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RELATIONSHIP BETWEEN SOCIAL MEDIA USE AND LEVEL OF AGRICULTURAL INFORMATION AMONG FARMERS OF PUNJAB PROVINCE, PAKISTAN

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ABSTRACT

With the invention of new media, the methods of communication have changed. Now, social media, including Facebook, Twitter and YouTube, have occupied the space of mainstream media. This research study has been sketched to explore the Frequency and patterns of social media, including Facebook and YouTube, used by farmers in the Punjab Province, Pakistan. The Study belongs to the positivist approach of research philosophy, whereas the theoretical perspective of this research study is related to the diffusion of innovation theory of mass communication. In order to find out the role of Social Media, including Facebook and YouTube, for agricultural information, a structured questionnaire containing a Likert-type scale was used for data collection from the targeted population through purposive sampling, and empirical data was collected from *N=275* farmers. Descriptive and inferential analyses will be applied through computer software SPSS version 25. The findings of the Study reveal the positive relationship between using social media and the level of Agricultural information/awareness among the respondents; however, respondents used social media with different patterns, which may imply agriculture extension departments, agriculture marketing companies and media organizations to make their policies in the future.

Keywords: Social Media, Facebook, Youtube, Farmers, Agricultural Information and Awareness.

Introduction

Communication

Communication is a course of person-to-person diffusion of new ideas (Narula, 2006). Communication can be described as a process through which people can exchange information, opinion, knowledge and ideas" (Leeuwis, 2013). There are some significant purposes of communication with someone: (i) transfer of information from one person to another, (ii) to transmit the instruction or directives to make the people realize what is to be done, (iii) to control or influence a person for a specific job, and (iv) to combine the actions and opinions of the public to perform special tasks (Sawant, 2006). The communication tools are an essential part of the communication procedure. A communicator can be a person, organization, group, or

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another that produces the message and passes on the information via an effective medium to the receivers. Some crucial requirements may decide how effective the sender is: (i) the sender's attitude, (ii) the sender's collection of symbols or right symbols depending on the audience or receiver's level of understanding, (iii) the sender's information or understanding about the topic on which he is communicating with the target audience or receiver (Rehman, Muhammad, Ashraf, & Hassan, 2011).

There are numerous correspondence sources, including print media, electronic media and Social Media, including Facebook, YouTube, and WhatsApp. To build yield rate, farming examination offices consistently stay in interaction to develop a new assortment of harvest seeds to be developed. These agriculturists have, as of late, presented some specialized devices for bringing issues to light on composts, pesticides, weedicides, innovation/technologies for land development and the most recent water system framework in relationship with nearby and global associations. These developments are moved among ranchers through different correspondence vehicles. Kuria (2014) narrated that Social Media and web-based technologies proved very beneficial and achieved considerable knowledge for the majority of the farmers who used social media applications in their farming fields and obtaining information with a positive frame of mind (Balkrishna and Deshmukh, 2017).

Agriculture of Pakistan

Though it is acclaimed that Pakistan is an agricultural country, its agriculture sector faces a lot of problems and has undertaken great diversity over the years. Yet, agriculture plays a significant role in the economy, and a large number of the labor force is engaged in the agriculture sector. The agriculture sector directly brackets the country's population, recruits a labor workforce, and comes up with a large share of foreign exchange earnings. The majority of the country is dependent on agriculture for its livelihood; it offers 18.5% of the Gross Domestic Product (GDP) of the country. Agriculture is giving many labor opportunities to the inhabitants of the country. 38.5% of its labor force is engaged in the agriculture sector (Government of Pakistan, 2019). This valuable information is necessary to learn about new ideas, tactics, and inventions in the field of agriculture through effective communication channels. Consequently, an effective communication strategy is needed to cope with these challenges by using technological inventions in the agriculture sector. Farmers' communities are encouraged to allocate more land and water resources for agricultural use, and farmers are also educated to adopt social media for agricultural information.

Social Media Spectrum in Pakistan

Social media users in Pakistan actively use the short message system (SMS), WhatsApp, Facebook, Twitter, YouTube, Instagram, Snapchat, and blogs. According to a January 2023 report by Digital Pakistan, there are 71 million active Internet users, which is roughly 30 percent of the population. Social media is gaining momentum as more people rely on it as a news source. Pakistan's weak internet infrastructure, lack of local content, and language barriers (social media continues to be English-heavy) previously limited the growth of social media. However, as the national 4G cellular network becomes the norm, social

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media use is rapidly increasing even in rural areas, as mobile phone users are increasingly able to access the Internet and various social networking sites. The top social media site in Pakistan is Facebook. Kaplan and Haenlein (2009) characterized web-based media as "a tool of a gathering of Internet applications that form with respect to the philosophical and mechanical establishments of Web 2.0 and that allows the "creation and trade of client produced content."

