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A Study on the Effective Utilization of Communication Methods to Upliftment of Rural Women Farmers in Odisha

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KEYWORDS

Rural women farmers, Digital platforms, Agricultural productivity, Socioeconomic. Community-Based Marketing.

ABSTRACT

This study examines the effective application of communication strategies by women farmers in rural areas of Odisha, India. This research seeks to discover the most effective communication channels and tactics rural women farmers utilise to enhance agricultural productivity and socio-economic development by recognising the vital function of communication in this context. Data was acquired from a varied group of rural women farmers in Odisha using a mixed-methods approach that included surveys, interviews, and focus group discussions conducted across multiple districts. The results indicate a predilection for conventional modes of communication, such as community meetings, capacity-building, training and television programs, while simultaneously emphasising an increasing fascination for digital channels, such as mobile devices and social networking sites. The study highlights the significance of customising communication strategies to suit rural women farmers' specific requirements and circumstances. It suggests that combining traditional and modern methods, known as a hybrid model, may yield the best results. The research provides significant insights for policymakers, development practitioners, and agricultural extension agencies seeking to enhance the communication and assistance provided to rural women farmers in Odisha.

1. INTRODUCTION

Agriculture constitutes the foundation of India's rural economy, with women assuming a crucial role in this sector, especially in regions such as Odisha, where a substantial segment of the population relies on agriculture for their sustenance. Women farmers in rural Odisha significantly participate in agricultural activities, encompassing seeding, harvesting, postharvest processing, and sale of produce. However, their potential is inadequately harnessed owing to numerous socio-economic and infrastructural obstacles. The efficient use of communication tools can serve as a revolutionary instrument to close this gap. Communication beyond mere information dissemination is a vital facilitator of empowerment, capacity development, and access to opportunities. Through the utilization of innovative and focused communication tactics, rural women farmers in Odisha can acquire essential information regarding agricultural practices, market trends, government initiatives, and financial services.

This study seeks to examine the impact of communication methods traditional, digital, and interpersonal on the empowerment of rural women farmers in Odisha. It underscores the importance of culturally sensitive and localized strategies to guarantee inclusivity and effectiveness. Additionally, the amalgamation of contemporary instruments, including mobile technology and social media, with conventional approaches such as village meetings and community radio, will be examined for their capacity to tackle the distinct issues encountered by women farmers in the region. Ultimately, effective communication tactics can empower rural women farmers by augmenting their knowledge, refining their decision-making abilities, and equipping them with the resources to actively engage in the economic and social advancement of their communities. This study concentrates on recognizing and executing communication strategies that promote sustainable development and gender

equality in Odisha's agriculture industry.

Effective communication is crucial in the agricultural sector, especially for rural women farmers who are essential for maintaining food security and sustaining households (FAO 2011). Rural women farmers in Odisha, an eastern state of India, comprise a substantial proportion of the agricultural labour force, around 61.80% (IWWAGE, 2020). According to Prashant & Vijaykumar (2024), Notwithstanding their pivotal role, these women frequently face obstacles that hinder their access to essential agricultural knowledge and resources. Farmers need various information to support their livelihoods, and agricultural progress depends on the ability to create, share, and use knowledge. Farmers require four essential components: information needs, availability, accessibility, and applicability (Haworth & Biggs et al. (2018). These factors need to be analysed, especially for women farmers.

According to Suchismita & Mishra (2020), there are 16 barriers to information sharing in the agricultural sectors of Odisha, India, including poor communication infrastructure, inadequate information infrastructure, illiteracy, high costs, difficulties with language, a lack of agricultural extension workers, behaviours and practices related to gender, distance to the information centre, domestic duties and cultural restraints of women, a lack of agricultural libraries nearby farmers, ignorance of information, and lack of agricultural libraries. The study focuses on the Best Work Method (BWM) ranking to rank the region's most significant barriers to information.

Efficient communication techniques are crucial for spreading agricultural knowledge, enhancing farming methods, and promoting socio-economic progress. Conventional modes of communication, including face-to-face interaction, community gatherings, and radio broadcasts, have always played a crucial role in spreading information in rural regions of Odisha. These strategies are well ingrained in the socio-cultural structure of rural communities and have demonstrated their effectiveness in specific situations. According to Sulaiman & Van Den Ban (2000), radio programs specifically designed to meet the needs of farmers have played a crucial role in delivering timely and pertinent agricultural information. But Mittal & Mehar (2016), described in their research that the emergence of digital technology brings fresh prospects and obstacles. Mobile phones, social media, and other digital platforms can reach a wider audience, deliver immediate updates, and promote stronger connectivity among farmers. Whereas Kameswari & Gupta (2011), explained that there are benefits, the digital divide remains a major obstacle, especially for women in isolated and disadvantaged communities who may not have the required expertise, infrastructure, and financial means to exploit these technologies effectively.

