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Attitude of Rural Farmers Towards the Usage of Whatsapp in Agriculture

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ABSTRACT

ICT has enhanced the capabilities of rural farmers by facilitating improved access to natural resources, advanced agricultural technologies, efficient production strategies, as well as market and financial services. The study examines rural farmers' use of WhatsApp in agriculture, a platform that facilitates access to agricultural information and resources. The primary objective was to assess attitudes toward the usage of WhatsApp among farmers. A sample of 40 rural farmers from the Samulamlan subdivision of Churachandpur district was selected using a structured interview schedule. The study examines the attitudes of farmers from different age groups toward mobile applications and their impact on agricultural communication, learning, and market efficiency. The analysis involved a sample size of 150 respondents, categorized into four age groups: 18–25 years, 25–35 years, 35–45 years, and above 45 years. Mean scores and standard deviations (SD) were calculated for each statement across the groups, followed by analysis of variance (ANOVA) to identify significant differences among the age groups.The results demonstrate significant differences in attitudes toward mobile applications across age groups. Older respondents consistently rated apps lower compared to younger respondents. The study also identified that a majority of respondents faced constraints in using WhatsApp for agricultural purposes. These challenges likely include limited technological skills, lack of access to smartphones or reliable internet, and difficulty in understanding app features.

Keywords: *Manipur,Rural Farmers, Social Media, Knowledge, WhatsApp, Awareness, Attitude, Constraints.*

INTRODUCTION

Information and Communication Technology (ICT) has emerged as a fundamental and transformative element in rural life. This initiative has empowered rural farmers by improving access to information on natural resources, advanced agricultural technologies, effective production strategies, and market and financial services (Mishra et al., 2020). An affirmative disposition towards ICT is essential for optimising its advantages sustainably. Online platforms are frequently utilised for information dissemination in rural regions Sarkar & Das (2021). The acquisition of relevant knowledge and a positive attitude towards these platforms can markedly affect the viewpoints of rural populations, including farmers. In this context, attitude denotes the extent of positive or negative sentiments that farmers hold regarding ICTs. Positive attitudes towards ICTs are crucial for allowing farmers to utilise effective information support tools, subsequently facilitating more efficient planning of extension programmes in a dynamic agricultural landscape (Bhanotra et al., 2020; Patel et al., 2020 and Abdullahi et al., 2021).

Farmers are increasingly adopting modern innovations in agricultural technologies, facilitating the integration of artificial intelligence and ICT tools as mentioned by Bhattacharya & Dey (2022) and Ramachandran & Menon (2023). The utilisation of ICT is expanding across multiple sectors, such as education, business, and agriculture. WhatsApp is among the most frequently utilised ICT applications (Abdullahi et al., 2021; Agnese et al., 2023). WhatsApp can significantly transform the agricultural value chain by offering small-scale farmers access to real-time information (Santoso et.al, 2021 and Sharma et.al, 2024). WhatsApp

provides farmers with timely and relevant information through instant messages, images, and videos, thereby enhancing decision-making processes. Additionally, WhatsApp can be employed to improve learning outcomes and increase access to education and training within the agricultural sector (Kungumaselvan et al., 2020; Helen et.al, 2023 and Shoba et.al, 2023). Sarkar & Das (2021) examined the role of social media platforms in disseminating agricultural information, focusing on WhatsApp usage among farmers in India. This study examines the growing significance of WhatsApp in disseminating agricultural knowledge among farmers in India. Farmers are utilising WhatsApp groups to share essential information regarding best practices, crop diseases, and weather conditions. The research indicates that WhatsApp effectively narrows the information gap, especially for small-scale farmers who previously faced constraints in accessing expert guidance. The findings indicate that farmers utilising WhatsApp are more likely to make informed decisions, thereby enhancing productivity and income. Challenges such as digital literacy and smartphone availability continue to impede broader adoption. Bhattacharya & Dey (2022). "WhatsApp as a Digital Extension Tool: Analysing Its Effectiveness in Agricultural Extension Services." This literature review assesses the efficacy of WhatsApp as a tool for agricultural extension. WhatsApp is utilised by agricultural extension workers to deliver real-time guidance to farmers. The research indicates enhancements in crop yields and resource management among farmers engaged in WhatsApp-based extension programmes. The ability to share multimedia content, such as images and videos of pests or crop conditions, facilitates the provision of targeted expert advice. The study concludes that WhatsApp improves communication among farmers and fosters a more inclusive agricultural community Ramachandran & Menon (2023). "The Impact of Social Media on Addressing the Information Gap in Agriculture: An Analysis of WhatsApp Utilisation in Rural India." This review examines the role of WhatsApp in bridging the information gap between urban and rural farmers. This study examines the incorporation of WhatsApp into agricultural advisory services and its function in facilitating equitable access to information. WhatsApp has demonstrated efficacy in disseminating timely information regarding weather forecasts, government schemes, and market prices, thereby facilitating quicker, data-driven decision-making among farmers. The study indicates that WhatsApp groups facilitate a virtual environment for peer learning and diminish reliance on conventional agricultural extension services. Nonetheless, misinformation and the necessity for content moderation are recognised as areas requiring enhancement.

