



From Worms to Wealth: How Women Entrepreneurs are Transforming Socioeconomic Status through Vermicompost in Raipur District of Chhattisgarh

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ABSTRACT: Vermicompost presents itself as a highly effective solution for organic fertilizers used as soil additions. Female entrepreneurship emerges as a key component in the development of any economy. Novel enterprises help to create a thriving business environment by boosting economic growth, creating new job opportunities, and enhancing manufacturing processes and products. Although the share of women-owned and operated enterprises in India has consistently increased over the years, their overall representation remains extremely low. A previously tested questionnaire was used to obtain responses from these women regarding a variety of independent and dependent variables. The information collected was later categorized, correlated, and analyzed using averages and percentages as needed.

Keywords: women, Socioeconomics, entrepreneurs, vermicompost, correlation, regression.

INTRODUCTION

Vermicomposting is a simple procedure that converts partially decomposed organic waste into organic compost by using earthworms. The increasing popularity of organic farming, as well as the growing problem of organic waste management, can be effectively addressed by using Vermicomposting (Aski and Hirevenkanagoudar 2014). Among the numerous organic manures, vermicompost is the best choice for soil amendment. Despite its potential to increase farm income, there has been a paucity of detailed research and analysis on vermicompost production, processing, and commercialization. Vermicomposting is a biotechnological process that involves the composting of various types of organic waste using specific species of earthworms, resulting in the production of a valuable end product known as vermicompost. Like traditional composting, this technique involves bio-oxidative reactions and the stability of organic waste. However, in vermicomposting, the interactions between earthworms and microbes are critical (Bansal & Joshi 2019).

Microorganisms create enzymes that aid in the biochemical breakdown of organic materials, whereas earthworms contribute to a larger microbial population by fragmenting and ingesting fresh organic material. Furthermore, earthworms interact with other soil creatures, which may have an impact on micro flora and micro fauna communities (Devkota *et al.*, 2014). Despite certain similarities, vermicomposting and composting differ significantly, as described

extensively in several reviews. These variations include the lack of a thermophilic phase in vermicomposting, which is crucial for pathogen elimination. Furthermore, vermicomposting demands higher moisture content than regular composting, and it has a greater favorable impact on soil physicochemical characteristics and plant growth in terms of end-product quality (A. K. Gauraha & Shiv Kumar Bhaskar 2021). The conversion of industrial waste into vermicompost is critical for pollution monitoring and control since vermicompost has promise for remediation and waste reduction. Furthermore, vermicompost benefits plants by stimulating growth and productivity (Gopalsundar, 2020). As a result, it is important not only in agriculture and horticulture, but also in regards to sustainable development.

Women entrepreneurs play an important role in generating economic progress in any economy. The growth of new businesses helps to create a dynamic business environment, which leads to economic growth, employment creation, and innovation in manufacturing methods and products (Kalita *et al.*, 2017). Women entrepreneurs currently account for around 10% of all entrepreneurs in India, a figure that is rapidly increasing year after year (Kumar Sannigrahi, 2016). If current trends continue, women will likely make up 20% of the entrepreneurial force within the next five years. With corporations ready to partner with women-owned enterprises and a profusion of banks and non-governmental organizations committed to their support, there has never been a better time for ambitious and creative women to start their own businesses

(Madhumitha *et al.*, 2020). Women's participation in productive activities in India has increased over time; however the aggregate number of businesses owned by women remains relatively low.

Researchers have expanded on the idea that economists have turned their focus away from the pace of capital formation and toward the expansion of highly trained individuals, notably entrepreneurs, as the key drivers of economic growth (Moledor *et al.*, 2016). There is a frequent belief that women are incapable of being good managers. In truth, women have various strong attributes that are desirable and relevant to the growth of entrepreneurship. These qualities include their aptitude for managing business activities, their dedication to their work, their ability to tolerate and show kindness towards others (Parmar & David 2014). In fact, the epitome of a complete manager in our society is the mother, as she plans budgets, executes tasks, and demonstrates tangible results in her day-to-day life. This demonstrates that women are just as competent as men in managing their own enterprises (Prakash *et al.*, 2021).

