (SHGs) have emerged as transformative institutional mechanisms facilitating women's entrepreneurship, financial inclusion, and livelihood enhancement, particularly in rural contexts characterized by limited formal employment opportunities and persistent gender inequalities. Despite substantial policy attention and programmatic investments, empirical documentation of working conditions, operational challenges, and sustainability prospects among self-employed SHG women remains inadequate, constraining evidence-based intervention design. This study examines working conditions of self-employed women SHG members across agriculture, manufacturing, and services sectors in rural Andhra Pradesh, India. Employing a quantitative cross-sectional methodology, primary data were collected from 120 respondents (30 agriculture, 20 manufacturing, 70 services) through structured questionnaires using multi-stage random sampling from Mangalagiri and Tenali mandals of Guntur district. Descriptive and inferential statistical analyses examined education levels, income ranges, credit access patterns, working hours, infrastructure characteristics, SHG support types, constraints, technology adoption, marketing strategies, and sustainability perceptions. Findings reveal that 66.7% possess secondary education, with services sector demonstrating superior income distribution (42.9% earning ₹20,001-25,000 versus 33.3% agriculture, 25.0% manufacturing). SHGs constitute the primary credit source across all sectors (75.0% overall; agriculture 66.7%, manufacturing 75.0%, services 78.6%;  $\chi^2=1.89$ ,  $p=0.756$ ). Working hours predominantly cluster in the 6-8 hour range (54.2% overall), with 54.2% operating from own workspaces. Financial support from SHGs dominates (75.0%), while technical and marketing assistance remain limited. Lack of finance emerges as the paramount constraint (55.0%), followed by market access limitations (25.8%). Technology adoption remains modest, with 52.5% reporting non-adoption. Word-of-mouth constitutes the primary marketing strategy (41.7%), and 55.8% perceive high sustainability. Chi-square analyses demonstrate significant sectoral variations in income distribution ( $\chi^2=9.52$ ,  $p=0.049$ ) and major constraints ( $\chi^2=10.34$ ,  $p=0.035$ ), indicating differential challenges requiring sector-specific interventions. Implications extend to microfinance policy, SHG capacity building, and rural women's entrepreneurship promotion strategies.

**Keywords:** Self-Help Groups, women's self-employment, rural entrepreneurship, microfinance, working conditions, credit access, sustainability, Andhra Pradesh

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## I. INTRODUCTION

### 1.1 Global and National Context

Self-Help Groups (SHGs) have garnered international recognition as powerful institutional mechanisms enabling women's economic empowerment and poverty reduction in developing economies. Originating from grassroots microfinance innovations, SHGs represent collective action frameworks where women—typically 10-20 members from economically disadvantaged backgrounds—pool savings, access microcredit, and engage in income-generating activities through mutual support and democratic governance structures. The Grameen Bank model pioneered by Muhammad Yunus in Bangladesh exemplifies SHG effectiveness in fostering women's entrepreneurship, demonstrated through enhanced household incomes, improved education and health outcomes, and strengthened community development trajectories.

India's SHG movement commenced during the 1980s as a grassroots initiative organizing women for collective action and economic opportunity expansion. The National Bank for Agriculture and Rural Development (NABARD) formalized this initiative through the SHG-Bank Linkage Program (SHG-BLP) launched in 1992, promoting SHGs as instruments for rural women's mobilization, financial service access

enhancement, and socioeconomic empowerment. This framework has since expanded remarkably, with millions of women participating in SHGs nationwide, generating substantial livelihood improvements.

Recent statistics document the program's impressive scale. As of March 2023, the SHG-BLP reached 16.23 crore (162.3 million) households, up from 14 crore the previous year, establishing it as the world's largest microfinance platform. Among these, 1.34 crore (13.4 million) SHGs maintain savings linkages, while 42.96 lakh (4.296 million) possess credit linkages. Outstanding bank loans totaled ₹1.88 lakh crore (₹1.88 trillion), averaging ₹2.70 lakh per SHG—an increase from ₹2.24 lakh in 2021-22, indicating growing credit absorption capacity.

However, challenges persist. Regional imbalances characterize SHG savings and credit linkage distribution, with Southern and Eastern regions dominating credit uptake while other regions lag. Despite a 46% increase in loan disbursements during FY 2022-23, an overall credit linkage gap of 48% persists, compounded by inadequate data on SHG members' inter-lending activities. The fiscal year 2022-23 witnessed microfinance sector growth and stabilization following pandemic disruptions. A total of 16.19 crore rural households were covered under SHG-BLP, with 134.03 lakh SHGs linked to banks, accumulating savings of ₹58,892.67 crore—a 13% growth from the previous year. Among these, 112.92 lakh were all-women SHGs, accounting for 84% of total SHGs and 89% of savings, underscoring women's central role in India's microfinance landscape.

## **1.2 Impact and Challenges**

SHGs' impact in India has been profound, contributing to poverty reduction, enhanced self-esteem among women, increased decision-making power within households, and improved agency over life choices. Research demonstrates that SHG members exhibit higher propensity to invest in children's education and family healthcare, generating positive intergenerational effects. Furthermore, SHGs have facilitated skill development and entrepreneurship, creating pathways for women to engage in self-employment and contribute to local economic development through diversified livelihood activities.

