Journal of Journalism, Media Science & Creative Arts
ISSN(Print): 2790-9700ISSN(Online):2790-9719
Volume3,Issue1,Page66-81, june30,2023


# Relationship Between Consumption Of Electronic Media And Adoption Of Best Practices In Agriculture Sector Of Central Punjab, Pakistan

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## Abstract

With the invention of electronic media, the methods of communication have changed now electronic media including smartphones have occupied the space of print media. This research study has been sketched to look the relationship amongthe consumption of electronic Media by the farmers of central Punjab region of Punjab Province, Pakistan for agricultural information and adoption of best practices in agriculture by the farmers. A survey was conducted in three districts of central Punjab region by using convenient sampling method. Study a structured questionnaire containing likert type scale has been used for data collection from the targeted respondents of proposed population. Descriptive and inferential analyses were carried out through computer software. Finding of the study revealed that Strong relationship has been found between frequency of electronic media usage, level of agricultural awareness and adoption of recommended practices in agriculture; however, demographic and SES are less effective for adoption of recommended practices.

***Keywords****: Electronic Media, Agricultural Information, Adoption of recommended Practices, Radio, Television, Mobile Phones.*

## Introduction

## Communication in Agriculture

Extension depends on communication a plan for further inspirations. “Communication gives meanings to the information we process” (Leeuwis, 2013). Communication is a course of person to person diffusion of new ideas (Narula, 2006). Communication can be influential and looks for obtaining desired responses to what is being conveyed. Communication could be directive or convincing to different types of changes: disseminating information, creating awareness, and bringing attitudinal and behavioral

ISSN(Print): 2790-9700ISSN(Online):2790-9719
Volume2,Issue2,Page1-14, December31,2022

changes by motivating and educating them, communication is also for providing entertainment (Narula, 2006). There are four main and important purposes of communication: (i) person to person transfer of information, (ii) to transmit the instruction or directives to make the people realize about what is to be done, (iii) to control or influence a person for a specific job, and (iv) to integrate the actions and thoughts of the public to perform special tasks (Sawant, 2006). The communication tools are essential part of communication procedure. A communicator can be a person, organization, group, or another that produce the message and pass on the information via communication channel to the receivers. There are few imperative and essentials that may decide how effective the source is: (i) source's attitude, (ii) source's collection of significant symbols or right symbols depending on audience or receiver, and (iii) source's information regarding the topic on which he is addressing the audience or receiver (Rehman, Muhammad, Ashraf, & Hassan, 2011).

Though, it is acclaimed that Pakistan is an agricultural country but its agriculture sector facing lot of problems and have undergone considerable diversification over the years, yet agriculture is still a large sector of the economy, it contributes 18.5% to Gross Domestic Product (GDP) of the country.

**An Overview of Mass Media in Agriculture**

Agriculture is an old occupation, during past decades the agriculture was only to provide food for a limited population but with the rapid increase of population the agriculture has become more than only food. In this modern era our agriculture needs to adopt research based approaches, practices and products in order to increase per acre yield. Agriculture research institutes along with nongovernmental organizations produce agricultural innovations. Mass media provide relevant information to enable the farming community towards making decision about their farming (Lwoga, 2010). In developing countries, contemporary mass media is playing its role to help agriculture sector through its extension activities. In order to disseminate information, among farmers, agricultural extension department and Directorate General of Agricultural Information utilizes mass media including print and electronic media, for raising awareness regarding appropriate selection of soil, land cultivation, usage of fertilizers, pesticides, weedicides, and irrigation plans to enhance agricultural productivity. However, different communication tools are effective at different levels, for example some of these are effective in raising awareness regarding agriculture and other are effective in adoption of recommended practices in agriculture. Interpersonal communication channel is an efficient source to provide information for the purpose of educating the growers (Ayoade, 2010). However, research findings show that main stream media does not give coverage to agriculture. From different TV channels only "Apna" channel allocated 8.3% air time to agricultural programs (Zia, & Khan, 2012).