Facebook

Facebook is the world's most mainstream long-range informal communication site, as it makes it easy to associate with loved ones and offers pictures, sites, and recordings. It permits clients to make a profile, add companions, send messages and join regular vested parties. There are many pages and public groups joined by agriculturists, and these groups are managed by different individuals, which are the source of agricultural information for other agriculturists.

YouTube

YouTube is a platform where many experts share videos containing information on different topics and areas, including agriculture.

Need Base Agriculture Information

Gathering thoughts on different cultivating strategies 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; information can be utilized and re-used again by countless individuals simultaneously, changed with new thoughts, so the yield is in a more grounded structure than previously showed up (Holmlund and Fulton, 1999). The power of web-based media can be analyzed in that it has fantastic reach and is cost-effective, so information isn't covered up in only one individual's inbox or at a gathering with just a selected number of participants.

Land cultivation means the preparation of soil for crops. This is the very first and most important activity; the selection of appropriate soil and its cultivation for suitable crops is of great importance to get an increased yield for a crop. Effective Use of technology for land cultivation is only possible after seeking relevant information through various communication channels. The adoption of the best quality hybrid seed is also important due to extreme climate change. In these situations, farmers have a variety of seeds that can help them cope with severe weather conditions. Farmers grow different seasonal crops that are suitable for their agri-land and water resources of the area. In order to get many economic benefits, farmers use hybrid seeds, particularly the farmers of maize and vegetables, frequently using hybrid seeds and increasing their production. BT cotton is also the latest variety of cotton seed, which has great resistance against pests/insects; therefore, the farmers have given up the old seed and grown BT cotton in order to get financial benefits. State departments of agriculture, in collaboration with the private sector, are also encouraging the adoption of new seed varieties so that the crop's productivity can be enhanced. For the diffusion of 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. However, some crops need pesticides on a large scale. For example, cotton is the main crop needing a large quantity of pesticides to protect the cotton crop from pests and other sucking insects.

Rationale

Growth in agriculture is key to Pakistan's socioeconomic development. International research identified the effectiveness of Social Media in the 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.

The role and effectiveness of social media, including Facebook and YouTube, for seeking agricultural information and information in the agriculture sector of Pakistan should be explored in order to gain a better understanding of the farmers use Social Media including Facebook and YouTube for seeking relevant, helpful information regarding their agricultural activities. In the 21st century, farmers prefer to use social media technology for their crop production and growth. In rural areas, internet services have increased due to widespread population. The most in-demand social media platforms for farmers are Facebook, YouTube and WhatsApp. (Balkrishna & Deshmukh (2017) as cited in Latif et al., (2020).

Problem Statement

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

In Pakistan, farmers are facing many issues in real agricultural settings. These issues are because of their illiteracy, less use of ICTS, lack of proper funding, lack of media awareness, improper transportation and poverty. These are the hurdles in accessing agricultural information at the national level (Yaseen et al., 2015). The physical boundaries and lack of personal contacts and devices are creating issues in the agricultural sector. In this context, the use of mass media and social media seems significantly significant. Numerous studies have been conducted by scholars that show that social media provides a platform for farmers to raise their voices and discuss their issues on this digital platform. The study arranged by Ndyetabula and Legg (2011), cited in Aldosari (2019), stated that smartphone technology-based features were used to spread agricultural awareness during times of crisis and emergency. A great number of farmers benefited from mobile-based content, including SMS and emails, but only those who were deprived of information because they did not have mobile phones. Mobile phones have effectively shared the transfer of knowledge about agricultural information (Chhachhar et al., 2014, as cited in Aldosari, 2019).

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This study will determine the role of social media in disseminating information in the agriculture sector. Social media can address current and future agricultural problems to help farmers solve their problems and increase yield productivity. Therefore, this research is specifically designed to address the role of social media in the diffusion of information, farming technologies, and farming practices to address the emerging challenges faced by the agriculture sector at a national level. The current research will fill the research gap by addressing the efficacy of social media for the adoption of best farm practices in Pakistan.

Research Questions

- To what extent do farmers use social media for agricultural purposes?
- What are the farmers' patterns of using social media?
- To what extent does social media create agricultural awareness amongst farmers?