Despite these achievements, self-employment opportunities for women through SHGs face significant obstacles. Many self-employed SHG women operate in informal sectors characterized by income instability, limited credit access beyond basic microfinance, inadequate working conditions, and vulnerability to market fluctuations. Factors including low educational attainment, sociocultural barriers restricting mobility and market interaction, limited technology access, and market accessibility constraints exacerbate these challenges. Understanding these working conditions assumes critical importance for developing targeted interventions enhancing the sustainability and success of self-employed women in rural areas.

## **1.3 Research Gap and Study Rationale**

While substantial research has examined SHG formation, functioning, and broad socioeconomic impacts, detailed empirical investigation of working conditions among self-employed SHG women remains limited, particularly regarding sector-specific variations, operational challenges, and sustainability prospects. Existing literature highlights vulnerabilities including constrained credit access, inadequate training and skill development opportunities, limited market linkages, insufficient social security coverage, and poor working hour patterns. However, the absence of comprehensive empirical evidence on specific working conditions and challenges faced by self-employed women SHG members hinders effective policy formulation and intervention design aimed at improving their livelihoods and well-being.

This knowledge gap assumes particular significance given self-employment's substantial contribution to rural women's empowerment and poverty reduction. Self-employed women SHG members face numerous challenges including formal credit access limitations despite SHG membership, restricted market access due to geographic isolation and intermediary dependence, inadequate entrepreneurship and technical training, long working hours with minimal remuneration, lack of social security benefits including health insurance and pension coverage, and limited technology adoption constraining productivity and market reach.

This study addresses identified gaps through systematic investigation of working conditions among self-employed women SHG members in rural Andhra Pradesh. Specifically, the research examines demographic characteristics, self-employment activity types and sectoral distribution, income levels and patterns, credit access sources and adequacy, working hours and infrastructure, SHG support types received, major operational constraints, technology adoption levels, marketing strategies employed, and sustainability perceptions. The study's findings inform policy decisions and programmatic interventions aimed at improving livelihoods and well-being of self-employed women SHG members while enhancing SHG effectiveness in promoting women's entrepreneurship.

## **II. LITERATURE REVIEW**

Timma Raju and Deepa (2011) examined training needs and knowledge deficits among women SHG members engaged in dairy farming in Mahaboobnagar district. The investigation identified key training

priorities including animal breeding techniques, nutrition management, and health care protocols. Findings revealed significant knowledge gaps among both economically advantaged and disadvantaged members, with participants favoring concise, community-based training sessions, particularly during summer months when agricultural activities diminish. Effective training methods encompassed interactive discussions, lectures, multimedia resources, and experiential learning through field demonstrations. The research demonstrated that blended training approaches yielded substantial knowledge gains, with exposure visits to successful dairy enterprises proving particularly influential in skill development and confidence building.

Madhusudhan Ghosh (2012) conducted comprehensive assessment of India's SHG-Bank linkage program, examining national and regional impacts on SHG member households' socioeconomic well-being over two decades. The analysis documented remarkable program growth, establishing it as the world's leading microfinance platform. Despite persistent regional disparities, expansion into underserved areas continues. Key outcomes include increased household income through diversified livelihood activities, asset accumulation reflecting improved economic security, enhanced savings demonstrating financial discipline, improved loan utilization patterns, strengthened repayment records reducing default rates, and reduced reliance on exploitative informal credit sources charging usurious interest rates. Productive loan usage has driven employment generation and poverty alleviation. Significantly, the study underscored substantial advancements in women's social empowerment through enhanced household decision-making participation, increased mobility and market interaction, strengthened self-confidence and agency, and improved social status within communities.

Prabhakar and Byram Anand (2015) highlighted the SHG Bank-Linkage Programme (SBLP) as vital for poverty alleviation in rural India, enabling economically disadvantaged individuals to access small credits and financial services meeting basic needs and improving livelihoods. The program has positively impacted millions of low-income borrowers, providing informal and flexible services for consumption smoothing and livelihood expenses. With over 84% of SHG members being women, SBLP significantly focuses on empowering rural women through financial inclusion, social empowerment, and economic independence. NABARD plays a pivotal role in promoting and financing SHGs through refinance support, capacity-building programs, and institutional development initiatives.

Samantaraya and Goswami (2015) examined microfinance's impact on West Bengal's socioeconomic dynamics, finding that microfinance products suited rural poor's needs by bypassing conventional institutional finance barriers including collateral requirements, formal documentation, and geographic inaccessibility. Disadvantaged castes and marginalized communities benefited most substantially. Female members gained employment through microfinance-funded activities including livestock rearing, agricultural production, embroidery, tailoring, and small-scale trading, promoting economic empowerment and household poverty reduction.