This study investigates the effective application of conventional and contemporary communication techniques by rural women farmers of Odisha. This research aims to understand how communication can be adjusted to assist rural women farmers' agricultural practices and socio-economic empowerment by analysing their needs, preferences, obstacles, and the implications of different communication channels.

An integrated research methodology, utilising surveys, interviews, and focus group discussions, has collected valuable perspectives from a varied cohort of women farmers across various districts in Odisha. The results provide valuable insights for policymakers, development practitioners, and agricultural extension services regarding the most efficient methods for distributing information and providing assistance. This will ultimately enhance the quality of life and ability to withstand challenges for rural women farmers of Odisha.

2. LITERATURE REVIEW

Communication is fundamental to rural development, especially in agricultural settings where the distribution of information and knowledge exchange can greatly enhance productivity and socio-economic circumstances. In the context of rural women farmers in Odisha, effective communication strategies can connect limited resources with possible opportunities. This literature review analyzes research and theories concerning communication strategies for rural development, with a specific emphasis on their relevance to women farmers in Odisha. According to Singh and Kumari et al. (2020), in India, women serve as the foundation of the community and a crucial component of the rural and agricultural economies. They pursue many means of subsistence and contribute significantly to household, allied, and agricultural growth. These activities include growing crops, caring for family members, caring for animals, cooking, working in rural businesses, engaging in commerce, and maintaining homes.

Sucharita & Bishnoi (2016), explained a study carried out in the Nayagarh area of Odisha, India, found that the decision-making ability of women farmers is influenced by several variables, including age, education level, land ownership, agricultural experience, family size and type, as well as social participation. Dey et al. (2020), described that India's rural population comprises marginal and landless farmers, a low-cost, high-profit strategy is required to improve their income and socioeconomic status. Women in rural areas are the most productive economic workers, necessitating efforts to strengthen and improve their socioeconomic status.

According to Behera & Behera (2013), The women's enormous involvement in agriculture, during the era can be referred to as the “Feminization of Agriculture & Female Face of Farming” because women perform the majority of farming operations, around 80%. Therefore, an excellent rationale exists for developing women farmers through effective communication tools and strategies. Uzuegbu (2016), providing robust information services to rural communities through the appropriate channels

and choices is critical. Mass media, information service systems, education, training programs, change agents, personal interactions, and other channels have all been identified as important avenues through which rural information transmission is generally grounded.

According to Nayak (2022), a study on how the media affects agricultural development in the Odisha district of Nabarangpur, mass media like newspapers, magazines, radio, TV, film, and the internet must play a significant role in educating farmers about new information and technologies. The choice of communication media is crucial in a nation like India with a low literacy rate.

The capacity of farmers, both men and women, to access information via mobile phones helps reduce the knowledge gap between them and has the potential to enhance output, according to a study Mittal (2016), carried out in the Indian states of Haryana and Bihar. The study also documents the perception of types of information needed by men and women. It also suggests that if women are receptive to the information they receive, access to information via a mobile phone can empower them. But, for this technology to reach its full potential, it will be necessary to increase capacity for all stakeholders, especially small farmers, and significantly improve the infrastructure that supports it.

If women have equal access to basic resources and services, such as credit, land, and training, as well as representation in decision-making, their contribution to agriculture and its output could be substantially higher, according to research conducted on the importance of aspirations of farming communities by Nandi & Nedumaran (2021). Well-organized communication is essential for spreading agricultural knowledge and practices among rural women farmers, who substantially impact food production and household sustenance in Odisha. This literature review studies the many communication strategies employed by rural women farmers, analyzing their efficacy and influence on agricultural output and socio-economic advancement. The examination encompasses conventional modes of communication and digital platforms and the difficulties linked to their implementation.