Objectives of the Study

The Study has the following objectives;

1. To measure the consumption of different social media platforms (Facebook and YouTube) for agricultural information.
2. To examine the relationship between the consumption of social media and the level of agricultural awareness amongst farmers.

Theoretical Framework

Different types of theories are used in communication studies. Still, the use and gratification theory is found to be the most suitable for this research, so this theory is a facilitator of research work. Uses & gratification is a framework that is used in media research to identify the mental desires of people to satisfy them. The uses and gratifications theory discusses why and how people use the media to satisfy their needs. It is an audience-focused approach (Blumler,1974). This theory describes that people select media through which they get all information and knowledge according to their usage, and the media gratifies their needs. However, in the age of digital technology, youth are more likely to practice specific new media platforms to get information, which leads them to mental health issues. Social media's role during the COVID-19 pandemic situation among the people is imperative. Uses and Gratification theory outlines the frameworks for this Study because audiences are active and try to find media according to their needs. They only use media that is familiar to them.

Literature Review

Relevant information encourages the agrarian to choose and take proper activities for the 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 has turned out to be a lot simpler yet progressively mind-boggling. It must have flowed to the agriculturist in the way for

utilizing the 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: first of all, it can be beneficial for the farmers to take steps regarding land, labor, and livestock, and after that, agricultural production may be enhanced by obtaining relevant, useful, and trustworthy knowledge for agricultural betterment, information may be transmitted in many ways, including oral, written 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 no access to that information. She further adds, "In rural areas, there is a great division of language and culture in people, and it creates a gap between the farmer and the researcher (Stefano et al., 2005). Studies show that agricultural information is disseminated via social media; however, the effectiveness of social media in the agriculture sector needs to be explored. Online media are electronic devices of electronic correspondence that allow clients to actually unite with others separately or in online communities for the motivations behind data, imparting contemplations and insights, encouraging, recovering and getting data in any mode(text, pictures, video, and so forth,) by anybody in the virtual world (Suchiradipta and Saravanan, 2016). These are computerized web-based tools that are utilized to allocate and examine client-created data, such as assessment, video, sound, and mixed media (Andres and Woodard, 2013). Merriam-Webster (2015) characterizes web-based tools as types of electronic correspondence through which clients can make digital networks to share data, ideas, individual texts and other substances. Ranchers need to get information about respecting innovations and arriving at great qualities in quality creation as indicated by the interest of 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 agricultural issues. Online media is principally used to part information and make information. The most in-demand web-based media tools among farmers are Facebook, YouTube and WhatsApp (Balkrishna and Deshmukh, 2017). There is a wide contrast between online media and old-style media. Web-based media clients produce their gatherings, pages, local areas and online journals to scatter realities. In these stages, they likewise sell and buy cultivating products. It additionally empowers the advancement of ranchers' items and organization improvement Balkrishna and Anand (2007)".

Farming and web-based media are connected at the hip. Web-based media is the spot of the 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 are mindful of the social change of the world, particularly in youth (Zia et al. 2017). Online media is fundamentally computerized innovations that encourage the correspondence of client-produced content through consistent cooperation (Terry, 2009; Kaplan and Haenlein, 2010). The openness of online media through cell phones and correspondence made it a famous stage for the majority to share thoughts and create linkage across various stages. Web-based media offers enormous freedom to investigate rural augmentation administration conveyance. Regardless, its use and successful incorporation into the

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augmentation framework represent various difficulties. In a position paper of the Global Forum for Rural Advisory Services (GFRAS) labeled the "New Extensions," Sulaiman and In accordance with that, various explores that incorporate Kipkurgat et al. (2016), Kuria (2014) and Suchiradipta & Saravanan (2016) examined a few difficulties in the utilization of online media for farming augmentation administration conveyance. Consequently, an examination of the worldwide difficulties is introduced below:

Method and Material

This particular research study generally aims to investigate the consumption of social media by farmers to disseminate agricultural information in the agriculture sector of Pakistan. The research method adopted for this Study is a quantitative survey using a structured questionnaire through a purposive sampling method from targeted areas.

Population is a set of cases in which the Study is interested, also called 'universe' (Rehman et al., 2013). The South Punjab region of Punjab Province, Pakistan, is predominantly an agricultural area, and almost all of Pakistan's main crops are grown in this area. In contrast, a multi-cropping system is also experienced in the South Punjab region. Therefore, the *N=250* farmers/individuals involved in agriculture for more than 5 years were approached personally to collect empirical data for this research study.