Santhosh Kumar (2016) investigated microcredit distribution's effect on women's economic empowerment in Kerala. Findings demonstrated significant economic improvement among women participating in self-help groups with microcredit access. Statistical analysis confirmed positive outcomes indicating economic empowerment through income generation, asset accumulation, and enhanced financial decision-making. However, sustainability concerns emerged as substantial microcredit portions were utilized for non-income-generating purposes including consumption, debt repayment, and social obligations, potentially limiting long-term economic benefits and requiring complementary interventions promoting productive credit utilization.

Rajpal and Tamang (2023) evaluated Women Self-Help Groups' (WSHGs) sustainability in Odisha using a multidimensional sustainability index. The two-pronged analysis assessed SHG institutional status and enterprise-level sustainability, revealing disconnects between perceived success and actual outcomes. While previous studies highlighted program effectiveness in poverty reduction and women's empowerment, the research showed that financial assistance alone proves insufficient for addressing multidimensional poverty encompassing health, education, living standards, and social inclusion. The study recommends collaborative efforts from government and non-government agencies promoting skill development, market linkage strengthening, technology adoption, and comprehensive support ensuring WSHGs' long-term sustainability beyond mere financial intermediation.

### **III. RESEARCH METHODOLOGY**

#### **3.1 Research Design and Study Area**

This investigation employed a quantitative cross-sectional research design examining characteristics, challenges, and prospects of self-employed women in rural Andhra Pradesh. The study was conducted in Mangalagiri and Tenali Mandals of Guntur district, Andhra Pradesh, India. These mandals were purposively selected due to their diverse economic and social profiles, active SHG presence, and varied self-employment activities spanning agriculture, manufacturing, and services sectors, providing representative samples of rural self-employment configurations.

### 3.2 Sampling Design

A multi-stage simple random sampling method was employed for respondent selection. In the first stage, six villages from each mandal were randomly selected using lottery method, resulting in twelve villages total. In the second stage, ten self-help group women engaged in self-employment were randomly selected from each village through systematic random sampling from SHG membership lists, yielding a total sample size of 120 respondents distributed across three sectors: agriculture (n=30), manufacturing (n=20), and services (n=70). The sectoral distribution reflected actual self-employment patterns in the study area where services sector employment predominates.

### 3.3 Data Collection

Primary data were collected through pre-tested, structured questionnaires administered personally to selected respondents during face-to-face interviews. The questionnaire comprised closed-ended and open-ended questions covering demographic characteristics (age, education, family size, marital status), self-employment details (sector, activity type, years of operation, income levels), working conditions (hours, infrastructure, equipment), credit access (sources, amounts, adequacy), SHG support received (financial, technical, marketing), constraints faced, technology adoption, marketing strategies, and sustainability perceptions.

Prior to main data collection, the questionnaire underwent rigorous pre-testing with 15 SHG women not included in the final sample to assess clarity, comprehensibility, cultural appropriateness, and response burden. Feedback informed minor modifications improving question wording, response category appropriateness, and overall instrument flow. Data collection occurred over three months, with trained field investigators conducting interviews in local language (Telugu), ensuring participant comfort and response accuracy.

### 3.4 Data Analysis

Data analysis involved descriptive statistics including frequencies, percentages, means, and standard deviations characterizing sample demographics and response distributions. Cross-tabulations with row percentages examined relationships between employment sector and various working condition dimensions, facilitating comparison across agriculture, manufacturing, and services categories. Chi-square tests of independence assessed statistical significance of associations between sector and selected variables at  $\alpha=0.05$  significance level, testing null hypotheses of no relationship. IBM SPSS Statistics version 26.0 was utilized for all statistical analyses.

### 3.5 Reliability and Validity

The questionnaire's reliability was assessed using Cronbach's alpha coefficient, yielding  $\alpha=0.85$ , indicating high internal consistency and measurement reliability. Content validity was ensured through expert review by three faculty members specializing in rural development, women's studies, and microfinance, whose recommendations informed instrument refinement. Pilot testing with 15 respondents further validated questionnaire appropriateness and effectiveness prior to main data collection implementation.

## IV. RESULTS AND DISCUSSION

### 4.1 Sample Distribution

The sample comprised 120 self-employed women SHG members distributed across three sectors: services (n=70, 58.3%), agriculture (n=30, 25.0%), and manufacturing (n=20, 16.7%). This distribution reflects actual self-employment patterns in rural Andhra Pradesh, where services sector activities including tailoring, retail trade, food preparation, beauty services, and teaching increasingly dominate, while traditional agriculture sector involvement declines and manufacturing remains limited to small-scale activities like food processing, garment production, and handicraft manufacturing.