2.2 Traditional Communication Methods

Throughout Indian rural areas folk media combined with community gatherings and local festival events correctly transmitted valuable information. The work of Melkote and Steeves (2001), illustrates how folk media channels with storytelling help rural areas receive education about health topics alongside agricultural learning and social awareness information. Pradhan & Rao (2018), described the women in self-help groups of Odisha operating as personal communication channels to spread agricultural knowledge across local areas. Traditional information distribution systems encounter problems when expanding their reach while maintaining operational effectiveness in sparsely populated regions.

2.3 Conventional Modes of Communication

In rural regions of Odisha, traditional communication methods such as direct communication, community gatherings, and local radio broadcasts have historically been the primary means of disseminating information. These strategies are intricately integrated into the socio-cultural environment and are customized to meet the specific demands and literacy levels of rural women farmers. Information is communicated among rural people and communities through various channels, including town criers, markets, neighbourhood gatherings, traditional festivals, role-playing, theatre, music, and dance, as well as television, radio, newspapers, demonstrations, lectures, and exhibitions. However, for the message to be understood effectively using indigenous languages, the information must be communicated through traditional and new information dissemination methods by Omogor (2013).

According to Sulaiman & Van Den Ban (2000), the medium of radio has proven to be highly efficient in reaching a broad spectrum of individuals, including those with minimal literacy abilities. Research has indicated that agricultural radio programs have the potential to deliver up-to-date and pertinent information that can have a substantial influence on farming methods. Community meetings and interpersonal communication are crucial for facilitating the exchange of knowledge among farmers. Mittal & Mehar (2016), described these platforms to enable dynamic conversations and provide quick responses, contributing to effective knowledge sharing. The results of a study by Patro & Yadav, et al. (2018), conducted in the Brahmapur, Ganjam district of Odisha suggest that to access agricultural information, the economic circumstances influence the engagement of women farmers in training programs. Those facing financial hardships participate less actively. Interestingly, despite their limited economic resources, they do have consistent access to newspapers, radio and television programs compared to other forms of mass media. Similarly, when it comes to extension services, their interactions are primarily with progressive farmers, local Panchayat officials, and Village Agriculture Workers (VAW), indicating a focused and specific pattern of engagement.

2.4 Digital Platforms

The introduction of digital technology has created new possibilities for improving communication among women farmers in rural areas. Mobile phones, social media, and other digital platforms can deliver immediate updates, promote stronger connections, and reach a wider audience. According to Aker (2011), Mobile phones have emerged as a crucial instrument for agricultural extension services, providing access to market prices, weather forecasts, and optimal methods. Research has demonstrated that utilizing mobile-based advisory services can enhance agricultural output and increase incomes. Women

farmers can utilize social media platforms and digital tools to engage in knowledge exchange and community building. Notwithstanding these benefits, the digital divide continues to be a

substantial obstacle. A significant number of women living in rural areas of Odisha lack the essential skills in using digital technology, as well as the requisite infrastructure and financial means to exploit these technologies effectively. To provide fair and equal advantages, it is crucial to tackle the obstacles associated with accessing and utilizing digital platforms.

Bihani et al., (2017), described social media and app services should be made available on smartphones to provide agriculture extension services. India's rural and urban populations report using WhatsApp at a relatively high rate, and the same can be effectively used by providing services like agriculture extension. According to a study of Biswal (2020), undertaken in the Koraput district in Odisha, ICT is essential for empowering tribal farmers, particularly women farmers, to ensure food security. The outcome demonstrates that efforts to use ICT to promote agricultural and food security involve ecosystems, species, and genetics at three different levels. ICT has been extensively used to support Indigenous knowledge, community involvement in agriculture, and food security for tribal groups.

Another aspect, a study carried out in Cuttack, Odisha, highlights the significance of ICT in agriculture. The government and business organisations should offer suitable knowledge-generating activities to the farmers to persuade them to accept ICTs in agricultural marketing decision-making. According to the study, many farmers are unaware of government programmes and services like Nam, the Paramparagat Krishi Vikash Yojana, crop insurance, etc. Sinha (2019), to promote the value of all farmer-related programmes and their use, the government must concentrate on information, education, and communication. Singh & Singh, et al. (2021), explained the use of social media is becoming crucial for the overall growth and development of the agriculture sector. It serves as a common forum for conversation and increases the participation of under-represented and marginalised farmers and farm women. Patel (2016), highlighted with the help of a digital ecosystem for agriculture, farmers in less developed and remote regions can now participate in the global economy. This encourages information sharing and collaboration among farmers worldwide, promoting local agricultural and economic progress.