Data Collection and Analysis

Data Collection Procedure

The researcher contacted the respondents personally to collect the relevant data for this study through a closed-ended questionnaire in June 2024.

Table 1: Descriptive Statistics and Reliability Coefficients for Study Variables

Scales	α	K	Range	
			Potential	Actual
Facebook as a source of agricultural information	0.83	6	6-30	6-30
YouTube as a source of agricultural information	0.86	6	6-30	6-30
Level of Agricultural Information	0.81	10	10-50	10-50

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

Table 1 shows the properties of the questionnaire. The data collection instrument contains one Demographic Information Sheet and a point Likert scale according to Indigenous interpretations. There were two different scales regarding information seeking from different Social Media Tools and agricultural information. Each scale contains ten items, and the Cronbach alpha reliability coefficient of scale regarding agricultural information obtained via Facebook is *a=0*.83. In contrast, the reliability of the scale for information via YouTube is *a=0*.86.

Table 2: Socioeconomic Status of the Respondents

Variables	Mean	Standard Deviation	Frequency	Percentage (%)
Age Group of Respondents				
30-40 Years	--	--	91	33.1
41-50	--	--	115	41.8
51-60	--	--	42	15.3
61-70	--	--	27	9.8
Farming Experience				
05-15 years	--	--	98	35.6
16-25	--	--	116	42.2
26-35	--	--	39	14.2
36 and above	--	--	22	0.80
Farms' Land Size (In Acre)	5.29	2.94	--	--
Annual Income Level of Respondents in PKRs				
00,000-100,000	--	--	06	02.19
101,000-200,000	--	--	35	12.72
201,000-300,000	--	--	49	17.82
301,000-400,000	--	--	55	20.00
401,000-500,000	--	--	44	16.00
501,000and Above	--	--	86	31.27
Preferred Device for using Social Media				
Desktop	--		00	00.0
Laptop	--		28	10.2
Smart Phone	--		247	89.8

Table 2 presents the socioeconomic status of the respondents. The age groups of the respondents were distributed as follows: 91 respondents (33.1%) were aged 30-40 years, 115 (41.8%) were aged 41-50 years, 42 (15.3%) were aged 51-60 years, and 27 (9.8%) were aged 61-70 years. In terms of farming experience, 98 respondents (35.6%) had 5-15 years of experience, 116 (42.2%) had 16-25 years, 39 (14.2%) had 26-35 years, and 22 (8.0%) had 36 years and above. The mean farm land size was 5.29 acres with a standard deviation of 2.94 acres. Regarding annual income levels in Pakistani Rupees (PKRs), 6 respondents (2.19%) earned between 0-100,000 PKRs, 35 (12.72%) earned 101,000-200,000 PKRs, 49 (17.82%) earned 201,000-300,000 PKRs, 55 (20.00%) earned 301,000-400,000 PKRs, 44 (16.00%) earned 401,000-500,000 PKRs, and 86 (31.27%) earned 501,000 PKRs and above. In terms of preferred devices for using social media, 0 respondents (0.0%) preferred desktops, 28 (10.2%) preferred laptops, and 247 (89.8%) preferred smartphones

Table 3: Frequency of Using Social Media

Variable	Mean	Standard Deviation	Range	
			Lowest	Highest
Daily based Frequency of Using Facebook (in minutes)	46.79	21.42	10	120
Daily based Frequency Using YouTube (in minutes)	43.19	20.39	10	120

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Table 3 illustrates the frequency of social media use among respondents, focusing on Facebook and YouTube. The average daily time spent on Facebook was 46.79 minutes, with a standard deviation of 21.42 minutes, ranging from a minimum of 10 minutes to a maximum of 120 minutes per day. Similarly, the average daily time spent on YouTube was 43.19 minutes, with a standard deviation of 20.39 minutes, also ranging from 10 to 120 minutes per day.

