Usage of Media for Agricultural Information in Hyderabad (Sindh) Pakistan: A Farmer's Perspective

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Abstract:

The widespread distribution of information critically depends on the media's intent to analyze the impact of Pakistan's mainstream media on farmer's information related to agriculture in the country. This study explores farmers prefer mainstream media as a source of information in agricultural development. A total of 200 respondents were chosen from the semi-structured survey by applying the purposive sampling technique. The data was collected from five rural areas of Hyderabad including Hosri, Hatri, Tandojam, Tandohyder, and Tandoqasier (Sindh) Pakistan from 1st June 2022 to 30th June 2022. The data was evaluated by SPSS version 26 and applied regression techniques. The results revealed that Pakistan's mainstream media significantly impacts farmer's agricultural information ($p<0.001$). However, farmers preferred mobile phones, followed by radio and television, for agricultural information. Moreover, the majority of the farmers, on average (42%), 18 to 40, had a primary to secondary level of education. Therefore, they mostly preferred regional radio and television channels for informative agricultural programs, which impacted farmers' perceptions. As a result, this study has suggested a qualitative research approach for determining an in-depth examination of farmers' communication channel preferences.

Keywords: Mainstream Media's Impact, Communication, Farmer's Preferences, Agricultural Information.

Introduction:

The media is usually regarded as one of the most effective tools for conveying information, knowledge, marketing, and advertisements. The dissemination of information via the media is critical to increasing farmers' preferences for technologies and improving agricultural production (Jameel, 2023). Besides this, the Federal Capital Territory of Nigeria has a high agricultural content (94.2%), and the majority of farmers (83.1%) are particularly exposed to agricultural programs for dry season farming (Ben-Enukora, et al., 2023). In South Africa's Eastern Cape Province, 80% of smallholder farmers use media for agriculture (Mdoda et al., 2022). Among Nigerian cassava farmers, media has significant improvements in weed management and agronomy has influenced (Atser et al., 2022). Media channels are essential for spreading agriculture development information (Akhter et al., 2021). In Indonesia, the news media gives less attention towards limited access to cultivated land, resources, and unfavorable trading terms and conditions among young farmers (Toumbourou, et al., 2023). On the other hand, farmers have low levels of familiarity with updated information, and practice of agricultural information, in this regard; media can help them to boost awareness and implementation of information in farming areas (Khan et al., 2020). In the Theni district of India, 87% percent of farmers have ownership of a television set, and just 18% percent preferred to watch agricultural programming on television, beside this, 50% percent of farmers did not find the television as an effective medium for delivering agricultural information (Ravichamy et al., 2020). Furthermore, a lot of farmers feel that agricultural-related programs on television have not been shown, which could improve their revenue (Chhachhar et al., 2012). However, 87% of farmers own a television, and 41% of them like to watch agricultural programming on various TV networks (Makhijani, Chhachhar, 2018). The most efficient communication channel for farmers to share agricultural information is television, followed by the mobile phone, social media (Ahmad et al., 2021) and print media (Shaikh

et al., 2020). Moreover, the majority of farmers prefer newspapers, booklets, pamphlets, extension personnel from pesticide companies, and agricultural partners to obtain relevant information in Pakistan (Khan et al., 2020). The majority of farmers in rural areas still rely on the radio, newspaper, and television for agricultural information (Lwoga, 2010). In addition to this, most cultivators have access to television and radio, but 76% of Nankana farmers prefer brochures, pamphlets, newspapers, representatives of pesticide firms, and other farmers to learn about pertinent topics (Javaid, 2017). In addition to this, print media has a positive impact on disseminating agricultural information among farmers (Seitova, 2014).

Media plays a crucial role in information dissemination, improving farmers' knowledge, and keeping updates about market information (Jannat, 2018). Nonetheless, Ahmed et al. (2021) indicated that the lack of innovative information on agriculture and fewer skills in utilizing information communication tools were the main barriers.

At the global level, the mainstream media has had an enormous impact on farmers' information regarding agricultural production in the slum areas of Hyderabad (Sindh), Pakistan. In slum areas, Sindh province of Pakistan has inadequate research studies in the context of the mainstream media on this issue. To fill this space in the literature, the present study will investigate the mainstream media's impact on the diffusion of agricultural information among farmers.

Hyderabad is a prominent city and district in Pakistan's Sindh province (Population Welfare Department Government of Sindh). In rural areas surrounding Hyderabad, farmers utilize extensive fertile land for agriculture, cultivating a variety of seasonal crops and fruits. The primary crops in these regions include cotton, wheat, sugarcane, rice, corn (maize), oilseeds and millet (Pakistan

Almanac). Generally, farmers gather in a restaurant known as Otaque in the evening to discuss their issues, while others tune in to radio programs and watch television. However, a significant number of farmers prefer listening to someone who read newspaper loudly and provide detailed information to understand, and discuss matters relevant to them (Shaikh et al., 2020).

