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Harnessing mass media for agricultural advancement of hill farmers in Meghalaya

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Abstract

Agricultural information dissemination through mass media is crucial for the development and transfer of agricultural technologies, particularly in regions like Meghalaya, where traditional farming practices persist amidst challenges like weather variability and limited access to communication technologies. The study investigated the mass media ownership, frequency of use, preferred locations and times of use, and purposes for engagement with mass media of farmers in Meghalaya during 2023. The study was conducted in three districts of Meghalaya viz., Ri-Bhoi, West Jaintia Hills, and West Garo Hills. Two crops were chosen from each district: pineapple and ginger from Ri-Bhoi, turmeric and tomato from West Jaintia Hills, and cashew nut and areca nut from West Garo Hills. Using random sampling with proportional allocation, 60 farmers were selected from each crop in four villages, resulting in a total of 360 respondents. The respondents were chosen from 12 village clusters, totalling 24 villages. The data were collected with a pre-structured interview schedule. The study revealed that the majority of the respondents had a medium level of mass media utilization. The predominance of medium-level usage suggests balanced utilization patterns. Ownership and utilization rates vary across media types, with social media leading in ownership (63.05%) and mean utilization (1.98). Print media shows lower rates. Purpose of usage of mass media include newspapers for various types of news (28.05%), magazines for entertainment (8.89%), TV for entertainment (59.16%), and social media for entertainment (69.44%). Accessing media occurs predominantly at home and at any time, with social media being accessible at all times. Understanding these mass media utilization patterns is crucial for policymakers and agricultural stakeholders to effectively disseminate information, promote agricultural development, and address farmer problems in Meghalaya's hill regions. Leveraging mass media channels, including mobile telephony and social media, holds significant potential in bridging information gaps and empowering farmers in remote areas.

Keywords: Mass media, utilization, social media, information, ICT

Introduction

Agricultural information dissemination plays a crucial role in the development and transfer of agricultural technologies, as it is essential for the success and improvement of agriculture through the timely dissemination of new knowledge. Despite farmers' local knowledge and experience, they require innovative information generated from research and development to cope with challenges such as weather and pestilence (Adejoh *et al.*, 2016) ^[1]. Mass media, including radio, television, newspapers, magazines, and the internet, are intensively used by farmers in developing countries to source agricultural information. The role of mass media is significant in disseminating agricultural information and enabling remote farmers to make informed decisions about farming activities

(Chhachhar, 2012) ^[2]. Farmers selectively rely on mass media sources based on various factors such as cosmopolitan/local, richness/poverty, and credibility of the source (Chauhan and Kansal, 2016) ^[3]. Mass media channels are crucial in increasing agricultural awareness among farmers, ultimately enhancing production levels. They help rural youth access information about agricultural innovations, widen their thinking capacity, and stimulate interest in vocational enterprises (Dash and Kumar, 2017) ^[4]. Mass media also contribute to the diffusion of new agricultural technologies and changes in farmers' attitudes (Singh *et al.*, 2010) ^[5]. Given the importance of effective information dissemination, it is crucial to identify the most utilized mass media sources and channels to develop suitable communication strategies (Bhatt and Patel, 2011) ^[6].

The remote villages of North-East India, including Meghalaya, face challenges such as a lack of access to communication technologies, poor road connectivity, and limited transportation systems (Kharmudai *et al.*, 2018) ^[7]. Agricultural extensionists and rural advisory service providers prioritize improving information access to enhance farmers' socio-economic conditions (Syiem and Raj, 2015) ^[8]. In the 21st century, farmers are becoming increasingly sensitive to technological advancements, necessitating access to timely and valuable information for agricultural development. Mass media utilization is crucial for the success of agricultural development programs in developing countries, with broadcast media being effective in disseminating knowledge to farmers (Ohara *et al.*, 2023) ^[9].