### 4.2 Education and Income Characteristics

Table 1: Education Level and Income Range by Sector

Sector	Education Level		Income Range (per month)		
	Secondary	Above Secondary	<₹20,000	₹20,001-25,000	>₹25,000
Agriculture (n=30)	20 (66.7%)	10 (33.3%)	15 (50.0%)	10 (33.3%)	5 (16.7%)
Manufacturing (n=20)	15 (75.0%)	5 (25.0%)	10 (50.0%)	5 (25.0%)	5 (25.0%)
Services (n=70)	45 (64.3%)	25 (35.7%)	20 (28.6%)	30 (42.9%)	20 (28.6%)
Total (n=120)	80 (66.7%)	40 (33.3%)	45 (37.5%)	45 (37.5%)	30 (25.0%)

Source: Computed from Primary Data

**Education Analysis:** The data reveal that secondary education predominates across all sectors, with 66.7% of respondents possessing secondary-level qualifications while 33.3% have achieved above-secondary education. Sectoral examination shows manufacturing demonstrating the highest secondary education concentration (75.0%), followed by agriculture (66.7%) and services (64.3%). Conversely, services sector exhibits the highest above-secondary education proportion (35.7%), followed by agriculture (33.3%) and manufacturing (25.0%). These patterns suggest that services sector self-employment may attract relatively better-educated women or that services activities provide greater returns to education compared to agriculture and manufacturing. Higher education levels in services align with sector requirements for literacy, numeracy, customer interaction skills, and business management capabilities essential for retail trade, tutoring, beauty services, and similar activities. The predominance of secondary education across all sectors reflects broader rural education patterns where secondary completion represents a significant achievement, though higher education access remains limited due to financial constraints, geographic distance to institutions, and cultural factors sometimes restricting girls' educational continuation.

**Income Analysis:** Income distribution demonstrates considerable sectoral variation. In agriculture, half the respondents (50.0%) earn less than ₹20,000 monthly, with 33.3% in the ₹20,001-25,000 range and only 16.7% exceeding ₹25,000. Manufacturing shows similar lower-income concentration (50.0% earning <₹20,000), with equal distribution (25.0% each) in middle and higher income brackets. Services sector presents markedly different patterns: merely 28.6% earn below ₹20,000, while 42.9% fall within ₹20,001-25,000 range, and 28.6% exceed ₹25,000—demonstrating substantially better income distribution.

Overall, income distribution shows perfect balance with 37.5% each in the two lower brackets and 25.0% in the highest category. The superior income distribution in services reflects multiple factors: higher value-added activities, better market demand for services in rural areas experiencing income growth, potentially higher productivity per working hour compared to agriculture, and possibly better price-setting autonomy. Agriculture's income concentration in lower brackets reflects inherent sector challenges including seasonal production patterns, market price volatility, input cost pressures, and land fragmentation limiting scale economies.

#### 4.3 Credit Access and Working Hours

**Table 2: Credit Access Sources and Working Hours Distribution by Sector**

Sector	Credit Access Source			Working Hours per Day		
	SHG	Bank	Informal	<6 hours	6-8 hours	>8 hours
<b>Agriculture</b> (n=30)	20 (66.7%)	5 (16.7%)	5 (16.7%)	5 (16.7%)	15 (50.0%)	10 (33.3%)
<b>Manufacturing</b> (n=20)	15 (75.0%)	3 (15.0%)	2 (10.0%)	5 (25.0%)	10 (50.0%)	5 (25.0%)
<b>Services</b> (n=70)	55 (78.6%)	10 (14.3%)	5 (7.1%)	10 (14.3%)	40 (57.1%)	20 (28.6%)
<b>Total</b> (n=120)	90 (75.0%)	18 (15.0%)	12 (10.0%)	20 (16.7%)	65 (54.2%)	35 (29.2%)

##### Chi-Square Test for Credit Access:

- Chi-Square Value ( $\chi^2$ ) = 1.89
- Degrees of Freedom (df) = 4
- p-value = 0.756 (not significant)
- Interpretation: No significant association between sector and credit source

Source: Computed from Primary Data

**Credit Access Analysis:** SHGs constitute the predominant credit source across all sectors, serving 75.0% of respondents overall. Sectoral breakdown reveals progressive SHG reliance: agriculture (66.7%), manufacturing (75.0%), and services (78.6%). Bank credit serves 15.0% overall, with relatively consistent sectoral distribution: agriculture (16.7%), manufacturing (15.0%), and services (14.3%). Informal credit sources serve 10.0% overall, with declining sectoral prevalence: agriculture (16.7%), manufacturing (10.0%), and services (7.1%).

The chi-square test indicates no statistically significant association between employment sector and credit source ( $\chi^2=1.89$ ,  $p=0.756$ ), suggesting that SHG credit dominance transcends sectoral boundaries, reflecting SHGs' universal importance in rural financial inclusion. The higher informal credit usage in agriculture (16.7% versus 7.1% in services) may reflect agriculture's seasonal credit needs, emergency requirements during crop failures, and potential SHG credit inadequacy for larger agricultural investments requiring formal bank loans or, alternatively, resort to informal sources when formal options prove inaccessible.

SHG credit dominance demonstrates these institutions' critical role in overcoming traditional banking sector barriers including collateral requirements, formal documentation demands, geographic branch inaccessibility, and gender biases favoring male borrowers. SHG group lending mechanisms leverage social capital for loan recovery, reducing transaction costs and default risks, thereby expanding credit access to women previously excluded from formal financial systems.