**Need Base Agriculture Information**

Gathering thoughts on different cultivating strategy worldwide and connecting

for conclusions. Web-based media stages, for example, Twitter considers sharing information and articles of interest in a snappy simple configuration. Information is a contribution to the cultivating industry, yet not at all like other agrarian data sources like 27 feed and fuel, information can be utilized and re-utilized again and again by countless individuals simultaneously, changed with novel thoughts added to it, so the yield is in a more grounded structure than when it previously showed up (Holmlund and Fulton, 1999). The force of web-based media is that it is available to be shared all around so information isn't covered up in one individual's email inbox or at a gathering with just select participants.

Land cultivation means preparation of soil for crops. This is very first and important activity, selection of appropriate soil and its cultivation for suitable crop has great importance to get increased yield of crop. Effective Use of technology for land cultivation is only possible after seeking its relevant information through various communication channels. The adoption of best quality hybrid seed is also important due to extreme climate change. In these situations farmers a variety of seeds that could cope with the severe weather conditions. Farmers grow different seasonal crops which are suitable with their agri-land and water resources of the area. In order to get much economic benefits farmers use hybrid seeds particularly the farmers of Maize and vegetables are frequently using hybrid seed and increasing their production. BT cotton is also a latest variety of cotton seed which has great resistance against the pests/insects therefore the farmers have given up the old seed and growing BT cotton in order to get financial benefits. State departments of agriculture in collaboration with private sector are also encouraging to adopt new seed varieties so that the crop's productivity could be enhanced. For diffusion such ideas in the agriculture sector of Pakistan, the farmers depend on some communication channels including interpersonal communication.

The use of fertilizers and pesticides is basic and very essential in agriculture of every type. But some crops need pesticides on a large scale for example; cotton is main crop needing a large quantity of pesticides to protect the cotton crop from pests and other sucking insects. Few years ago Pakistan imported a huge range of pesticides but with the passage of time the agricultural researchers invented some varieties of cotton seed (BT Cotton) which have some resistance against the pests, on the other hand; pest management system was introduced by the agriculture departments. Now farmers are growing new varieties of cotton and other crops which have potential to protect themselves from pests/insects. Similarly the new varieties of sugarcane, wheat and rice have been adopted by the formers to decrease the usage of pesticides.

In the presence of Digital Media farmers of Pakistan may be benefitted with the use of social media for agricultural information.

ISSN(Print): 2790-9700ISSN(Online):2790-9719
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## Adoption of Best Practices in Agriculture

In this study, the adoption of best practices (ARP) refers to research based practices recommended by the agriculture departments on different occasions for the betterment of agriculture and increased productivity. These practices are included preparation of land, selection of seeds, use of fertilizers and use of pesticides for Rabi (winter) and Kharif (summer) crops. Main Rabi (winter) crops are sugarcane, wheat and vegetables whereas, Kharif (summer) crops are cotton, maize and rice. Some important recommended practices in agriculture are briefly discussed below:

### Significance of the Study

In agriculture sector, information is very crucial for farmers to know about the latest trends in farming, seed quality, productivity and modernization in the field of agriculture. As agriculture system becomes more and more complex, farmers need information timely and precisely. Farmers' involvement in information search became very important concern for further development in national economy, growth and competition and success in their farm businesses in developing countries (Diekmann, 2009).

This Study will find out the role of social media in disseminating information in agriculture sector. Social media has the capability to address the current and future agricultural problems and to help the farmers to solve their problems and increase yield productivity. Therefore, the present research is specifically designed to address the role of Social Media in diffusion of information and farming technologies and farming practices to address the emerging challenges faced in agriculture sector at national level. The current research will fulfill the research gap by addressing the efficacy of social media for adoption of best farm practices.

### Objectives of the Study

Major objectives of the study are;

- To measure the consumption of electronic media for agriculture purpose by the farmers of central Punjab region of Punjab province, Pakistan.
- To find out the relationship between consumption of electronic media and level of agricultural information obtained by the farmers;
- To find out the relationship between consumption of electronic media by the farmers and adoption of farm practices.