In Meghalaya, where agriculture is predominant, improving information dissemination channels is crucial for enhancing farming practices and socio-economic conditions (Das and Sangma, 2020) ^[10]. However, challenges such as tough terrains, traditional farming practices, and inadequate infrastructural facilities hinder agricultural development (Lahiri and Das, 2010) ^[11]. Lack of information dissemination in hilly regions is attributed to geographical disadvantages and fragmented households (Lahiri, 2016) ^[12]. Access to various sources and channels of agricultural information is essential for meeting farmers' needs and uplifting the tribal economy (Yadav *et al.*, 2011; Meena and Sharma, 2012) ^[13,14]. In the face of global food insecurity, driven by increasing population and stagnating food grain production, effective information dissemination through mass media is paramount (Lahiri, 2016; Maity *et al.*, 2013) ^[12,15]. Considering the importance of mass media in agriculture, this study aims to assess the utilization pattern of mass media by hill farmers in Meghalaya, focusing on their preferences regarding place, time, and purpose of usage.

Materials and Methods

The study employs an ex-post facto research design to investigate mass media ownership and utilization patterns among farmers across three distinct districts in Meghalaya: Ri-Bhoi, West Jaintia Hills, and West Garo Hills. From Ri-Bhoi district, pineapple and ginger were selected, with two clusters comprising Plasha, Umwang and Nongrim Jirang, Umkrem Dykhong villages for pineapple, and Umtung, Lumdaitkla and Raitong, Mawdiengngan villages for ginger. In West Jaintia Hills district, turmeric and tomato were chosen, with clusters including Shangpung, Rtiang and Laskein, Muleih villages for turmeric, and Longshiwait, Moodop and Moodymmai Sung, Wahiajer villages for tomato. From the West Garo Hills district, cashew nut and areca nut were selected, with clusters consisting of Balupara, Chidaogre and Bolwariegre-Darechikgre, Bolchugre villages for cashew nut, and Sangsangre, Nawalgre and Pagugre, Asanangre villages for areca nut. Through random sampling with proportional allocation, a total of 360 respondents were chosen, with 60 farmers selected from four villages (2 clusters) per crop. The study encompasses an analysis of mass media usage across print (newspapers and magazines), digital (social media and websites), and broadcast (television and radio) media. Structured interviews, using pretested interview schedules,

were conducted to collect data. Media usage frequency was evaluated on a three-point continuum: often, sometimes, and never. The mean utilization level of mass media sources assessed using Weighted Mean Score (WMS). Statistical analyses, including mean, frequency, percentage, and standard deviation, were employed to categorize participants based on their media usage levels.

Results and Discussion

The data on the distribution of respondents based on their level of mass media utilization is displayed in Table 1. The majority of respondents (71.94%) fell into the medium category of mass media utilization. Following this, 14.16 per cent of respondents were classified under the low category, while 13.89 per cent were categorized as high users of mass media. Predominance of medium-level mass media utilization among respondents reveals a balanced utilization pattern. This diversity in media engagement highlights the need for tailored communication strategies to effectively target different audience segments. Similar results were reported by Dash and Kumar (2017) ^[4].

Table 1: Distribution of respondents according to their level of utilization of mass media sources (n=360)

Sl. No.	Category	Frequency (f)	Percentage (%)
1	Low (<6.7)	51	14.16
2	Medium (6.7 -11.3)	259	71.94
3	High (>11.3)	50	13.89

The data presented in Table 2 highlights varying patterns of ownership, frequency of usage, and mean level of utilization across different media sources.

The study found that the majority of respondents, comprising over three-fifths (63.05%), own social media accounts. Following this, ownership rates were noted for television (50.55%), newspaper subscription (12.50%), radio ownership (10.55%), magazine subscription (9.16%), and account registration in websites (8.61%). The mean level of utilization was the highest for social media (1.98) followed by television (1.77), newspaper (1.39), radio (1.25), magazine (1.22) and websites (1.14). Almost three-fourths (71.94%) of respondents indicated they never use newspapers as a mass media source, with sometimes (17.22%) and often (10.83%) being less common responses. Similarly, more than four-fifths (84.17%) of respondents reported never using magazines, followed by sometimes (9.44%) and often (6.39%). Approximately two-fifths (37.22%) of respondents stated they never use television as a mass media source, with often (33.33%) and sometimes (29.44%) following as less frequent responses. Nearly four-fifths (78.61%) of respondents declared they never use radio, with sometimes (17.22%) and often (4.17%) being less prevalent responses. In terms of social media, nearly two-fifths (38.06%) of respondents stated they often use it as a mass media source, while sometimes (31.39%) and never (30.56%) were also mentioned. The majority (89.17%) of respondents stated they never use websites as a mass media source, followed by sometimes (7.50%) and often (3.33%).