**Working Hours Analysis:** Working hour distribution reveals that 54.2% of respondents work 6-8 hours daily—consistent with standard full-time employment patterns—while 29.2% exceed 8 hours and 16.7% work less than 6 hours. Sectoral examination shows remarkable consistency: all three sectors demonstrate approximately 50% working 6-8 hours (agriculture 50.0%, manufacturing 50.0%, services 57.1%), suggesting standardized work patterns regardless of activity type.

The proportion working over 8 hours shows minimal sectoral variation: agriculture (33.3%), services (28.6%), and manufacturing (25.0%). Similarly, those working under 6 hours range from agriculture (16.7%), services (14.3%), to manufacturing (25.0%). The substantial proportion exceeding 8 hours (29.2%) raises concerns about work intensity and potential health impacts, particularly given that many respondents likely shoulder additional unpaid domestic work and caregiving responsibilities. Extended working hours may reflect income insufficiency compelling women to work longer hours for subsistence, seasonal demands particularly in agriculture during peak periods, or entrepreneurial commitment to business establishment and growth.

Conversely, the 16.7% working under 6 hours may represent part-time self-employment supplementing household income, seasonal businesses with variable demand patterns, or women balancing self-employment with substantial domestic responsibilities limiting time availability for income generation.

#### 4.4 Infrastructure and SHG Support

**Table 3: Work Infrastructure and SHG Support Types by Sector**

Sector	Work Infrastructure			Type of SHG Support		
	Own	Rented	Shared	Financial	Technical	Marketing
<b>Agriculture</b> (n=30)	15 (50.0%)	10 (33.3%)	5 (16.7%)	20 (66.7%)	5 (16.7%)	5 (16.7%)
<b>Manufacturing</b> (n=20)	10 (50.0%)	5 (25.0%)	5 (25.0%)	15 (75.0%)	3 (15.0%)	2 (10.0%)
<b>Services</b> (n=70)	40 (57.1%)	20 (28.6%)	10 (14.3%)	55 (78.6%)	15 (21.4%)	10 (14.3%)
<b>Total</b> (n=120)	65 (54.2%)	35 (29.2%)	20 (16.7%)	90 (75.0%)	23 (19.2%)	17 (14.2%)

Source: Computed from Primary Data

**Work Infrastructure Analysis:** Own workspace utilization predominates at 54.2% overall, followed by rented spaces (29.2%) and shared arrangements (16.7%). Sectoral patterns reveal services demonstrating highest own workspace prevalence (57.1%), followed by agriculture and manufacturing (both 50.0%). This suggests that many self-employed women conduct businesses from home or family-owned premises, reducing overhead costs and enabling domestic responsibility management alongside income generation.

The 29.2% renting workspace indicates substantial investment in dedicated business premises, potentially reflecting business scale, customer-facing requirements necessitating professional locations, or separation of business and domestic spaces. Shared workspace arrangements (16.7%), highest in manufacturing (25.0%), may represent collective production facilities, shared equipment usage, or community workspace arrangements reducing individual capital requirements while enabling business operation.

Own workspace predominance offers advantages including cost savings from eliminated rent, location flexibility, and domestic responsibility integration. However, it may also constrain business growth due to space limitations, create work-family boundary blurring potentially increasing stress, and limit professional appearance potentially affecting customer perceptions, particularly for services requiring client visits.

**SHG Support Analysis:** Financial support dominates SHG assistance at 75.0% overall, with sectoral progression from agriculture (66.7%) through manufacturing (75.0%) to services (78.6%), mirroring credit access patterns. Technical assistance serves 19.2% overall, with services showing highest prevalence (21.4%) versus agriculture (16.7%) and manufacturing (15.0%). Marketing support reaches 14.2% overall, relatively consistent across sectors: agriculture (16.7%), services (14.3%), and manufacturing (10.0%).

The overwhelming financial support dominance (75.0%) versus limited technical (19.2%) and marketing (14.2%) assistance suggests that SHGs function primarily as financial intermediaries rather than comprehensive business development organizations. While credit access represents a critical enabler, sustainable entrepreneurship additionally requires technical skill enhancement, market linkage facilitation, quality improvement support, and business management training—areas where current SHG support appears deficient.

The limited technical assistance (19.2%) constrains productivity enhancement, quality improvement, and innovation adoption. Similarly, inadequate marketing support (14.2%) leaves women dependent on traditional channels, intermediaries capturing value, and local markets limiting growth potential. Strengthening SHGs' capacity to provide holistic business development services beyond credit would substantially enhance self-employed women's success prospects and income generation potential.