Therefore, the objectives of the study are to explore:

1. Pakistan's mainstream media has an impact on farmers' information related to agriculture in the country.

2. This study also explored farmers' preferences of mainstream media as a source of information in agricultural development.

Hence, the hypothesis of the study is:

H_1: Pakistan's media significantly affects agricultural-related information among farmers in the rural areas of the country.

This study contributes to the growing body of knowledge about using different means of media to update agricultural information in government organizations. This is especially true in the domain of agricultural information research, which has received insufficient attention, especially in the world where information and communication technologies (ICT) are rapidly growing. Notably, regional data will assess in describe the impact of media on the economic growth of the nation. Finally, the significance of the study is to provide data to the government of Pakistan's agriculture department and the Pakistan Electronic Media Regulatory Authority (PEMRA) to evaluate the media's content related to agriculture for assessment and practices in the current era.

Review of Literature:

Agricultural Development in Pakistan:

Pakistan has launched many agricultural programs, including village agricultural and industrial improvement was the first agricultural program in 1950 (Muhammad, 2005), then the basic democracies system (BDS), People Works Programs (PWP), Integrated Rural Development Program (IRDP), agricultural extension programs, Rural Works Program (RWP), and agricultural-based training extension system launched in Pakistan for the development of rural areas of Pakistan (Ahmad et al., 2021). The economy of Pakistan is heavily dependent on the agriculture industry, which accounts for 18.9 percent of the Gross Domestic Product, and 42.3 percent of employment in the country, whereas during the fiscal year 2021, Pakistan's food import expenditure increased by 53.98 percent to 7.550 billion dollars (Concave AGRI). To fill the gap in domestic output, the government had to import sugar, wheat, palm oil, and legumes. Although Pakistan is capable of producing certain agricultural products, there is not enough to meet domestic demand. Pakistan cannot afford a higher current account deficit due to its severe current account deficit. In 2020, the Pakistani economy faced tremendous hurdles as a consequence of the COVID-19 pandemic (Pakistan Economic Survey, 2020-2021). Furthermore, the report of the Pakistan Economic Survey (2020-2021) found that agriculture provides a living for between 65 and 70 percent of the population. As a result, increasing agricultural productivity needs the application of creative strategies. Agriculture plays a vital role in assessing the financial expansion of the country. Besides this, industries have continued to face several factors, such as inflation, temperature variations, lack of water, climate change, and changes in precipitation patterns (Pakistan Economic Survey, 2020-2021). It is a notable point that the agriculture sector has a lot of potential to grow its share of gross domestic product through the use of

agricultural technologies (Pakistan Economic Survey, 2019-2020). It has been noted in the annual report of Pakistan (2018-2019) that the country still has an underdeveloped sector of the economy, whereas high-performing agriculture is essential to both economic growth and the eradication of poverty. A major factor in the agriculture sector's performance falling short of the desired agriculture production during the past ten years has been the static productivity of crops (Pakistan Economic Survey, 2018-2019). The agriculture of Pakistan is likewise seriously threatened by climate change, which also jeopardizes the nation's access to water and food security. The data shows that Pakistan is producing less of the top crops than the majority of wealthy countries and their rivals, including India and Bangladesh. Similar discrepancies exist in agricultural yields between Pakistan's largest province, Punjab, and other nations (FAO, 2016).

Media as a Source of Information:

The Bangladesh study reveals that 78.8 percent of farmers have been affected by climate change in agriculture, which was significantly improved by the media's programs, news, training, organizational engagement, and cosmopolitan characteristics (Islam et al., 2019). Similarly, Indian farmers rely on and adopt information received via mass media (Yadav et al., 2020). On the other side, an average 52% of farmers were unsatisfied with television's agricultural programs in India (Ravichamy, 2017). In Kerala, Nedumangad's farmers usually depend on traditional media, whereas they have less awareness regarding agriculture information through digital media (Kumar et al., 2017).

In fact, in Nigeria, radio broadcast informative programs for farmers to improve agricultural production, whereas, in some circumstances, there is a gap between farmers' awareness and specialists (Tafida, 2021). Similarly, a newspaper is a part of print media, which plays an essential role in disseminating agricultural information among farmers in district Sindh (Akhter, et al., 2021).