2.5 Hybrid Communication Models

According to Leeuwis (2004), Hybrid models that combine traditional and digital communication methods have been proposed as the most effective strategy, considering each approach's strengths and limits. These models can use the extensive reach and interactive features of digital platforms while preserving the cultural significance and ease of use of older techniques. By integrating radio programs with mobile phone feedback systems, the interactivity and responsiveness of agricultural extension services can be improved. Furthermore, the combination of community gatherings and internet information tools can offer extensive assistance to women farmers.

2.6 Community Radio and Localized Media

Singh & Bhatnagar (2017), highlighted that community radio has arisen as a potent tool for the empowerment of rural women. In Odisha, localized radio broadcasts have been pivotal in informing women farmers about agricultural techniques, government subsidies, and women's rights). Community radio utilizes local languages and culturally relevant content to guarantee that communication is accessible and familiar to its audience. Moreover, Das et al. (2019), enlightened that women-focused initiatives on All India Radio (AIR) have showcased successful case studies of female farmers, motivating others in the community to embrace improved practices.

The current literature underscores the transformative capacity of communication strategies in empowering rural women farmers. Although conventional communication channels are still pertinent, the use of ICT, community radio, and gender-sensitive methodologies can augment their efficacy. However, substantial obstacles, including technology accessibility and sociocultural limitations, must be overcome to ensure the efficacy of these strategies in Odisha.

3. RESEARCH GAPS

Various obstacles impede rural women farmers' efficient application of communication tools in Odisha.

These factors encompass insufficient knowledge and skills in using digital technology, and insufficient physical resources and facilities.

A communication gap hinders the complete involvement of rural women farmers in agricultural work as well as economic developments in Odisha.

3.1 Conceptual Framework

According to the research gap, the above conceptual framework is constructed for the rural women farmers will be empowered in agricultural work as well as economic developments in Odisha. It can measure the impact of communication methods to empower rural women farmers. The conceptual model is formulated with five major factors that are used for measuring the effective utilization of communication methods, i) Awareness Campaigns, ii) Digital Outreach, iii) Community-Based Marketing, iv) Collaboration with NGOs, and v) ICT content in the local language. The objective of this conceptual model is to measure the impact of all factors that will directly affect the Information Effective Utilization of

Communication factors. It can be measured the impact of all factors individually as well as together direct impact on communication methods. So that rural women farmers can uplift their communication.

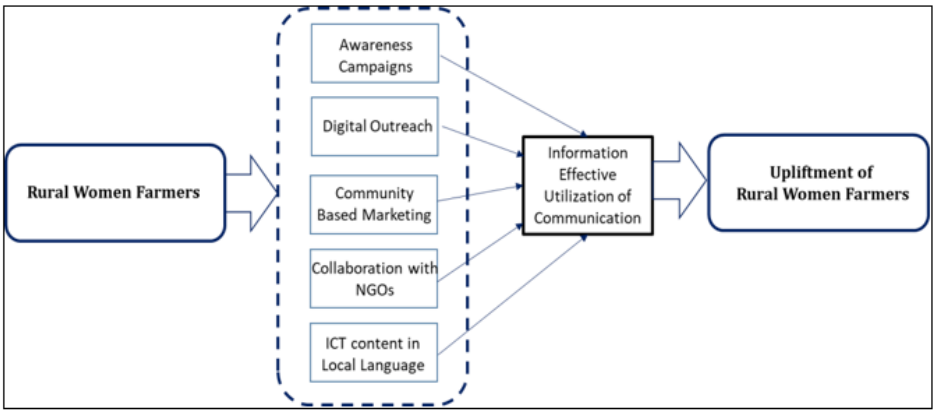

Figure 1: Conceptual Framework for Empowerment of Rural Women Farmers

3.2 Methodology

This section of the study provides a concise overview of the many phases of research included in the work. The objective of the study was to explore the diverse underlying elements and their impact on rural women farmers' upliftment through consideration of the existing literature and our conceptual framework. To analyze and demonstrate the hypotheses the primary data were collected using structured questionnaires, observations, focus group discussions, and interview schedules. The questionnaire is designed with 15 questions based on five factors excluding demographic

factors. A random sampling technique was used to select the rural women farmers for the study. Six hundred and fifty (650) questionnaires were distributed in 14 selected districts of Odisha and randomly 428 data were collected which is mentioned in Table 1. As per the below-mentioned sample calculation formula, the minimum required sample is 384. However, 430 samples were collected and considered for the analysis.