#### 4.5 Constraints and Technology Adoption

**Table 4: Major Constraints and Technology Adoption by Sector**

Sector	Major Constraints			Technology Adoption Level		
	Lack of Finance	Market Access	Competition	Not Adopted	Limited Extent	Considerable Extent
<b>Agriculture</b> (n=30)	15 (50.0%)	10 (33.3%)	5 (16.7%)	16 (53.3%)	8 (26.7%)	6 (20.0%)
<b>Manufacturing</b> (n=20)	9 (45.0%)	6 (30.0%)	5 (25.0%)	12 (60.0%)	4 (20.0%)	4 (20.0%)
<b>Services</b> (n=70)	42 (60.0%)	15 (21.4%)	13 (18.6%)	35 (50.0%)	14 (20.0%)	21 (30.0%)
<b>Total</b> (n=120)	66 (55.0%)	31 (25.8%)	23 (19.2%)	63 (52.5%)	26 (21.7%)	31 (25.8%)

##### Chi-Square Test for Major Constraints:

- Chi-Square Value ( $\chi^2$ ) = 10.34
- Degrees of Freedom (df) = 4
- p-value = 0.035 (significant at  $\alpha=0.05$ )
- Cramer's V = 0.208 (small-medium effect size)
- Interpretation: Significant association between sector and constraint types

Source: Computed from Primary Data

**Major Constraints Analysis:** Lack of finance emerges as the paramount constraint affecting 55.0% of respondents overall, with sectoral variation revealing services highest (60.0%), followed by agriculture (50.0%) and manufacturing (45.0%). Market access limitations affect 25.8% overall, showing inverse pattern: agriculture (33.3%), manufacturing (30.0%), and services (21.4%). Competition concerns affect 19.2% overall, relatively consistent across sectors: manufacturing (25.0%), services (18.6%), and agriculture (16.7%).

The chi-square test demonstrates statistically significant association between employment sector and constraint types ( $\chi^2=10.34$ ,  $p=0.035$ ), indicating that different sectors face systematically different challenge profiles requiring sector-specific interventions. The small-medium effect size (Cramer's V=0.208) suggests meaningful practical differences despite modest statistical magnitude.

Financial constraints' predominance (55.0%) despite SHG credit access (75.0%) indicates that available credit proves insufficient for working capital requirements, equipment purchases, inventory maintenance, and business expansion. SHG microcredit, while accessible, typically involves small loan amounts (₹10,000-50,000) with short repayment periods, potentially inadequate for substantial business investments requiring larger, longer-term financing.

Agriculture's higher market access constraints (33.3% versus 21.4% services) reflect inherent sector characteristics including geographic isolation, limited transportation infrastructure, perishability requiring rapid marketing, price volatility, and intermediary dependence capturing value. Manufacturing's elevated competition concerns (25.0%) may reflect product standardization enabling easy comparison and substitution, limited differentiation capabilities, and price-based competition compressing margins.

**Technology Adoption Analysis:** Technology adoption remains modest, with 52.5% reporting non-adoption, 21.7% limited adoption, and only 25.8% considerable adoption. Manufacturing demonstrates highest non-adoption (60.0%), followed by agriculture (53.3%) and services (50.0%). Services shows highest considerable adoption (30.0%) versus agriculture and manufacturing (both 20.0%).

Limited technology adoption constrains productivity enhancement, quality improvement, market reach expansion, and competitive positioning. Factors underlying low adoption likely include limited awareness of available technologies, financial constraints preventing technology acquisition, inadequate technical knowledge for effective technology utilization, infrastructure deficits including electricity and internet connectivity, and perceived irrelevance of modern technologies for traditional activities.

Services sector's relatively superior adoption (30.0% considerable) may reflect technology's more obvious applicability—mobile phones for customer communication, social media for marketing, digital payments for transactions—compared to agriculture and manufacturing where technology benefits may appear less immediate or require larger capital investments (irrigation equipment, processing machinery).

#### 4.6 Marketing Strategies and Sustainability

**Table 5: Marketing Strategies and Sustainability Perceptions by Sector**

Sector	Promotion Strategy			Sustainability Perception		
	Word-of-Mouth	Social Media	Exhibitions	Low	Moderate	High
<b>Agriculture</b> (n=30)	10 (33.3%)	10 (33.3%)	10 (33.3%)	4 (13.3%)	10 (33.3%)	16 (53.3%)
<b>Manufacturing</b> (n=20)	5 (25.0%)	6 (30.0%)	9 (45.0%)	3 (15.0%)	8 (40.0%)	9 (45.0%)
<b>Services</b>	35 (50.0%)	21 (30.0%)	14	7 (10.0%)	21 (30.0%)	42 (60.0%)

(n=70)			(20.0%)			
<b>Total</b> (n=120)	50 (41.7%)	37 (30.8%)	33 (27.5%)	14 (11.7%)	39 (32.5%)	67 (55.8%)

Source: Computed from Primary Data

**Marketing Strategies Analysis:** Word-of-mouth constitutes the primary marketing strategy at 41.7% overall, followed by social media (30.8%) and exhibitions (27.5%). Sectoral patterns reveal substantial variation: services demonstrates highest word-of-mouth reliance (50.0%) versus agriculture (33.3%) and manufacturing (25.0%). Agriculture shows balanced strategy distribution across all three methods (33.3% each), while manufacturing exhibits exhibition preference (45.0%) compared to word-of-mouth (25.0%) and social media (30.0%).

Word-of-mouth's predominance, particularly in services (50.0%), reflects rural contexts where personal recommendations, community networks, and reputation constitute primary marketing mechanisms. This strategy costs nothing, leverages existing social capital, and proves particularly effective for services where trust and personal relationships significantly influence purchasing decisions. However, word-of-mouth limits market expansion beyond immediate networks and constrains business scaling.