A similar study reveals that print media is an essential part of mass media for spreading awareness among farmers to receive the most recent agricultural information (Rehman, 2010). Another study found the most widely accessible mass media in the region were radio, television, and mobile phones in Imo State, Nigeria (Ani et al., 2015). In addition to this, farmers cannot successfully practice dry-season irrigation farming using the information they get from dry-season agricultural programs in the broadcast media (Ben-Enukora et al., 2023). Overall, it can be seen that mass media has become a reliable and favorable tool for information and communication. The population of farmers has increased while the government has faced the problem of physical training methods. As a consequence of this, the traditional mass media seem to be a better alternative, despite providing face-to-face communication and information.

Research Methodology:

Technique of data collection:

This quantitative study employed a cross-sectional survey method. A questionnaire with closed-ended questions was created. This study included three sections. Section I asks for the demographic profile of the farmers, whereas sections II and III were designed on a five-point measurement of the Likert scale ranging from 1 to 5 (strongly agree to strongly disagree). The primary reason for selecting a limited number of items for the aforementioned constructions is that some of them are used for familiar and comprehensive information that respondents can answer. The survey form language was the native Sindhi language of farmers. Only those farmers, who were actively engaged in agriculture in the rural areas of Tando Jam, Tando Hyder, Tando Qaiser, Hosri, and Hatri in the district of Hyderabad were chosen by convenience sampling. Krejcie and Morgan's (1970) sample size computation was applied in the sampling with n = 200 farmer's sizes. 40 farmers

were selected through sampling from each rural areas of Hyderabad, contributing to a total selected sample size of n-=200. A survey form was designed and distributed among farmers using unprejudiced, unbiased, and simple words so that the respondents could answer easily. The independent variable in the study comprises Pakistan's mainstream media, including television, radio, newspapers and mobile texts, while the dependent variables are farmer's perspectives in the study. The farmers usually sit together at the restaurant (known as 'Otaque' in the Sindhi language) in sampled rural areas of Hyderabad. The researchers visited restaurants (Otaques) theirselves to distribute survey forms among farmers equally. It has been mentioned that the majority of farmers are unable to read properly. Therefore, the researcher asked each farmer a question and filled in the blanks of each question manually. All questionnaires were filled out according to the study with accuracy. The research was carried out from 1st June 2022 to 30th June 2022, and a total of 30 questions were asked of the sampled respondents for accurate evaluation. The survey information was coded, and data was entered into the software Statistical Package for Social Science (SPSS) version 26. The data was examined by applying the techniques of frequency distribution and multiple regression to assess the relationship between various variables in this study.

Results and Discussion:

A descriptive statistical technique for the demographic features of the respondents has been analyzed in Table 1.

Table 1. Respondents' Demographic Characteristics (n= 200)

Variable	Frequency	Percentage
Age		
18-28	11	5.5%
29-39	39	19.5%
> 40	150	75%
Total	200	100%
Respondents Education		
Illiterate	50	25.00%
Primary to Secondary	84	42.00%
Matriculation to above	66	33.00%
Total	200	100%

Ownership of Land		
Personal Land	127	63.50%
Tenant	73	36.50%
Total	200	100%
Income Level		
10,000-14000	75	37.5%
15000-19000	60	30%
≥PKR20,000	65	32.5%
Total	200	100%
Farm Size		
1-10 Acre Land	165	82.50%
11-20 Acre Land	11	5.50%
≥21-30 Acre Land	24	12.00%
Total	200	100%

As can be seen in Table 1, traditionally, female farmers avoid communication with non-familiar people on the farming land. That's why there is no information regarding female farmers in the demographic profile. In terms of literacy, 84 (42%) of farmers have finished primary to secondary school, with 66 (33%) having passed matriculation or higher. It has been revealed that less agricultural yield on land could be attributed to a lack of education. A similar finding was made by Javaid (2017), who discovered that 62% of respondents had only received their primary education, indicating the low education of farmers. Moreover, the majority of farmers have ownership of cultivation land in their rural areas. Regarding the respondents' farm size, most farmers have one to ten acres of farming land and earn up to Rs 21,000 per crop.

Table 2. Mass Media Impact (n=200)

Sources of Media	Frequency	Percentage	Mean	SD
Newspaper	116	58.0	1.705	.939
Television	63	31.5	1.895	.994
Radio	12	6.0	2.055	.999

Mobile SMS Alerts	9	4.5	1.895	.994

Source: Author's Primary Data

It is a notable point that a small number of farmers can read newspapers frequently. Usually, they sit and discuss and solve daily issues in a restaurant called Otaque in the evening. Among them, one educated farmer reads the newspaper and interprets the news, advertisements, and so on. Table 2 highlights that most of the respondents 116 (58.0%) read or listen to newspapers to get information about agriculture, followed by television 63 (31.5 %) and radio 12 (6.0%). The newspaper is the most popular source of information among farmers. Whereas 9 (4.5%) farmers use cell phones to find agricultural information, such as weather forecasting, market price, seasonal cropping, cultivation techniques, and disaster prevention alerts (see Table 2). A similar research study found in the study of Ogunniyi, et al. (2016) reveals that the usage of mobile phones helps farmers earn more money through transactions, and transportation.