The findings suggest a notable shift in media utilization habits, with digital platforms, particularly social media, gaining prominence over traditional print and broadcast

media. Print media, including newspapers and magazines, exhibit lower ownership and utilization rates compared to broadcast and digital media. Social media's high ownership and frequent utilization reflect its pervasive influence on contemporary communication behaviours. Its interactive nature and accessibility likely contribute to its widespread adoption among respondents. In contrast, traditional print media, such as newspapers and magazines, face challenges in retaining audience engagement, as evidenced by the majority of respondents reporting infrequent usage. Similarly, broadcast media, while still widely owned, experience varying levels of utilization, indicating evolving

preferences among respondents. The prevalence of digital media highlights the importance of online platforms in disseminating information and engaging audiences. Social media is being embraced by farmers more and more as a useful tool for networking, exchanging knowledge, and gaining access to resources (Harsini *et al.*, 2023) ^[16]. Despite the dominance of social media, the low utilization of websites suggests potential areas for improvement in online content delivery and user experience. The extent of utilization of different mass media sources varies among different categories of farmers (Chauhan and Kansal, 2016) ^[3].

Table 2: Distribution of respondents according to their ownership and mean level and extent of utilization of mass media sources (n=360)

Sl. No.	Mass media Sources	Ownership / Registration	Frequency of use			WMS
			Often	Sometimes	Never	
1	Print media					
a)	Newspaper	45 (12.50)	39 (10.83)	62 (17.22)	259 (71.94)	1.39
b)	Magazine	33 (9.16)	23 (6.39)	34 (9.44)	303 (84.17)	1.22
2	Broadcast media					
a)	Television	182 (50.55)	120 (33.33)	106 (29.44)	134 (37.22)	1.77
b)	Radio	38 (10.55)	15 (4.17)	62 (17.22)	283 (78.61)	1.25
3	Digital media					
a)	Social media	227 (63.05)	137 (38.06)	113 (31.39)	110 (30.56)	1.98
b)	Websites	31 (8.61)	12 (3.33)	27 (7.50)	321 (89.17)	1.14

(Figures in parenthesis denote percentage, WMS indicates Weighted Mean Score)

Table 3 presents insights into the purposes for which respondents utilize various mass media sources, categorized into entertainment, news, and agriculture-related content. Among respondents using newspapers, a notable portion (28.05%) access them primarily for news-related content, including political, sports, and social news. Following this, entertainment (24.44%) and agriculture (19.72%) are also significant purposes for newspaper usage. For magazines, entertainment emerges as the primary purpose, even though with a smaller percentage (8.89%) of respondents, followed by agriculture (7.22%) and news (5.27%). Television is predominantly used for entertainment purposes, with nearly three-fifths (59.16%) of respondents citing this as their primary reason for usage. However, news (55.27%) and agriculture (25.27%) also contribute significantly to television consumption patterns. Radio usage shows a similar trend, with entertainment being the primary purpose for over one-tenth (15.27%) of respondents, followed by news (10.83%) and agriculture (10.27%). Social media platforms are predominantly used for entertainment, with a majority (69.44%) of respondents citing this as their primary purpose. However, news (45.27%) and agriculture (39.72%)

also attract considerable usage on social media. In contrast, websites are utilized by a minimal portion (5.83%) of respondents for news-related content, followed by agriculture (4.72%) and entertainment (3.89%). The data reveals distinct preferences among respondents regarding the purposes for which they utilize different mass media sources. While entertainment remains a prevalent theme across all platforms, variations exist in the prioritization of news and agriculture-related content. Newspapers and television emerge as prominent sources for accessing news content, reflecting their historical role as primary news dissemination platforms. However, the rise of digital media, particularly social media, has reshaped news consumption patterns, with a significant portion of respondents turning to these platforms for news updates. Agriculture-related content, while less prominent compared to entertainment and news, still attracts significant attention across various media sources. The results aligned with the findings of Dash and Kumar (2017) ^[4], revealing that the predominant use of radio and television was for entertainment purposes.