## Research Questions of the Study

1. To what extent farmers do use electronic media for agriculture purpose?
2. What is the level of relationship between consumption of electronic media and level of agricultural information obtained by the farmers?
3. What is the level of relationship between agricultural information obtained by the farmers and adoption of farm practices?

## Hypothesis of the Study

**H-1** Greater the use of social media greater is the level of awareness among farmers.

**H-2** There is relationship between agricultural information obtained by the farmers and adoption of farm practices.

### Literature Review

Agriculture growth is the key to economic development of Pakistan. International researches identified the effectiveness of Social Media in agriculture field but there is no remarkable research work available in Pakistan in the field of mass media particularly Social Media and agriculture therefore this research is required to know and predict the phenomenon particularly, from Pakistani settings. Communication tools play an integral part in any field of human life. Pakistan's economy largely depends on agriculture as it contribute more than 19% to GDP of Pakistan and 42% labour force is also engaged with agriculture sector (Pakistan, 2020). In this modern the agriculture research departments and other marketing companies share relevant information through social media alongwith conventional media for dissemination of agricultural information. Relevant information is one from the most significant assets in agricultural progression (Carter, 1999).

Relevant information encourages the agrarian to choose and taking proper activities for advancement of natural cultivating and showcasing reason (Stefano, et al., 2005). Presently, in this period of media and relevant information innovation, the dispersion of relevant information have become turns out to be a lot simpler yet progressively mind boggling, it must be flowed to the agriculturist in the way for utilizing fitting technique, and incredible backings to its collectors (Cartmell, et al., 2004).

According to Demiryurek, et al. (2008) agricultural information affects agricultural productivity in many ways: firstly it can be helping out the farmers to take decisions regarding land, labor, and livestock and secondly, agricultural production may be enhanced by obtaining relevant, useful, and trustworthy information for agricultural betterment, information may be transmitted in many ways, including verbal, printed material and electronic medium. Stefano, et al. (2005) found that farmers did not use the information regarding better farming practices and techniques along with marketing due to either unclear or if no access to that information. She further added in rural areas the distance (like diversity of cultures and language) between the farmer and the researcher

ISSN(Print): 2790-9700ISSN(Online):2790-9719
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was even wider to separate researcher from farmer . Studies are showing the farmers use social media for seeking agricultural information; however the effectiveness of social media in agriculture sector is to be explored. Online media are electronic devices of electronic correspondence that permit clients to actually collaborate with others separately or in gatherings for the motivations behind trading data, imparting contemplations and insights, affecting and encouraging dynamic by making, putting away, recovering and trading data in any structure (text, pictures, video, and so forth,) by anybody in the virtual world (Suchiradipta and Saravanan, 2016). These are computerized networks that are utilized to share and examine client created data - assessment, video, sound, and mixed media (Andres and Woodard, 2013). Ranchers need to get information respected new innovation and arrive at great qualities about quality creation as indicated by the interest from the opposite end. This all relies on employable dissemination of current innovation in the midst of the end clients ranchers (Farooq et al., 2007). Web-based media likewise gives answers for various agrarian issues. Online media is principally used to part information and make information. The most well known web-based media stages among ranchers are Facebook, YouTube and WhatsApp. Balkrishna and Deshmukh (2017). There is wide contrast between online media and old-style media. Web-based media clients produce their own gatherings, pages, local area and online journals to scatter realities. In these stages they likewise sell, buy cultivating products. It additionally empowers the advancement of ranchers' items and of organization improvement Balkrishna and Anand (2007)". Farming and web-based media goes connected at the hip. Web-based media is the spot of plan and horticulture is the matter. Web-based media offers agriculturalists and rustic enterprises an articulation and offers imperative cooperating possibilities for consistent two-way correspondence (Thakur and Chander, 2018). New media and innovation is mindful in the social change of the world particularly in youth (Zia, et al. 2017).

**Theoretical Framework**

Diffusion of Innovation is the theatrical framework applied to this this study When members of society are exposed to a certain kind of information which is new and innovative through a specific medium or channel it refers as diffusion of innovation .A specialized communication strategy that involves new idea and innovative techniques (Rogers, 1995, p. 5)

**Research Methodology**

The research method adopted for this study is quantitative survey by using structured questionnaire through convenient sampling method from targeted areas.