Table 3. Summary, Predictors: (Constant)

Variable	**R**	***R²***	**Adj *R²***	**Standard Error of Estimate**	**F**	***Sig.***
Media	.243	.30	.303	.054	19.996	.000*

*p< .05; df = 1, 198

Source: Author's Primary Data

In Table 3, the findings are statistically significant ($p < 0.01$), and with an R square of .30, the regression test has provided a strong inference. Results in Table 3 reveal that 30% of the media's contents about agricultural information have been spread via various channels of mass media. Hence, it is demonstrated as a significant factor in agricultural information ($p < .05$). The results of F-statistics confirm the established hypothesis that Pakistan's media significantly affects agricultural-related information among farmers in the rural areas of the country. The adjusted r-square value is .303. See Table 3 for details.

Table 4. Regression Analysis with Media as a sub-scale of Agricultural Information

β	Variable	*SE*	*B*	*t*	*P*	R^2	*F*	*Sig.*
.592	**Constant**	.204		2.896	.004*			
.177	**Radio**	.053	.222	3.335	.001*			
.064	**Newspapers**	.056	.075	1.136	.257			
.225	**Television**	.053	.281	4.233	.000*	.386	8.518	.000*
.012	**Mobile SMS Alerts**	.053	.015	.224	.823			

*p< .05; df = 1, 195

Source: Author's Primary Data

Table 4 investigates dependent, independent, and moderate factors that are highly significant at p < 0.01 with a 99 percent confidence level. The standardized (beta) coefficient values of radio (β=.177), newspapers (β=.064), and television (β=.225). This means that the independent factors are substantially associated with the dependent

variable, agricultural information. However, the beta value of mobile message alerts (β=.012) appeared significant too. Furthermore, coefficients have been calculated to determine the impact of each factor on the dependent variable. In the structural model, F-statistics have a major value. Overall, the t-test presented a strong association between the variables radio, newspapers, television, and mobile message alerts. See Table 4 for details. Similarly, the study shows that television and radio have played a pivotal role in raising awareness among farmers regarding agriculture growth. A similar study by Shaikh et al. (2020) revealed the significant role of mass media in spreading agricultural information. The study exhibited a sufficient role played by television and radio in the dissemination of information regarding agricultural activities in Sindh, Pakistan.

Conclusion:

It is noteworthy that information on agricultural activities is widely disseminated through Pakistan's mainstream media. The study's findings indicate that television, mobile phones, radio, and newspapers have a sufficient impact on the distribution of agricultural information to farmers. Farmers prefer radio, television, newspapers, and mobile devices to learn about new agricultural information for better production. The results of the regression indicate that 30 percent of the variation in agricultural information has been explained by different sources of media. Hence, it demonstrates a significant factor in agricultural information ($p < .05$) through the multi-regression analysis indicated. Hence, farmers are interested in finding agricultural information while using television, mobile phones, radio, and social media as advanced tools of communication (Ahmad et al., 2021).

Recommendations of the study:

This study will be beneficial for the Pakistan Agricultural Research Council, Government Agriculture Departments, Pakistan Electronic Media Regulatory Authority (PEMRA), and NGOs in reconstructing policies regarding farmers' awareness and preferences. Yet, the recommendations below relate to the effectiveness of mainstream media in the distribution of agricultural information for agricultural growth in the research area.

1) The qualitative research method technique should be applied to conduct an in-depth analysis of farmers' communication channels for further research.

2) Similarly, enhancing knowledge about social media through smartphone is crucial for fostering online.

3) The government and the private sector establish technical centers where farmers can access the latest information and agricultural technologies. These centers should be provided free of charge.

4) To benefit from printed material, the educational levels need to be elevated, and farmers should be encouraged to enhance their education so they can drive advantages from print media.

Future Implications:

Pakistan's farmers express the intention to watch television programs related to agricultural information and technologies as an independent variable. Researchers have concentrated solely on farmers from five known as 'Talkas', including Tando Jam, Tando Hyder, Tando Qaiser, Hosri, and Hatri in the district of Hyderabad. Researchers were unable to gather data from a broader spectrum of farmers residing in the other district of Sindh. Nevertheless, it is

imperative to obtain a large sample size, ensuring a comprehensive exploration that would yield reliable results.

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