Prospective and active women entrepreneurs in India have enormous potential and may significantly contribute to the country's economic growth. However, they confront some limitations, such as the requirement for entrepreneurial training and financial assistance. Furthermore, women entrepreneurs are expanding beyond traditional disciplines such as crafting, knitting, and tailoring to include computers, engineering, and electronics (Raja *et al.*, 2020). These women have demonstrated courage, determination, vision, and perseverance in their business ventures. Furthermore, the decisions and objectives of their family members have a significant impact on the businesses founded by women (Sahu *et al.*, 2012). Women's participation in business management is critical to the overall development of female entrepreneurs and their enterprises. As a result, it is critical to assess the extent to which women are involved in the management of their businesses in order to develop suitable actions. As a result, the current study seeks to investigate the socioeconomic backgrounds of women in Raipur

District Self Help Groups, as well as other characteristics of the microenterprises founded by these women (Sahu *et al.*, 2012). The current investigation focused on a group of agriculturalists who had completed this instructional program and are now using this strategy. Given the aforementioned reasons, the current inquiry was carried out with the support of the following precise objectives: to determine the socioeconomic features, entrepreneurial tendencies, and utilization of suggested production technologies among the chosen members of the Financial Inclusion Group.

MATERIALS AND METHODS

The study was carried out in Chhattisgarh's Raipur district, which is located between latitude 21° 25' and 81° 62' longitude and stands at a height of 298.15 meters above sea level. Raipur has four blocks: Arang, Tilda, Dharsiwa, and Abhanpur. The topic was chosen because Krishi Vigyan Kendra Raipur delivers more vermicompost technology training and demonstrations than any other production. Over 200 women in this district organize self-help groups to generate vermicompost for revenue (Sankaratti & Hanchinal 2017). The current study focused on 12 FIG self-help groups made up of 200 women. A pre-tested questionnaire was used to collect information from the women on their family structure, size, literacy level, livelihood status, occupation, land ownership status, and livestock (Sankaratti & Hanchinal, 2018). The data was tabulated, classified, and assessed using averages and percentages as needed. Before testing for significance, the percentage data was transformed using the arcsine or square root.

RESULTS AND DISCUSSION

Data presented in Table 1 revealed that out of total vermicompost respondents, 18.65 percent respondents belonged to the young age group, 47.76 percent belonged to the middle age group, and 33.58 percent to the old age. Thus, it is evident that a higher percentage (47.76%) of respondents belonged to the middle age group (Singh, 2020).

Table 1: Socio economic attributes of respondents.

Sr. No.	Age group	No. of respondents	Percentage %
1	Young (Up to 25 years)	25	18.65
2.	Middle (26 to 35 years)	64	47.76
3.	Old (Above 35 years)	45	33.58
	Total	134	100

Table 2: Distribution of vermicompost respondents according to their Education Level.

Sr. No.	Education Level	No. of Respondents	Percentage %
1.	Illiterate	20	14.92
2.	Those Can read and write	47	35.07
3.	Primary	22	16.41
4.	Middle	35	26.11
5.	High School, Intermediate and graduate, and above	10	7.46
	Total	134	100

Table 2 revealed that out of the total respondents, the Illiterate percentage was 14.92, higher percentage of education, i.e., 32.08 percent can read and write, whereas 16.41 percent were primary educated, 26.11 percent were middle school educated, and 7.46 percent were high school and above. Thus, it can be concluded that a higher percentage (35.07%) of vermicompost respondents were able to read and write (Swetha *et al.*, 2020).