Need of the Study

The requirements of farmers differ markedly between countries, influenced by the unique environment and developmental phases of rural regions. Despite WhatsApp's widespread usage, its uptake among farmers has been inconsistent. Numerous farmers possess access to WhatsApp and recognise its potential advantages; nonetheless, they encounter difficulties in utilising it successfully due to insufficient knowledge and abilities. This underscores the necessity to evaluate farmers' perceptions of utilising WhatsApp as a digital medium for obtaining and disseminating agricultural information. Conducting a study on this subject is essential to assess the platform's efficacy in promoting a shift in attitude towards information sharing among farmers, hence enhancing their capacity to utilise WhatsApp for agricultural objectives.

Objectives

The present study, "Attitudes ofRural Farmers towards the Usage of WhatsApp in Agriculture" was an attempt on that line with the following objectives to:

- Identify the socio-economic profile of the rural farmers.
- Observe knowledge of farmers towards the usage of WhatsApp applications in agriculture
- Find out the attitude of the rural farmers

towards the usage of WhatsApp applications in agriculture.

- Know the constraints faced by farmers in the usage of WhatsApp application in agriculture.

METHODOLOGY

The study was conducted in the Samulamlan subdivision of Churachandpur district, Manipur. A purposive sampling method was employed to select three villages: Turing, Phaisen, and Nungthangtampak. A sample of 150 rural farmers was randomly selected from these villages based on their knowledge, attitudes, and constraints regarding the use of WhatsApp in agriculture.Data collection was carried out using a structured interview schedule through face-to-face interactions with the respondents. The schedule included sections on the socio-economic profiles of the farmers, their knowledge of WhatsApp usage, attitudes towards its use in agriculture, and the constraints they faced. The responses were recorded and analysed using frequency and percentage distributions to summarize the data on knowledge and attitudes.For further analysis, ANOVA was conducted to examine whether there were statistically significant differences in the knowledge and attitudes of farmers towards the usage of WhatsApp across different age groups. This test helped determine the variation in attitude levels without assigning scores to individual responses. The data was analysed to understand the overall trend in farmers' attitudes and knowledge without the need for scoring scales, focusing instead on percentage-based analysis.

RESULTS AND DISCUSSION

The subsequent section discusses the study's findings. It analyses the social and demographic characteristics of respondents, exploring aspects like age, gender, marital status, type of family, monthly income, educational level and work experience into their backgrounds

Table 1
Socio-economic profile of the respondents (N=150)

Sl.no	Socio-Economic Factors	Category	Frequency	Percentage
1	Age	18-25	32	21.3
		25-35	64	43
		35-45	34	23
		Above 45	20	13.3
2	Gender	Male	85	57
		Female	65	43.3
3	Marital status	Married	95	63.3
		Unmarried	55	37
4	Type of family	Nuclear	83	55.3
		Joint	67	45
5	Monthly income	Below Rs 10,000	46	31.3
		Rs 10001-20000	50	33.3
		Rs 20001-30000	32	21.3
		Above 300001	22	15
6	Educational level	Illiterate	57	38
		High school	62	41.3
		Secondary school	20	13.3
		Graduate	11	7.3
7	Work experience	Less than 10 years	22	15
		10-15 years	51	34
		More than 15 years	77	51.3