$$\text{Sample size} = \frac{\frac{z^2 X\ p(1-p)}{e^2}}{1+\frac{z^2 X p(1-p)}{e^2 N}} \quad (1)$$

N = population size, e = Margin of error (5%), z = z-score

The statistical tool is used to demonstrate the hypotheses. The study adhered to the methodology for data management, advanced analytics, and multivariate analysis to assess the data reliability and the validity of the constructs. The observed variable for each construct has been formulated using the scale derived from prior surveys. The constructs overall reliability and validity were assessed using "Cronbach's Alpha." The interrelationships among the constructs were examined and validated for all hypotheses.

3.2.1 Objective

To explore the different communication methods to uplift rural women farmers in Odisha.

To identify the level of awareness of different communication methods among rural women farmers in Odisha.

To analyze the impact of communication methods to uplift rural women farmers in Odisha.

3.2.2 Formulation of Hypotheses

H1o: There are no efficient communication methods for uplifting rural women farmers in the agriculture sector of Odisha.

H1a: There are efficient communication methods for uplifting rural women farmers in the agriculture sector of Odisha.

H2o: There is no significant impact of communication methods for uplifting rural women farmers in Odisha.

H2a: There is a significant impact of communication methods for uplifting rural women farmers in Odisha.

H3o: There is no major Role of ICT content in the local language of communication methods for uplifting rural women farmers in Odisha.

H3o: There is a major Role of ICT content in the local language of communication methods for uplifting rural women farmers

in Odisha.

4. DATA ANALYSIS AND FINDINGS

The primary data was collected from selected 14 districts, those districts are existing more than 35 thousand women farmers out of 30 districts in Odisha.

Table 1: District-wise Women Farmers

Sl. No.	District	Women Farmers
1	BALASORE	42847
2	BARGARH	69420
3	BOLANGR	40978
4	GAJAPATI	46056
5	GANJAM	101832
6	KALAHANDI	54387
7	KEONJHAR	46435
8	KORAPUT	75745
9	MALKANGIRI	38511
10	MAYURBHANJ	77521
11	NABARANGPUR	35697
12	RAYAGADA	44520
13	SAMBALPUR	38288
14	SUNDARGARH	42146

Source: https://agri.odisha.gov.in/files/agriculture -statistics -2018-2019

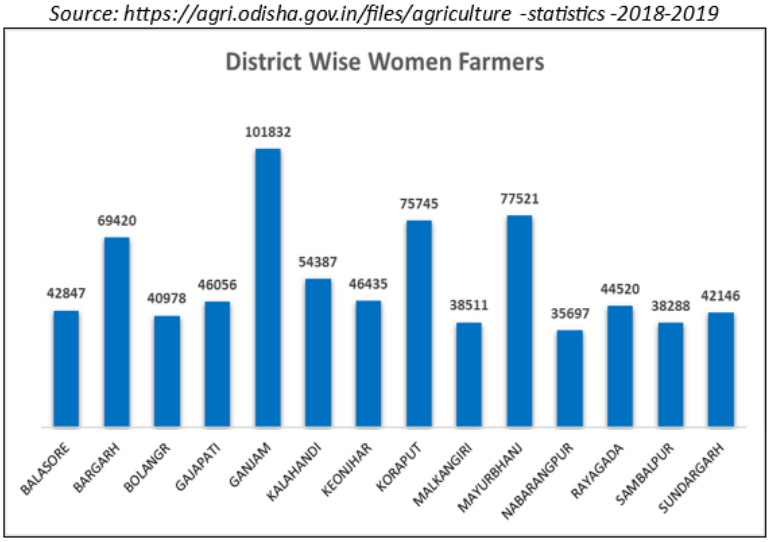

Figure 2: District-Wise Women Farmers

According to the above Table 1 & Figure 1, the total number of women farmers in Balasore is 42847, Bargarh 69420, Bolangir 40978, Gajapati 46056,

Ganjam 101832, Kalahandi 54387, Keonjhar 46056, Koraput is 75745, Malkangiri is 38511, Mayurbhanj is 77521, Nabarangpur is 35697, Raygada is 44520, Sambalpur 38288 and Sundargarh 42146, total 754383

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Table 2: Data Reliability and Validity Test of the Collected Data

Case Processing Summary			
		N	%
Cases	Valid	430	100.0
	Excluded[a]	0	.0
	Total	430	100.0
a. Listwise deletion based on all variables in the procedure.			