According to Table 3, 8.20 percent of respondents generated their income through agriculture, and 14.92 percent depended on animal husbandry, 31.34 percent had just labor, and 24.62 percent used horticulture as their livelihood, 11.94 percent relied on business, and 8.95 percent depended on others. Consequently, it may be claimed that more Vermicompost respondents (31.34%) are mainly dependent on hard working labor (Thiripurasundari, 2014).

Table 3: Distribution of vermicompost respondents according to their Source of Income.

Sr. No.	Activities/Occupation	No. of Respondents	Percentage %
1.	Agriculture	11	8.20
2.	Animal Husbandry	20	14.92
3.	Labor	42	31.34
4.	Horticulture	33	24.62
5.	Business	16	11.94
6.	Others	12	8.95
	Total	134	100

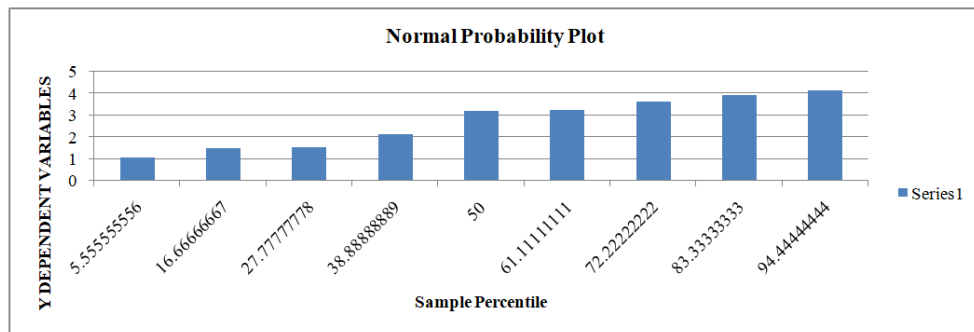


Fig. 1. Normal Probability Plot of Regression Analysis of Arang Vermicompost FIG.

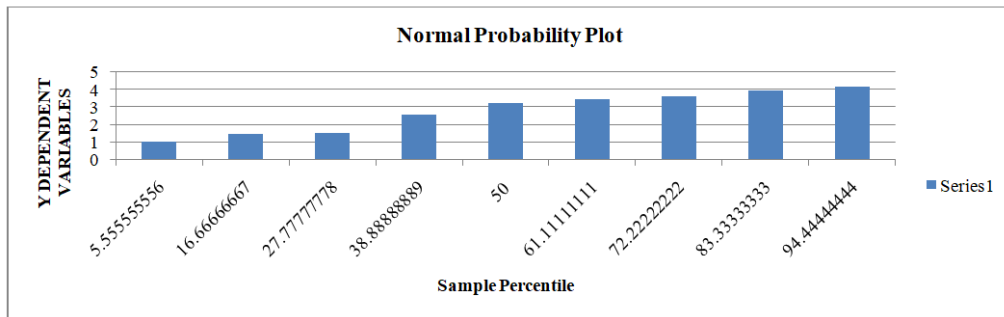


Fig. 2. Normal Probability Plot of Regression Analysis of Tilda Vermicompost FIG.

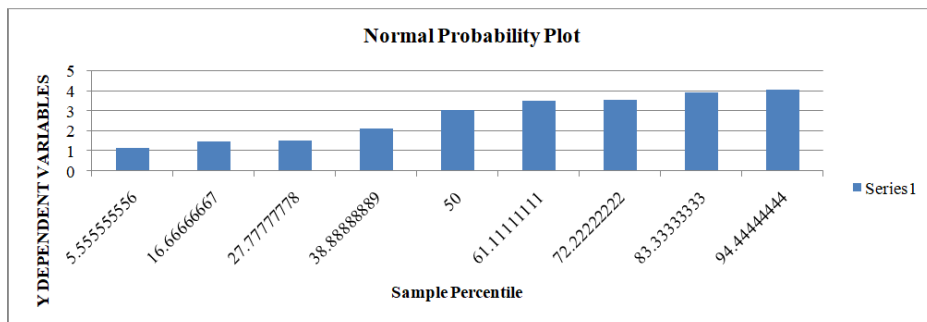


Fig. 3. Normal Probability Plot of Regression Analysis of Dharsiwa Vermicompost FIG.