Table 3: Distribution of respondents according to their purpose of usage of mass media sources (n=360)

Sl. No.	Mass media sources	Purpose of usage		
		Entertainment	News	Agriculture
1	Print media			
a)	Newspaper	88 (24.44)	101 (28.05)	71 (19.72)
b)	Magazine	32 (8.89)	19 (5.27)	26 (7.22)
2	Broadcast media			
a)	Television	213 (59.16)	199 (55.27)	91 (25.27)
b)	Radio	55 (15.27)	39 (10.83)	37 (10.27)
3	Digital media			
a)	Social media	250 (69.44)	163 (45.27)	143 (39.72)
b)	Websites	14 (3.89)	21 (5.83)	17 (4.72)

(Figures in parenthesis denote percentage)

Table 4 illustrates the usage locations of various mass media platforms, categorized into own home, friends/relatives' home, and public places.

For newspapers, nearly one-fourth (24.44%) of respondents access them in public places, followed by their own homes (10.83%) and friends/relatives' homes (8.88%). Accessing magazines predominantly occurs in respondents' own homes (8.61%), followed by public places (7.50%) and friends/relatives' homes (4.16%). Television is primarily accessed from respondents' own homes (47.50%), with a significant portion also accessing it at friends/relatives' homes (37.77%). Accessing radio shows a similar trend, with nearly one-tenth of respondents accessing it at their own homes (9.72%), followed by public places (7.22%) and friends/relatives' homes (6.11%). The majority of respondents access social media from their own homes (69.44%), followed by public places (60.83%) and friends/relatives' homes (35.27%). Accessing websites is less common, with less than one-tenth of respondents accessing them from their own homes (7.77%), followed by public places (5.27%) and friends/relatives' homes (1.38%). The data highlights the varied locations where individuals access different mass media platforms. While own homes remain the primary location for accessing most media,

public places and friends/relatives' homes also play significant roles in media usage patterns. Newspapers and magazines are often accessed in public places, suggesting that individuals engage with print media while on the go or during leisure activities outside the home. Television and radio, on the other hand, are predominantly used in the comfort of respondents' own homes, reflecting their role as household entertainment staples. Social media usage exhibits a more flexible pattern, with a majority of respondents accessing it from their own homes but also frequently engaging with it in public places and friends/relatives' homes. This highlights the mobile nature of social media utilization, enabled by the ubiquity of smartphones and internet connectivity. Accessing websites appears to be less location-dependent compared to other media platforms, with relatively lower percentages across all locations. This suggests that website usage is more personalized and driven by individual preferences rather than specific location-based factors. Dash and Kumar (2017)^[4] observed that rural youth found their homes to be a comfortable environment for accessing mass media such as radio, television, mobile phones, computers, and newspapers.

Table 4: Distribution of respondents according to their place of usage of mass media sources (n=360)

Sl. No.	Mass media sources	Place of usage		
		Own home	Friend's / Relative's home	Public place
1		Print media		
a)	Newspaper	39 (10.83)	32 (8.88)	88 (24.44)
b)	Magazine	31 (8.61)	15 (4.16)	27 (7.50)
2		Broadcast media		
a)	Television	171 (47.50)	136 (37.77)	0 (0.00)
b)	Radio	35 (9.72)	22 (6.11)	26 (7.22)
3		Digital media		
a)	Social media	250 (69.44)	127 (35.27)	219 (60.83)
b)	Websites	28 (7.77)	5 (1.38)	19 (5.27)

(Figures in parenthesis denote percentage)