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.796	.796	14

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.807
Bartlett's Test of Sphericity	Approx. Chi-Square	2961.380
	df	105
	Sig.	.000

According to Table 2, the Case Processing Summary reflected the total number of data collected 430, Cronbach's Alpha is 0.796 (approximately 80%), and Sampling Adequacy (KMO) is 0.807 (approximately 80%). This means the collected data's validity and reliability are significant for further analysis.

Factor Analysis

Table 3: The Factor Analysis

Total Variance Explained									
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.669	24.459	24.459	3.669	24.459	24.459	2.136	14.242	14.242
2	1.810	12.064	36.523	1.810	12.064	36.523	2.073	13.820	28.062
3	1.606	10.709	47.232	1.606	10.709	47.232	1.927	12.846	40.908
4	1.186	7.909	55.141	1.186	7.909	55.141	1.658	11.051	51.959
5	1.112	7.413	62.555	1.112	7.413	62.555	1.308	8.720	60.679
6	1.016	6.775	69.329	1.016	6.775	69.329	1.297	8.650	69.329
7	.979	6.530	75.859						
8	.790	5.268	81.128						
9	.769	5.129	86.257						
10	.692	4.611	90.868						
11	.609	4.060	94.928						
12	.510	3.397	98.325						
13	.118	.784	99.109						
14	.082	.543	99.652						
15	.052	.348	100.000						
Extraction Method: Principal Component Analysis.									

Table 3 shows the values of Factor Analysis, here the total factors are selected 15. However, the 11 factor's eigenvalues are shown significant (>= 60%). However, the other 4 factor's eigenvalues showed less than equals to 60%, which is not significant for consideration in further analysis.

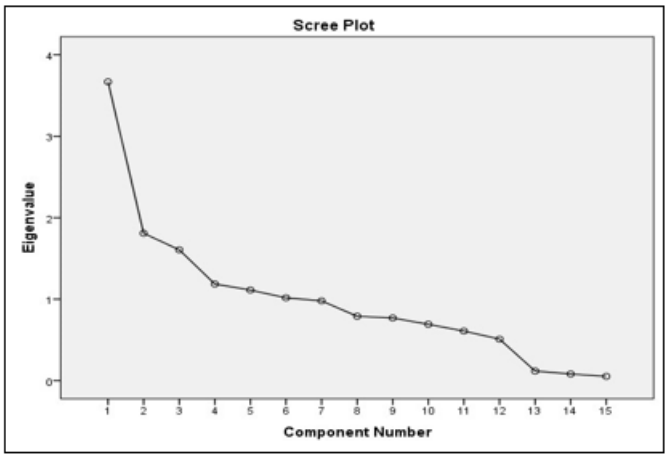

Figure 3:Scree Plotfeigenvalue

Descriptive Analysis

Table 4: Descriptive Analysis

Descriptive Statistics			
	Mean	Std. Deviation	N
AC	4.13	.736	430
DO	4.08	.779	430
CBM	4.10	.857	430
CN	3.93	.824	430
ILL	4.02	.825	430

Table 4 shows the descriptive analysis with “mean” and “Std. Deviation” of the factors, i) Awareness Campaigns (AC) 4.13 & 0.736, ii) Digital Outreach (DO) 4.08 & 0.779, iii) Community-Based Marketing (CBM) 4.10 & 0.857, iv) Collaboration with NGO (CN) 3.93 & 0.824, and v) ICT content in Local Language (ILL) 4.02 & 0.825.

Table 5: Model Summary with DW test

Model Summary					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
H1	.728[a]	.530	.528	3.687	
H2	.876[b]	.741	.727	2.683	
H3	.886[c]	.849	.843	2.681	1.301

The function's output presents the above table containing: the autocorrelation value, and the Durbin-Watson (DW) statistic. The conventional rule of thumb indicates that a DW statistic value ranging from 1.5 to 2.5 is deemed typical. The DW statistic, as indicated in the table above, is 1.301 indicating there is a positive autocorrelation.