**Population**

Population is a set of cases in which the study is interested, also called ‘universe' (Rehman, et al., 2013). Farmers of central Punjab region of Punjab Province, Pakistan who are involved in agriculture since more than 5 years were population of this particular research study.This particular research study is generally aims to investigate the consumption of electronic Media for disseminating agricultural information and adoption of recommended practices in agriculture sector of Pakistan by the farmers.

**Sample**

Farmers of central Punjab region of Punjab Province, Pakistan who are involved in agriculture since more than 5 years were selected using purposive sampling technique of this particular research study..

**SampleSize**

342 farmers were selected as the sample size of this specific research study.

**Data Collection**

Data was collected through self developed and pretested questionaries

**Data Analysis**

Quantitative data was analyzed by using SPSS statistical software used for quantitative data.

**Data Tabulation and Analysis**

This research study is based on survey technique to explore and investigate the psychological effects of TikTok social media application on youth of Hazara University. The data was collected according to the objectives of the study and analyzed by using SPSS statistical software.

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Table 1: Descriptive Statistics and Reliability Coefficients for Study Variables

| *Scales* | *α* | *K* | *M* | *SD* | *Range* | |
|---|---|---|---|---|---|---|
| | | | | | **Potential** | **Actual** |
| ElectronicMedia foragricultural information | .91 | 12 | 38.13 | 9.06 | 12-60 | 12-60 |
| Adoption of recommended practices in agriculture | .88 | 12 | 45.16 | 7.13 | 12-60 | 16-60 |

Note:α= reliability coefficient, k= no. of items in scale and subscale

Table-1 is showing the properties of questionnaire. Data collection instrument contains one Demographic Information Sheet and five pointlikert scale according to indigenous interpretations. There were two different scales regarding information seeking from electronic media and adoption of recommended practices in agriculture. Each scale contains twelve items and Crownbach alpha reliability coefficient of scale regarding agricultural information obtained via electronic media and its reliability $a$=.91; whereas, the forth scale was about adoption of recommended practices in agriculture and its reliability score was $a$=.88. The Cronbach Alpha Coefficient of scales should be above 0.7 to make it acceptable (Santos, 1999).

Above table also indicates the mean score of each scale. The potential score of each scale was 12-60 however, the actual score for information obtained electronic media remained in the range of 12-60 whereas, range score regarding adoption of recommended practices remained 16-60.

Table 2: Socioeconomic Status of the Respondents

| CATEGORIES | VALUES | Mean | Standard Deviation | Responses Frequency | Percentage (%) |
|---|---|---|---|---|---|
| **Age Group of Respondents** | | | | | |
| | 30-40 Years | | | 210 | 61.4% |
| | 41-50 | | | 91 | 26.6% |
| | 51-60 | | | 31 | 09.1% |
| | 61-70 | | | 10 | 02.9% |
| **Farming Experience** | | | | | |
| | 05-15 years | | | 228 | 66.7% |
| | 16-25 | | | 80 | 23.4% |
| | 26-35 | | | 20 | 05.8% |
| | 36 and above | | | 14 | 04.1% |
| **Status of Farmer** | | | | | |
| | Owner | | | 232 | 67.8% |
| | Tenant | | | 030 | 08.8% |
| | Owner and Tenant | | | 074 | 21.6% |
| | Partnership | | | 006 | 01.8.% |
| **Availability of Canal Water** | | | | | |
| | Whole Year | | | 147 | 43.0% |
| | Six Months | | | 148 | 43.3% |
| | Not | | | 047 | 13.7% |
| **Condition of Groundwater** | | | | | |
| | Plain Water | | | 235 | 68.7% |
| | Salted Water | | | 107 | 31.3% |
| **Farms' Land Size** | | | | | |
| | 05-15 Acres | | | | |
| | 16-25 | | | 312 | 91.2% |
| | 26-35 | | | 022 | 06.4% |
| | 36 and above | | | 002 | 00.6% |
| | | | | 006 | 02.6% |
| **Education** | | | | | |