The socio-economic profile provides valuable insights into the respondents' demographics. The largest age group 43 percent is 25-35 years, reflecting their active participation and readiness to adopt new agricultural practices. In contrast, only 13.3 percent are above 45 years, likely due to the physical demands of farming, which limit older individuals' active involvement.Male respondents 57 perentdominate, while females 43.3 percent are fewer, possibly due to socio-cultural norms restricting women's roles in agriculture. Most respondents 63.3 percent are married, and nuclear families 55.3 percent are more common, indicating a shift from joint family structures (45%).A significant proportion (33.3%) earns Rs. 10,001-20,000, typical of small to medium-scale farmers, while only 15% earn above Rs. 30,000, likely representing large-scale farmers or those with diversified income.Education levels show 41.3% have completed high school, reflecting moderate literacy, while graduates (7%) are few, suggesting limited access to higher education due to financial or infrastructural barriers.Work experience is predominantly over 15 years (51.3%), indicating substantial expertise. Conversely, 15% have less than 10 years of experience, likely representing younger individuals still acquiring skills or entering the field.

Knowledge of Farmers in the usage of Whatsapp Application in the Field of Agriculture

The responses from the farmer concerning their knowledge of the WhatsApp application in agriculture are presented in Table-2.

Table 2
Knowledge of Farmers in the usage of WhatsApp Application in Agriculture(N=150)

Sl.No.	Knowledge statement	Frequency	Percentage
1	Sharing the knowledge to others (images, texts, videos)	135	90
2	New innovative ideas can be generated	89	59.3
3	Act as an online platform to sell the product	71	47.3
4	Enhanced quality and productivity of the information	79	53
5	WhatsApp can promote learning during pre and post farmer training programme	100	67
6	Through WhatsApp workshops and conferences can be attended	70	47

*Multiple Responses

The majority 90 percent of the respondents actively share knowledge through images, texts, and videos through Whatsapp apps related agriculture related information. According to farmers they find whatsapp as a social media is an effective tools for them to disseminate information and foster collaboration and improve collective learning within the farming community. Around 67 percent acknowledge WhatsApp's role in promoting learning during pre- and post-training programs, particularly as many were unaware of its potential for agriculture before attending the program. Approximately 59.3 percent of the respondents believe that WhatsApp facilitates the generation of innovative ideas among their peer group by exposure to diverse farming practices through discussions and shared resources.Nearly half of the respondents 47.3 percent use the platform to sell their products online, while 53 percent report that it enhances the quality and productivity of information by providing timely, accurate, and relevant updates crucial for informed decision-making. Additionally, 47 percentage utilize WhatsApp to attend workshops and conferences, demonstrating its capacity to overcome geographical barriers and enable access to virtual learning opportunities.

Table 3
Anova for age and knowledge of Farmers Towards the Usage of Whatsapp for Agrculture

Knowledge	Age				N=150	
	18-25 years Mean & SD	25-35 years Mean & SD	35-45 years Mean & SD	Above 45 years Mean & SD	F-Value	Sig
Sharing the knowledge to others (images, texts, videos)	1.75 (.444)	1.00 (.000)	1.00 (.000)	1.00 (.000)	126.533	.000
New innovative ideas can be generated	2.00 (.000)	2.00 (.000)	1.11 (.315)	1.00 (.000)	233.865	.000
Act as an online platform to sell the product	2.00 (.000)	2.00 (.000)	1.39 (.492)	1.00 (.000)	70.787	.000
Enhanced quality and productivity of the information	2.00 (.000)	2.00 (.000)	1.27 (.445)	1.00 (.000)	97.100	.000
WhatsApp can promote learning during pre and post farmer training programme	2.00 (.000)	1.88 (.327)	1.00 (.000)	1.00 (.000)	410.963	.000
Through WhatsApp workshops and conferences can be attended	2.00 (.000)	2.00 (.000)	1.41 (.495)	1.00 (.000)	69.027	.000

The findings indicate significant age-based differences in how WhatsApp is perceived for knowledge sharing. Younger (18–25) and middle-aged (25–35) individuals show higher engagement in using WhatsApp for sharing knowledge, generating innovative ideas, selling products, and improving information quality, as reflected in their higher mean scores. In contrast, older age groups (35–45 and above 45) show lower engagement, with mean values closer to 1.00.