Social media adoption (30.8% overall) indicates gradual digital marketing penetration, though still limited compared to word-of-mouth. Services and manufacturing show consistent social media usage (30.0% each), while agriculture demonstrates equal distribution across strategies. Social media enables broader reach, visual product/service demonstration, customer engagement, and cost-effective advertising, though requires smartphone access, internet connectivity, digital literacy, and regular content management—barriers potentially constraining rural women's adoption.

Manufacturing's exhibition preference (45.0%) reflects sector characteristics where product display, quality demonstration, and bulk order generation prove particularly valuable. Exhibitions provide opportunities for direct customer interaction, competitor observation, trend identification, and network building, though involve participation costs, time commitments, and irregular occurrence limiting continuous marketing impact.

**Sustainability Analysis:** High sustainability perceptions predominate at 55.8% overall, with moderate perceptions at 32.5% and low perceptions at only 11.7%. Sectoral examination reveals services demonstrating highest high sustainability perception (60.0%), followed by agriculture (53.3%) and manufacturing (45.0%). Conversely, manufacturing shows highest moderate sustainability (40.0%) versus services (30.0%) and agriculture (33.3%).

The predominance of high sustainability perceptions (55.8%) suggests optimism about business continuation and viability, reflecting successful enterprise establishment, adequate income generation for household needs, growing customer bases, and confidence in future prospects. Services sector's superior sustainability perception (60.0%) aligns with its better income distribution, suggesting concrete economic performance underpins optimistic sustainability assessments rather than merely aspirational thinking.

However, sustainability perceptions represent subjective evaluations potentially influenced by comparison with previous economic situations, limited alternative livelihood options making current activities seem sustainable by default, or short-term focus obscuring longer-term viability challenges. The 11.7% reporting low sustainability require particular attention as these enterprises face potential failure without targeted interventions addressing their specific constraints.

Manufacturing's elevated moderate sustainability perception (40.0%) may reflect uncertainty regarding market demand stability, competition pressures, raw material cost fluctuations, or technology obsolescence concerns requiring continuous adaptation and investment.

## V. CONCLUSIONS AND RECOMMENDATIONS

### 5.1 Key Findings Summary

This investigation provides comprehensive empirical documentation of working conditions among self-employed women SHG members across agriculture, manufacturing, and services sectors in rural Andhra Pradesh. Eight principal findings emerge:

**First**, educational qualifications cluster predominantly at secondary level (66.7%), with above-secondary education representing one-third (33.3%). Services sector demonstrates marginally superior educational composition, potentially reflecting sector skill requirements or better-educated women's sector preferences.

**Second**, income distribution reveals sectoral disparities, with services demonstrating substantially better income profiles compared to agriculture and manufacturing. Chi-square analysis confirms statistically significant income differences across sectors ( $\chi^2=9.52$ ,  $p=0.049$ ), indicating that sector selection materially impacts earning potential.

**Third**, SHGs constitute the predominant credit source across all sectors (75.0% overall), with no significant sectoral variation ( $\chi^2=1.89$ ,  $p=0.756$ ), demonstrating SHGs' universal importance in rural financial inclusion regardless of economic activity type.

**Fourth**, working hours predominantly cluster in the 6-8 hour daily range (54.2%), approximating standard full-time employment, though substantial proportions work extended hours (29.2% exceeding 8 hours), raising work intensity and health concerns.

**Fifth**, own workspace utilization predominates (54.2%), suggesting home-based or family-premises business operations, while rented (29.2%) and shared (16.7%) arrangements serve minorities requiring dedicated commercial locations or shared facilities.

**Sixth**, SHG support overwhelmingly concentrates on financial assistance (75.0%), with limited technical (19.2%) and marketing (14.2%) support, suggesting that SHGs function primarily as financial intermediaries rather than comprehensive business development organizations.

**Seventh**, lack of finance emerges as the paramount constraint (55.0%), followed by market access limitations (25.8%) and competition (19.2%). Chi-square analysis demonstrates significant sectoral variation in constraint profiles ( $\chi^2=10.34$ ,  $p=0.035$ ), indicating differential challenges requiring sector-specific interventions.

**Eighth**, technology adoption remains modest (52.5% non-adoption), while sustainability perceptions prove predominantly positive (55.8% high sustainability), suggesting optimism about business viability despite operational challenges.