ISSN(Print): 2790-9700ISSN(Online):2790-9719
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| **Level of Respondents** | | | |
|---|---|---|---|
| | Primary | 81 | 23.7% |
| | Middle | 109 | 31.9% |
| | SSC | 105 | 30.7% |
| | Intermediate | 038 | 11.1% |
| | Graduation and Above | 09 | 02.6% |
| **Annual Income Level of Respondents in PKRs** | | | |
| | 00,000-100,000 | 60 | 17.5% |
| | 101,000-200,000 | 66 | 19.3% |
| | 201,000-300,000 | 46 | 13.5% |
| | 301,000-400,000 | 34 | 09.9% |
| | 401,000-500,000 | 34 | 09.9% |
| | 501,000and Above | 102 | 29.8% |

Table 3: Frequency of Electronic Media Usage

| **CATEGORIES** | **VALUES** | **Mean** | **Standard Deviation** | **Responses Frequency** | **Percentage (%)** |
|---|---|---|---|---|---|
| **Watching Television** | | 2.62 | 0.89 | | |
| | Very Low | | | 039 | 11.4 |
| | Low | | | 109 | 31.9 |
| | Medium | | | 138 | 40.4 |
| | High | | | 55 | 16.1 |
| | Very High | | | 001 | 00.3 |
| **Listening Radio** | | 1.53 | .76 | | |
| | Very Low | | | 208 | 60.8 |
| | Low | | | 099 | 28.9 |
| | Medium | | | 025 | 07.3 |
| | High | | | 009 | 02.6 |
| | Very High | | | 001 | 00.3 |
| **Usage of Mobile Phone** | | 2.42 | 1.0 | | |

| | | | |
|---|---|---|---|
| | Very Low | 068 | 19.9 |
| | Low | 127 | 37.1 |
| | Medium | 85 | 24.9 |
| | High | 61 | 17.8 |
| | Very High | 01 | 00.3 |

Table 4: Relationship between Variables

| | Variables | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|---|
| 1 | **Land Farm Size of Respondents** | -- | -.002 | -.114* | -.094 | -.011 | .012 |
| 2 | **Education Level of Respondents** | -.002 | -- | .057 | .187** | .356** | .259-- |
| 3 | **Annual Income of Respondents** | -.114* | .057 | -- | .265** | .241** | .021 |
| 4 | **Frequency/Usage of Electronic Media** | -194 | .187** | .265** | -- | .521** | .186** |
| 5 | **Level in Awareness** | -.011 | .356** | .241** | .521** | -- | .494** |
| 6 | **Adoption of Recommended Practices** | .012 | .259** | .021 | .186** | .494** | -- |

*. Correlation is significant at the 0.05 level (2-tailed).
**. Correlation is significant at the 0.01 level (2-tailed).

ISSN(Print): 2790-9700ISSN(Online):2790-9719
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**Discussion**

Age of the audience has great importance in agriculture, media using habit and adoption of innovation in any field of life; therefore, age of the respondents has been inquired which is showing that majority of the respondent farmers (61.4%) belongs to the age group of 30-40 years followed by the group belongs to 41-50 years ole formers (26.6%). Working experience of human being is of prime importance, similarly in agriculture sector the experienced farmers are more likely to accept innovation and best practices in their farming exercise. Farming experience is concerned, 66.7% famers have 5-15 years of agri-farming experience followed by 23.4% having experience of 16-25 years. Socio-Economic Status (SES) of the human being play vital role in consumption of mass media and adoption of recommended practices in agriculture by the farmers owing the land farm in a bigger size may have positive relationship between. Data shows that 91.2% own 5-15 acres land for farming purpose and followed by 06.4% having 16-25 acre land farm. Studies showed that Education level of the respondents played important role in seeking desired and need base information by the respondents therefore education level of the targeted respondents was inquire and is indicated in Table 2.