Table 5 presents the time of usage patterns for different mass media platforms among respondents. For newspapers, nearly one-tenth (9.72%) of respondents accessed them in the morning, followed by daytime (7.50%), anytime (5.00%), evening (3.05%), and night (2.77%). Accessing magazines occurred mostly anytime (9.17%), followed by daytime (3.05%), night (1.67%), evening (1.11%), and morning (0.83%). A significant portion of respondents accessed television anytime (36.11%), followed by night (11.67%), evening (6.11%), morning (5.00%), and daytime (3.88%). Radio usage was prominent during the evening (10.00%), followed by anytime (4.44%), daytime (2.77%), night (2.22%), and morning (1.94%). Social media was accessed most frequently anytime (45.00%), followed by night (9.16%), daytime (5.83%), morning (5.27%), and evening (4.16%). Accessing websites was less frequent, with a very small portion of respondents accessing them anytime (4.16%), followed by night (2.50%), daytime (1.67%), morning (1.38%), and evening (1.11%).

The data highlights the time of usage patterns for various mass media platforms, providing insights into when individuals engage with different forms of media throughout the day. Newspapers and magazines are predominantly

accessed during the morning and daytime hours, suggesting that individuals often engage with print media during leisurely morning routines. Television usage is more evenly distributed throughout the day, with a significant portion of respondents accessing it anytime. This reflects the role of television as a primary source of entertainment and information that individuals engage with at various times based on their schedules and preferences. Radio usage peaks during the evening, indicating that individuals may tune in to radio programs during their leisure time and also coincide with the prevalence of farming-related programs during this period. However, radio is also accessed at other times throughout the day, even though to a lesser extent. Social media usage is highly flexible, with a large proportion of respondents accessing it anytime. This reflects the pervasive nature of social media in individuals' daily lives, aligning with the anytime, anywhere accessibility enabled by smartphones and other mobile devices. Accessing websites shows a less pronounced pattern, with usage spread across different times of the day, even though at relatively lower frequencies compared to other mass media platforms. However, Dash and Kumar (2017)^[4] observed varied mass media usage patterns among rural youth.

Table 5: Distribution of respondents according to their time of usage of mass media sources (n=360)

Sl. No.	Mass media	Morning	Daytime	Evening	Night	Anytime
1	Print media					
a)	Newspaper	35 (9.72)	27 (7.50)	11 (3.05)	10 (2.77)	18 (5.00)
b)	Magazine	3 (0.83)	11 (3.05)	4 (1.11)	6 (1.67)	33 (9.17)
2	Broadcast media					
a)	Television	18 (5.00)	14 (3.88)	22 (6.11)	42 (11.67)	130 (36.11)
b)	Radio	7 (1.94)	10 (2.77)	36 (10.00)	8 (2.22)	16 (4.44)
3	Digital media					
a)	Social media	19 (5.27)	21 (5.83)	15 (4.16)	33 (9.16)	162 (45)
b)	Websites	5 (1.38)	6 (1.67)	4 (1.11)	9 (2.50)	15 (4.16)

(Figures in parenthesis denote percentage)

Conclusion

The study highlights the shifting media consumption landscape, where traditional media faces challenges from digital alternatives. Respondents' predominance of medium-level mass media utilization highlights a balanced utilization pattern. Recognizing these trends is essential for media organizations and advertisers to adjust their strategies effectively. The study emphasizes the critical role of mass media in delivering agricultural information to farmers, especially in Meghalaya's hilly areas. It uncovers diverse media ownership and usage patterns, with television and social media emerging as dominant platforms. Entertainment, news, and agricultural content are primary reasons for media utilization, reflecting farmers' varied informational needs. Understanding the context and timing of media usage is vital for crafting effective communication strategies. Leveraging mass media channels can significantly contribute to agricultural development, socio-economic empowerment, and addressing food insecurity in Meghalaya. Policymakers and agricultural stakeholders can drive progress in the region's agricultural sector by prioritizing improved information dissemination channels and utilizing mass media platforms.

Conflicts of interest: None

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