Notably, WhatsApp is highly valued by younger users for learning purposes, including farmer training programs, workshops, and conferences. The statistically significant F-values (p = .000) confirm strong generational differences in WhatsApp usage for knowledge enhancement. This suggests that younger individuals are more inclined to leverage digital platforms for innovation, business, and education, while older age groups may rely on traditional methods.

Attitude of Farmers Towards the Usage of Whatsapp In Agriculture

The perspective of farmers regarding the utilisation of the WhatsApp application in agriculture is illustrated in Table-4.

Table 4
*Attitude of Farmers towards the Usage of WhatsApp in Agriculture (N=150)**

Statement	Frequency	Percentage
It is an easy and convenient way of communicating	100	67
It empowers group learning	88	59
Apps help inspeedy spread of information among farmers	80	53
It ordinarily requires lesser internet data demands	78	52
Apps help to get an update on global trends on agriculture advancement	75	50
It is information enriched medium of information delivery	75	50
Discussion groups can facilitate the problems and needs of farmers	65	43.3
Apps assist us to monitor market circumstances efficiently	60	43.3

Multiple Response*

A majority 67 percent of respondents consider WhatsApp an easy and convenient communication tool that facilitates timely and accessible interactions among farmers, experts, and stakeholders, making it highly suitable for rural areas. Around 59 percent of the respondents believe WhatsApp fosters group learning by connecting farmers for collaborative knowledge exchange and problem-solving, enhance community engagement.

More than half of the responds 53 percent recognize WhatsApp's ability to rapidly disseminate critical updates, such as weather alerts, pest control measures, and market trends, by enabling direct connections with experts and farmer groups. Its low data requirements, emphasized by 52 percent of respondents, further underline its practicality in rural regions where internet connectivity and affordability are challenges. Half of the respondents 50 percent of respondents view WhatsApp as a valuable medium for sharing updates on global agricultural advancements and delivering enriched, relevant information, bridging the knowledge gap between local and global farming practices. Additionally, 43.3 percent appreciate WhatsApp discussion groups for addressing farmers' needs, offering a platform for peer support, expert advice, and collaborative decision-making. Similarly, 43.3 percent use the app to monitor market conditions, improving awareness and aiding better pricing strategies.Supporting this, a study by Chander (2016) in Karnataka highlighted that the Department of Agriculture mandated extension officers to use WhatsApp for disseminating information, messages, and updates, showcasing its institutional acceptance and effectiveness in enhancing communication within the agricultural sector.

Table 5
Anova for age and Attitude of Farmers Towards the Usage of Whatsapp for Agrculture

Attitude	**Age**				**N=150**	
	18-25 years Mean & SD	**25-35 years** Mean & SD	**35-45 years** Mean & SD	**Above 45 years** Mean & SD	**F-Value**	**Sig.**
It is an easy and convenient way of communicating	2.00 (.000)	1.91 (.288)	1.00 (.000)	1.00 (.000)	550.216	.000
It empowers group learning	2.00 (.000)	2.00 (.000)	1.13 (.333)	1.00 (.000)	204.215	.000
Apps help in speedy spread of information among farmers	2.00 (.000)	2.00 (.000)	1.25 (.436)	1.00 (.000)	102.741	.000
It ordinarily requires lesser internet data demands	2.00 (.000)	2.00 (.000)	1.25 (.436)	1.00 (.000)	92.170	.000
Apps help to get an update on global trends on agriculture advancement	2.00 (.000)	2.00 (.000)	1.28 (.453)	1.00 (.000)	77.718	.000
It is information enriched medium of information delivery	2.00 (.000)	2.00 (.000)	1.33 (.473)	1.00 (.000)	80.680	.000
Discussion groups can facilitate the problems and needs of farmers	2.00 (.000)	2.00 (.000)	1.48 (.504)	1.00 (.000)	63.478	.000
Apps assist us to monitor market circumstances efficiently	2.00 (.000)	2.00 (.000)	1.56 (.500)	1.00 (.000)	62.571	.000

The study examines the attitudes of farmers from different age groups toward mobile applications and their impact on agricultural communication, learning, and market efficiency. The analysis involved a sample size of 150 respondents, categorized into four age groups: 18–25 years, 25–35 years, 35–45 years, and above 45 years. Mean scores and standard deviations (SD) were calculated for each statement across the groups, followed by analysis of variance (ANOVA) to identify significant differences among the age groups.

