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# Factors Affecting Information Seeking Behavior of Wheat Farmers in District Jhang: A Comprehensive Analysis

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**ABSTRACT**
*This study investigates the information-seeking behavior of wheat farmers in District Jhang, Punjab, Pakistan, and the factors influencing their approach to seeking agricultural information. A quantitative research design was employed, utilizing a self-reported survey with a sample of 385 wheat farmers. The results reveal that farmers actively seek agricultural information, pay close attention to the information they receive, and consult a variety of sources. Production and technological factors were found to significantly influence information-seeking behavior, with more than 50% of the variance explained by these factors. Marketing factors, such as information related to buyers, traders, crop prices, and agrochemical costs, also significantly affected farmers' information-seeking behavior. Environmental and health factors, including weather conditions, irrigation needs, climate change, and health and safety concerns, had a significant impact on farmers' information-seeking behavior. Policy and legal factors, such as governmental policies, subsidies, and legal matters, were also found to significantly influence farmers' information-seeking behavior. Demographic factors, specifically age and education, were found to affect information-*

*seeking behavior, with age having a negative effect and education having a positive effect. Surprisingly, experience did not show a significant effect on information-seeking behavior. The findings of this study contribute to a better understanding of the information needs and seeking habits of wheat farmers in Pakistan, highlighting the importance of various factors in shaping their information-seeking behavior. The results can inform the development of targeted agricultural extension services and information systems to better support farmers in their decision-making processes.*

***Keywords:*** *Information Seeking Behavior; Wheat Farmers; District Jhang; Agricultural Extension; Information Needs; Information Sources.*

**Introduction**

Farmers today face a variety of complex information needs that span across production, technology, marketing, environmental, health, policy, and legal dimensions. These needs are particularly significant for small-scale farmers in developing regions, where access to accurate and timely information is critical for improving agricultural productivity, adapting to climate change, and sustaining farming practices. In the context of production, farmers require knowledge about crop and livestock husbandry to improve yields and manage resources effectively. For instance, in Tanzania, 70% of farmers' information needs revolve around production, marketing, and funding options, highlighting the importance of access to relevant farming data (Elly and Silayo, 2013). The adoption of new agricultural technologies, such as precision farming (PA), plays a key role in modernizing agriculture. PA technologies allow for more efficient use of inputs like water, fertilizers, pesticides, and seeds, ultimately enhancing yield potential. However, barriers such as high initial investment costs, knowledge gaps, and data privacy concerns often hinder the widespread adoption of these technologies (Khaspuria et al., 2024). Similarly, the diffusion of organic farming technologies can be accelerated by improving farmers' access to markets and resources, enabling them to adopt more sustainable practices (Karipidis and Karypidou, 2021). Marketing information is also vital for farmers to stay competitive, as it helps them gauge market demand, set prices, and access new markets. In particular, organic farmers rely on market trends and the support of farmer organizations to enhance their bargaining power and secure better prices for their produce (Ma et al., 2023).

Environmental and health factors are increasingly pressing due to climate change and the growing awareness of the harmful effects of industrial farming inputs. Sustainable farming practices, such as precision farming, can mitigate some of these impacts, but their alignment with environmental goals needs careful consideration (Wolf and Wood, 1997). Moreover, as the agricultural sector faces more environmental pressures, fostering a skilled workforce and providing knowledge-intensive solutions become essential for transitioning to more sustainable practices (Carlisle et al., 2019). Policy and legal factors also play a critical role in farmers' information-seeking behavior. E-services and ICT-based agricultural extensions have become vital tools for bridging the information gap in rural areas. In Tanzania, for instance, e-government services have helped farmers access agricultural information, but challenges such as digital illiteracy and insufficient infrastructure remain (Mushi et al., 2024). Addressing these issues requires comprehensive digital platforms capable of delivering essential services to farmers.

In Pakistan, wheat farming is a cornerstone of the agricultural economy, and understanding how farmers seek and use information is essential for improving productivity and sustainability. The availability of information significantly impacts farming practices, especially in regions like Punjab, where wheat is a major crop. However, little attention has

been paid to understanding the factors that influence farmers' information-seeking behavior, particularly in rural areas like District Jhang. This study aims to fill this gap by analyzing the information needs of wheat farmers in District Jhang, Punjab, with a focus on production, technological challenges, marketing, environmental and health concerns, and policy and legal frameworks. By examining these factors, the study intends to provide valuable insights into how farmers in District Jhang access and utilize agricultural information. These insights can inform agricultural extension services, policymaking, and other programs designed to support farmers in making more informed decisions. As agricultural technologies evolve and climate change continues to pose new challenges, understanding how farmers seek and use information is critical for developing strategies that enhance agricultural productivity and ensure the sustainability of farming practices in Pakistan. This research builds on existing literature, including the work of Wilson (2000), which emphasizes the importance of both formal and informal sources of information for farmers, and it aims to shed light on the role of Information and Communication Technologies (ICTs) in shaping farmers' information-seeking behavior.