Annual income of the respondents is prime component of SES which has its importance in accepting and adopting innovation. The purpose of this study is to find out the role of electronic media in creating awareness among famers of central Punjab region in agriculture sector. Data showed that 29.8 respondents have annual income more than Rs. 500,000/- followed by 19.3% respondents with the annual income level of Rs. 100,000/- to Rs.200,000/-

Just like other audience, farmers also follow electronic media for as info-entertainment purpose. Farmers obtain desired agricultural information for awareness about agriculture. Agricultural Information Directorate in collaboration of stakeholder use mass media for disseminating agricultural-information amongst farmers.

Table-3 shows the frequency electronic media using by the farmers/respondents. Accordingly, it has been depicted that frequency of watching television of farmers is M=2.62 out of five which is average score. The respondents were asked to tick one option from the given five options. Accordingly, 11.4% opted “Very Low” while 31.9% respondents have opted to watch television with “Low”, whereas, 40.4% respondents opted “Medium”

and 16.1% respondents opted “High” and only 0.3% respondent marked that they watch television “Very High”. Data also shows the frequency listening radio by the farmers/respondents. Accordingly, it has been depicted that frequency of watching television of farmers is M=1.53 out of five which is below average score. The respondents were asked to tick one option from the given five options. Accordingly, 60.8% opted “Very Low” while 28.9% respondents have opted to listen radio with “Low”, whereas,i.e 07.3% respondents opted “Medium” and 02.6% respondents opted “High” and only 0.3% respondent marked that they listened “Very High”.Findings are in line with Haider (2015) that the “radiois the finest source of communication disseminating usefulinformation about farm-practices

Data also shows the frequency listening radio by the farmers/respondents. Accordingly, it has been depicted that usage frequency of mobile phones by farmers is M=2.42 out of five which is also below average score. The respondents were asked to tick one option from the given five options. Accordingly, 19.9% has opted “Very Low” while 37.1% respondents have opted to use mobile phones with “Low”, frequency whereas, 24.9% respondents opted “Medium” and 17.8% respondents opted “High” and only 0.3% respondent marked that they listened “Very High”.

Finding showed the negative relationship of -0.94 between farm land size of the respondents and frequency of using electronic media by the respondents, significant relationship of .187** between education level of the respondents and frequency of using electronic media by the respondents, and relationship of .265** between annual income level of the respondents and frequency of using electronic media by them is recorded.

Finding showed the negativerelationship of -0.11 between farm land size of the respondents and level of information obtainedby the respondents, significant relationship of .356** between education level of the respondents and information obtainedby the respondents, and relationship of .241** between annual income level of the respondents and information obtainedby the respondents was recordedFinding also depicted the weak relationship of 0.12 between farm land size of the respondents and adoption of recommended practices by the respondents, significant relationship of .259** between education level of the respondents and information obtainedby the respondents, and weak relationship of .21 between annual income level of the respondents and information obtainedby the respondents was recorded.

ISSN(Print): 2790-9700ISSN(Online):2790-9719
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Finding also depicted the weak relationship of 0.521** between Frequency of using electronic media bythe respondents and information obtainedby the respondents, significant relationship of .186** between Frequency of using electronic media bythe respondents and adoption of recommended practices by the respondents. Whereas, significant relationship at the level 0.494** between information obtained through electronic media and adoption of recommended practices has been recorded. According to Demiryurek, et al. (2008) agricultural information affects agricultural productivity in many ways. Web-based media likewise gives answers for various agrarian issues. Online media is principally used to part information and make information. The most well known web-based media stages among ranchers are Facebook, YouTube and WhatsApp. Balkrishna and Deshmukh (2017).New media and innovation is mindful in the social change of the world particularly in youth (Zia, et al. 2017).

## Conclusion

Findings of the research revealed that there are variations in frequency and usage of different tools of electronic media, whereas these tools are effective at different stages of disseminating agricultural information. It is observed that multiplicity of channels are playing an integral role in communication strategies in agriculture sector of Pakistan Strong relationship has been found between frequency of electronic media usage, level of agricultural awareness and adoption of recommended practices in agriculture; however, demographic and SES are less effective for adoption of recommended practices.

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