ANOVA TEST

Table 6: ANOVA Table

ANOVA						
Model		Sum of Squares	df	Mean Square	F	Sig.
H1	Regression	30.151	1	30.151	63.877	.000
	Residual	202.026	428	.472		
	Total	232.177	429			
H2	Regression	32.784	2	16.392	35.104	.000
	Residual	199.392	427	.467		
	Total	232.177	429			
H3	Regression	34.633	3	11.544	24.895	.000
	Residual	197.543	426	.464		
	Total	232.177	429			

5. DEMONSTRATED HYPOTHESIS (H1)

According to ANOVA Table 6, Hypothesis H1 the "F" value is 63.877, indicating a favourable outcome, and the "P" value is 0.000, which is below the 0.05 significance threshold. Thus, we can substantiate our hypothesis. Consequently, the null hypothesis "*H1o: There are no efficient communication methods for uplifting rural women farmers in the agriculture sector of Odisha*" is rejected, whereas the alternative hypothesis "*H1a: There are efficient communication methods for uplifting rural women farmers in the agriculture sector of Odisha"* is accepted. It indicates that multiple effective strategies exist for conveying information, knowledge, and resources pertinent to agriculture to rural women farmers in Odisha. These communication methods strategies are pragmatic, influential, and specifically tailored to confront the distinct constraints encountered by rural women in obtaining essential agricultural information. The expression suggests that traditional, digital, or community-based communication methods are essential in uplifting women farmers through providing agricultural education, training, and market information. Facilitating their participation in decision-making processes.

5.1 Demonstrated Hypothesis (H2

According to ANOVA Table 6, Hypothesis H2 the "F" value is 24.895, indicating a favourable outcome, and the "P" value is 0.000, which is below the 0.05 significance threshold. Thus, we can substantiate our hypothesis. Consequently, the null hypothesis "*H2o: There is no significant impact of communication methods for uplifting rural women farmers in Odisha*" is rejected, whereas the alternative hypothesis "*H2a: There is a significant impact of communication methods for uplifting rural women farmers in Odisha"* is accepted. It indicates that customizing communication messages to accommodate the different communication methods and circumstances of rural women farmers in Odisha might provide significant and beneficial outcomes. It emphasizes that rural women farmers originate from diverse educational backgrounds, resulting in varying requirements, challenges, and preferences. Consequently, developing communication tactics that account for these disparities such as employing local languages, addressing particular agricultural practices, or factoring their resource accessibility renders the content more relatable, successful, and powerful.

Customized messaging assurance that rural women farmers receive information in a comprehensible, trustworthy, and actionable manner, ultimately resulting in enhanced adoption of agricultural technologies, increased productivity, and higher empowerment.

5.2 Demonstrated Hypothesis (H3)

According to ANOVA Table 6, Hypothesis H3 the "F" value is 63.877, indicating a favourable outcome, and the "P" value is 0.000, which is below the 0.05 significance threshold. Thus, we can substantiate our hypothesis. Consequently, the null hypothesis "*H3o: There is no major Role of ICT content in the local language of communication methods for uplifting rural women farmers in Odisha*" is rejected, whereas the alternative hypothesis "*H3a: There is a major Role of ICT content in the local language of communication methods for uplifting rural women farmers in Odisha"* is accepted. A theoretical foundation to guide ICT advancements. Additional study data is required to establish the correlation between ICT and agricultural outcomes, including yield, profits, labour productivity, and losses attributable to pests and illnesses. The analyses indicated significant knowledge and Information and Communication Technology connections to rural women empowerment in Odisha. This is essential for guiding policy measures that enhance ICT utilization for the advantage of rural women.

6. CONCLUSION

Research into communication methods that empower rural women farmers in Odisha demonstrates the vital importance of implementing communication techniques which support their social and economic growth. The agricultural sector in Odisha largely benefits from rural women farmers but they encounter problems resulting from restricted information access and technical limitations as well as social and cultural barriers. Rural women farmers in Odisha can overcome their communication challenges through a combination of traditional community meetings and radio programs and contemporary tools like mobile apps and ICT platforms. This study shows that implementing messages that match rural women farmer's economic conditions leads them to better understand innovative farming practices. Social networks as well as participatory communication channels help create trust while enabling collaboration to spread information broadly throughout the community. Inclusive agricultural strategies that consider sensitivity to gender need to collaborate with community-based projects to meet the exclusive requirements of women farmers. The combination of traditional approaches with digital resources and location-specific messaging helps stakeholders make rural women farmers more powerful while enabling them to obtain resources enhance their yields and participate better in rural economic growth. The study demonstrates an ongoing requirement to build communication methods which both distribute information while stimulating performance improvement and capacity building and sustainable agricultural growth in Odisha.

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