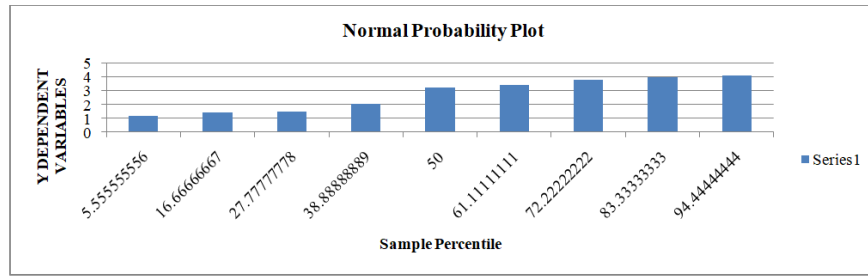


Fig. 4. Normal Probability Plot of Regression Analysis of Abhanpur Vermicompost FIG.

Table 4: Distribution of vermicompost respondents according to their Economic Motivation.

Sr. No.	Statement	SA 5		Agree 4		Undecided 3		Disagree 2		Strongly Disagree 1		Total
		Frequency	% age	Frequency	% age	Frequency	% age	Frequency	% age	Frequency	% age	
1.	Some people aim for greater rewards and economic benefits.	04	13.79	05	17.24	08	27.58	12	41.37	0	0	29
2.	Destiny lies with those who dares	04	15.38	04	15.38	08	30.76	10	38.46	0	0	26
3.	Any new farming methods that could increase one's income should be tried out.	05	16.66	04	13.33	09	30.00	12	40.00	0	0	30
4.	The use of ATMA services is preferable to alternatives if one wants to maximize earning potential.	03	11.11	03	11.11	09	33.33	12	44.44	0	0	27
5.	The farmer's children work hard to start well in the absence of financial support.	06	27.27	03	13.63	07	31.81	06	27.27	0	0	22
	Total ↓											134
	Total →	22	16.41	19	14.50	41	30.59	52	38.80	0	0	134

According to Table 4, 22 respondents strongly agreed with statement 1 to 5, 19 respondents agreed with statement 1 to 5, 41 respondents were undecided mindset for statement 1 to 5, 52 respondents disagreed with all statements, and none strongly disagreed with any statement (Vaidya *et al.*, 2014).

CONCLUSIONS

A correlation analysis was performed on the Arang block, yielding a result of 0.83873. Similarly, a

correlation investigation on the Tilda block produced a result of 0.93518 (Ma *et al.*, 2020). The correlation values (Shekhar & Biswas, 2018) for the Dharsiwa block were 0.97748, while the Abhanpur block correlated of 0.57369 (Shekhar *et al.*, 2022). The socioeconomic characteristics of the Tilda and Dharsiwa blocks were greatly influenced by vermicompost production, as opposed to the Arang and Abhanpur blocks, where residents did not rely on it as a key source of income (Vuković *et al.*, 2021). Vermicompost production became the principal source

of income in the Tilda and Dharsiwa blocks, while the Arang and Abhanpur blocks relied on other sources. In their final matrix, all four blocks showed a similar connection. All four blocks were also subjected to regression analysis, which revealed that education, economic incentive, cosmopolitanism, and fatalism all contributed significantly to the rise of livelihood in vermicompost generation at the 5% level. When the other studied parameters were examined at the 5% level of significance, they showed less significance.

FUTURE SCOPE

Vermicompost, or warm compost, has a lot of promise as a profitable enterprise. A lot of surveys still need to be conducted in other sections of the state. Government policies must be adjusted further to ensure simple access to financial resources and cutting-edge technology. It not only creates jobs, but it also reduces the dependency of women on men.

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Conflict of Interest. None.

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