The results demonstrate significant differences in attitudes toward mobile applications across age groups. Older respondents consistently rated apps lower compared to younger respondents, who found them highly effective in communication, group learning, information dissemination, and market monitoring. These differences could be attributed to varying levels of experience, needs, and reliance on technology.

The findings suggest the need for tailored training programs to enhance app usage among younger farmers while leveraging the positive attitudes of older farmers to promote adoption among their peers.

Constraint usage of Whatsapp application among Rural Farmers in Agriculture

The constraints faced by the rural farmers in the usage of WhatsApp application in agriculture is given in Table-6

Table 6
*Constraint'susageof WhatsApp application among rural farmers in agriculture (N=40)**

Statements	Frequency	Percentage
Inaccessible mobile network	98	65.3
Challenging to read the contents through the screen	88	59
Difficulties in operational/settings	70	53
Frequent popups of crowd messages distract the core content	68	45
Language barriers	67	45
Not user friendly	45	30
Do not have smartphones	45	30

Multiple response *

A significant majority 65.3 percent of respondents identified poor network connectivity as a major obstacle, particularly in rural and remote areas where inadequate infrastructure hampers access to reliable mobile networks. Approximately 59 percent reported difficulties in reading content on mobile screens, often due to small font sizes, complex layouts, or visual strain, challenges that are more pronounced among older farmers or those less familiar with smartphones. More than half of the respondents 53 percentfaced challenges in navigating operational settings within mobile apps, highlighting the need for simpler interfaces and user-friendly designs tailored to diverse levels of digital literacy. Frequent pop-ups and group messages distracted 45 percent of respondents, reduce their ability to focus on critical agricultural content.Language barriers were reported by 45 percent, emphasizing the lack of multilingual support in many mobile applications. Respondents noted struggles with understanding technical terms or instructions, underscoring the necessity of regional language options to improve accessibility. Additionally, 30 percent of respondents found mobile applications not user-friendly, citing complexity in design and lack of guidance for new users. Another 30 percent indicated they do not own smartphones, attributing this to financial constraints or limited awareness of the benefits of mobile technology in agriculture. These findings point to the need for targeted interventions to address technological, linguistic, and economic barriers for improved adoption.

CONCLUSION

The widespread adoption of Information and Communication Technologies (ICTs) has significantly improved communication and ensured the delivery of essential services and information to individuals who previously lacked access. This study aimed to assess farmers' perceptions of using WhatsApp as a tool for agriculture. Findings revealed that most respondents held a positive attitude towards WhatsApp, recognizing it as an accessible and convenient communication platform among other mobile applications.

The analysis showed notable differences in attitudes across age groups, with older respondents generally rating the utility of mobile applications, including WhatsApp, lower compared to younger respondents. Despite this, the majority demonstrated knowledge of how WhatsApp contributes to agricultural activities, leveraging it for knowledge sharing, accessing timely updates, and improving farming practices.

However, several respondents reported limitations in using WhatsApp. Key constraints included poor mobile network connectivity in rural areas, difficulties in reading text on small screens, challenges with application installation, and navigating its settings. These barriers highlight the need for further investigation by agricultural extension practitioners to address the issues faced by rural users. Addressing these challenges is vital for enabling the effective use of ICT tools like WhatsApp in rural communities, ultimately fostering improved agricultural productivity and communication.

SUGGESTIONS

- It is crucial to implement training programs focused on improving farmers' knowledge and skills in using WhatsApp and other ICT tools.
- Government and private sector partnerships should prioritize expanding internet cover rage, particularly in remote regions, to support uninterrupted communication and access to valuable agricultural information.
- Developers should consider the unique needs of rural farmers by designing simpler, more user-friendly mobile interfaces for platforms like WhatsApp.
- Localization of content in regional languages should be promoted to ensure wider adoption and engagement.

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