Table 4: Need base information through Social Media

Sr. No.	Variables	Strongly Disagreed	Disagreed	Neutral	Agreed	Strongly Agreed
1	Using Facebook for information regarding Agricultural Technology	46	48	77	62	62
2	Using Facebook for information regarding Seeds	10	16	87	82	80
3	Using Facebook for information regarding Fertilizers	50	56	62	57	50
4	Using Facebook for information regarding Pesticides	23	35	74	67	76
5	Use Facebook for information regarding weather Updates	10	16	89	79	81
6	Using Facebook for information regarding the Market and Rates	50	56	62	55	52
7	Using Youtube for information regarding Agricultural Technology	10	16	87	83	79
8	Use YouTube for information regarding Seeds	50	56	60	56	51
9	Use YouTube for information regarding Fertilizers	124	53	36	31	31
10	Use YouTube for information regarding Pesticides	92	43	65	32	37
11	Using Youtube for information regarding weather Updates	124	53	36	30	32
12	Using Youtube for information regarding the Market and Rates	119	53	52	24	27

Table 4 provides insights into the respondents' use of social media for agricultural information. The data shows varied levels of agreement on using Facebook and YouTube for different agricultural needs. Notably, 62 respondents strongly agreed on using Facebook for agricultural technology, while 80 strongly agreed on using it for seed information. YouTube saw 79 respondents strongly agreeing to use it for agricultural technology, but only 27 strongly agreed on using it for market and rate information. Overall, respondents used Facebook more consistently for diverse agricultural information compared to YouTube

Table 5: Relationship between Variables

	Variables	Level in obtained Agricultural Information and Awareness
1	Frequency of Using Facebook	0.069
2	Frequency of Using Youtube	0.085

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

Table 5 examines the relationship between the frequency of social media use and the level of obtained agricultural information and awareness. The correlation coefficient for the frequency of using Facebook is 0.069, indicating a weak positive relationship. Similarly, the correlation coefficient for the frequency of using YouTube is 0.085, also suggesting a weak positive relationship. Both correlations are significant at the 0.05 and 0.01 levels, implying that increased usage of Facebook and YouTube is slightly associated with higher levels of agricultural information and awareness among respondents.

Discussion

The invention of the Internet has facilitated humanity in all fields of life; however, its use in the developing world has been unnoticed during the 1st decade of the current century. Now, after the invention of the social media app, people in developing countries like Pakistan have started to use the internet for many purposes. No doubt, the primary use of the Internet through social media sites and applications is for entertainment. Still, due to the entry of the younger generation into agriculture, social media has become the source of agricultural information. In contrast, different people use social media with different Frequency and patterns. During this age of information, the Internet is being used to seek need-based information. This study has been designed to determine the relationship between the usage of social media applications, i.e., Facebook and YouTube, by farmers in the south Punjab region of Punjab Province, Pakistan. Previous research has also depicted the positive relationship between the use of social media and agricultural awareness. Recommendations for both practitioners and researchers are provided to further explore social media use in agriculture. The age of the audience has great importance in agriculture. Social media use habits of the respondents are also very important; therefore, the age of respondents was inquired, which showed that the majority of the respondent farmers (41.8%) belong to the age group of 41-50 years, followed by the group belongs to 30-40 years old formers (33.1%). Working experience in the agriculture sector means that experienced farmers are more likely to accept innovation in their farming activities.

Accordingly, a major portion of the respondents have more than 15 years of agricultural experience. Data shows that respondents use Facebook with a mean Frequency of 46 minutes per day, and YouTube was used for 39 minutes per day. The findings are in line with that of Kuria (2014), who narrated that Social Media and web-based technologies proved very beneficial and achieved considerable knowledge for the majority of the farmers who used social media applications in their farming fields and obtained information with a positive frame of mind. Findings also depicted a weak relationship of .069 between the Frequency of using YouTube and the level of agricultural information and awareness among the farmers. In contrast, a relationship of .085 has been identified between the frequency of using Facebook and the level of agricultural information and awareness among the farmers of the targeted population. The most in-demand web-based media tools among farmers are Facebook, YouTube and WhatsApp Balkrishna and Deshmukh (2017). It has also been noted that a major portion of the respondents use social media platforms on their smartphones.

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Similarly, Ndyetabula and Legg (2011), cited in Aldosari (2019), stated that smartphone technology-based features were used to spread agricultural awareness in times of crisis and emergency. It is very important to mention here that the data was collected purposively only from the individuals/farmers who used social media or have active Facebook accounts and watch YouTube. Data has revealed that farmers use social media regularly; however, the broader use of social media by the audience is entertainment, but they are interested in using these social media platforms for their agricultural information.

Conclusion

The findings of the research revealed that there are variations in the Frequency and usage of different social media platforms (Facebook and YouTube); however, there is a weak but positive relationship between the consumption of social media apps and the level of agricultural information and awareness. It has been revealed that farmers use social media regularly; however, the broader use of social media by the audience is for entertainment, but they are interested in using social media platforms for their agricultural information. The extension department may educate the farmers and equip them by providing ICT technology like smartphones, internet packages, and access to the platforms that disseminate agricultural information.

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