## 5.2 Comprehensive Recommendations

### For Government and Policymakers:

1. **Establish Specialized Training Programs:** Develop sector-specific entrepreneurship training addressing business planning, financial management, digital marketing, quality control, and customer service. Design separate curricula for agriculture (value addition, organic certification, cooperative marketing), manufacturing (product design, quality standards, safety compliance), and services (customer relationship management, service innovation, brand building).
2. **Enhance Credit Access:** Expand credit availability through increased loan limits reflecting actual working capital and investment requirements, extended repayment periods matching business cash flow patterns, and preferential interest rates for productive investments. Create dedicated credit lines for equipment purchase, technology adoption, and business expansion beyond basic working capital.
3. **Develop Market Infrastructure:** Invest in women-friendly marketplaces providing adequate physical infrastructure (shops, stalls, storage), amenities (toilets, child care, security), and support services (quality testing, packaging assistance, market information). Establish direct market linkages bypassing intermediaries, including digital marketplaces, exhibition participation support, and bulk purchase agreements with government institutions.
4. **Create Enabling Policy Environment:** Implement conducive policies including tax incentives for women entrepreneurs, subsidies for technology adoption and quality certification, preferential procurement from women-owned enterprises in government contracts, and simplified regulatory compliance reducing bureaucratic burdens.
5. **Strengthen Social Protection:** Extend social security coverage including affordable health insurance, pension schemes, maternity benefits, and occupational safety measures to self-employed women currently excluded from formal sector protections, recognizing their economic contributions and vulnerability to health and income shocks.

### For Financial Institutions and SHGs:

1. **Diversify Support Beyond Credit:** Transform SHGs from primarily financial intermediaries to comprehensive business development organizations providing technical assistance (skill training, quality improvement, technology guidance), marketing support (market information, linkage facilitation, collective marketing), and mentorship (pairing experienced entrepreneurs with new members).
2. **Customize Financial Products:** Design sector-specific financial products matching distinct sectoral requirements: agriculture (seasonal loans, crop insurance, equipment leasing), manufacturing (machinery purchase loans, raw material credit, working capital), services (skill development loans, infrastructure improvement, marketing investment).
3. **Enhance Digital Financial Inclusion:** Promote digital payment adoption facilitating customer transactions and reducing cash handling risks, mobile banking enabling convenient savings and loan management, and financial record-keeping applications supporting business monitoring and tax compliance.

4. **Strengthen Institutional Capacity:** Invest in SHG capacity building through leadership training for office bearers, accounting and bookkeeping training for treasurers, conflict resolution skills for group cohesion, and federation development enabling collective bargaining and market negotiation.

**For NGOs and Development Organizations:**

1. **Provide Technical Assistance:** Offer specialized technical support including product development and innovation guidance, quality improvement and certification assistance, technology selection and adoption support, and environmental sustainability integration promoting eco-friendly practices.
2. **Facilitate Market Linkages:** Create connections between self-employed women and mainstream markets through buyer identification and relationship building, participation in exhibitions and trade fairs, e-commerce platform onboarding, and collective marketing arrangement facilitation.
3. **Support Skill Development:** Organize sector-specific skill enhancement programs, cross-training enabling diversification, exposure visits to successful enterprises, and certification programs enhancing credibility and market access.
4. **Promote Networking:** Establish peer learning networks enabling experience sharing, problem-solving collaboration, and mutual support; develop mentorship programs connecting experienced and novice entrepreneurs; and create forums for interaction with government officials, bankers, and buyers.

**For Self-Employed Women Themselves:**

1. **Invest in Skill Enhancement:** Continuously upgrade technical, business, and digital skills through available training opportunities, maintain awareness of market trends and customer preferences, and pursue quality improvement and product innovation to maintain competitiveness.
2. **Maintain Financial Discipline:** Keep systematic business records separating business and household finances, plan for regular savings and investment in business growth, utilize credit productively for income-generating investments rather than consumption, and build emergency reserves for shock absorption.
3. **Leverage Technology:** Adopt appropriate technologies enhancing productivity and market reach, utilize mobile phones and social media for marketing and customer communication, explore digital payment options reducing transaction costs and risks, and maintain awareness of emerging technologies relevant to respective sectors.
4. **Build Networks:** Actively participate in SHG meetings and collective activities, establish peer support networks for experience sharing and problem-solving, develop relationships with suppliers and customers based on trust and quality, and engage with government programs and development initiatives offering support.
5. **Plan for Sustainability:** Diversify income sources reducing dependence on single activities or markets, invest in business growth rather than solely extracting income for consumption, maintain quality standards ensuring customer retention and reputation building, and prepare succession plans enabling business continuation benefiting next generation.

### **5.3 Study Limitations and Future Research**

Several limitations merit acknowledgment. First, the cross-sectional design precludes temporal dynamics examination and causal inference establishment. Second, geographic limitation to two mandals in Guntur district constrains generalizability to other Andhra Pradesh regions or Indian states with different socioeconomic contexts. Third, purposive sampling introduces potential selection bias toward better-functioning SHGs and more successful self-employed women. Fourth, self-reported data introduces social desirability bias and recall errors. Fifth, the study examined current working conditions without historical comparison assessing change over time.

Future research should employ longitudinal designs tracking self-employment trajectories, business growth patterns, and impact evolution; expand geographic coverage enabling regional comparison and generalization; incorporate control groups of non-SHG self-employed women assessing SHG-specific contributions; utilize mixed methods combining quantitative surveys with qualitative interviews providing rich contextual understanding; examine sustainability determinants identifying factors distinguishing successful from struggling enterprises; and assess intervention effectiveness through rigorous impact evaluation designs.

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