**Literature Review**

A broad concept that includes how people seek information, the bases they use and the methods they employ to lessen uncertainty is information seeking behavior. Wilson (2000) noted that when looking for information, a person might cooperate with other people, manual information systems, or computer-based information systems. The sources and methods of communication employed by agriculture extension workers make it abundantly evident that while they mostly use formal channels for information gathering, they primarily use informal ones for informing farmers. According to Babu, S. C et al. (2012), farmers engage in information consumption and search at varying degrees. To better target particular groups of farmers, extension and other agricultural programmes may benefit from a greater understanding of farmers' information needs and information-seeking behaviors. Different models for identifying the many processes involved in this process were presented with the emergence of information need and seeking behaviour research. Kuhlthau (1991), for instance, investigated how Farmers looked for information as part of the writing process.

Jarvelin and Wilson (2003) analyzed several information behavior models (Wilson, 1981) and information seeking behavior (Wilson 1981; Dervin, 1986; Ellis, 1989; Kuhlthau, 1991). Found that some models are of the summary kind while others are more analytical after discussing the roles of conceptual models in scientific research in IS & R research. These models are used for several types of research. Most early studies of information demands were based on indirect techniques, such as farmer the It was discovered that only a very tiny percentage who were considered to be "progressive contact with extension services. Farmers generally had a favorable opinion of the knowledge they learned through extension services. This took place in London in 1948 of the prior conferences. A further significant term used in this study is information requirement. According to Atkin's theory from 1973, a person's perceived gap between their current level of knowledge regarding significant environmental objects and the criteria state they wish to achieve causes extrinsic doubt. Information is collected to meet a need for change in uncertainty, according to Burnkrant (1976).

Morgan and King (1971) proposed that three categories of motives can be used to explain how information needs develop: physiological motives, such as hunger and thirst; unlearned motives, such as curiosity and sensory stimulation; and social motives, such as the desire for affiliation, approval or status, or aggression. Wilson (1981) contended, however, that "information need" was not a basic need like. He discovered that journalists with more recent

education and who were younger exhibited better Internet-related information activities. He came to the conclusion that these journalists were behind their peers in the developed world, lacked Internet-related information behaviors, and were just starting to utilize the Internet. There is a large need for information in the modern world, and this need, combined with the constant growth of technology, has led to the spread of IS (Kolekofski and Heminger, 2003). According to Ciborra (2002), deal the adoption of information technology by businesses, institutions, and society at large at large". ISs, according to Angell and Smithson (1991), are also social systems whose behavior is strongly impacted by the aspirations, principles, and opinions of the people and the groups involved. As well as the technology's functionality. Two forms of IS are described by Fidel (2012) situational methods created for certain community actors and the overall situation ISs intended to suit the needs of the community.
The government's agricultural extension services are a crucial information source for farmers. These services are intended to assist farmers by providing the most recent information in all agricultural fields to help them perform better. In order to gather information about the number of farmer-extension contacts in the former N.W.F.P. province, Sofranko, Khan, and Morgan (1988) interviewed 100 farmers in the region. The study placed a strong emphasis on the number of connections, the types of farmers who have associates with allowance activities, and an evaluation of how well the information obtained from these services was utilized. It was discovered that only a very tiny percentage who were considered to be "progressive contact with extension services. Farmers generally had a favorable opinion of the knowledge they learned through extension services. The efficiency of several material sources used by the farmers in the horseshoe Sugar Mills Area, was investigated by Ali, Zia, Yousaf, Hanif, Chaudhry, and Khan, (1992). Interviews were used to gather the data from 100 respondents who were chosen through a multistage random sample process.
Muneera Ansari (2007) we used structured interviews to examine the information demands and seeking habits of 185 Karachi-based mass media (radio, television, and newspapers) professionals. She discovered that the most popular sources were the reports of numerous organisations. More often than not, the responders needed selective rather than exhaustive information. While Internet usage was rising, library use was relatively low. He also discovered that students use keyword and phrase searches on the internet and prefer search engines and information literacy as retrieval tools. During the search process, he also tested the Farmers' feelings and emotions against the ISP model of Kuhlthau and discovered that they did not match the model. Baro, Onyenania & Osaheni (2010) conducted research on how Nigerian undergraduate farmers behaved when looking for information in the humanities at three different universities. Among the 259 participants in this study, questionnaire, interview, and observation methods were used. Researchers discover that Farmers view libraries as their primary source of information because they need it for academic-related tasks. The David Ellis model of six search techniques is used by researchers to compare information seeking behavior. Examples include starting with lectures or colleagues, perusing a library collection, chaining references at the end of books, and using a card catalogue (differentiating, monitoring and extracting). Information should be integrated, say researchers.
According to Doughlass et., al (1999) in their research Eight high school Farmers at West Seattle High School in Seattle were the subjects of a qualitative study employed interview, observation, discussion, and the think-aloud method. Researchers have found that students view the internet as a simple and efficient tool for finding knowledge. Farmers search by using their and others prior experiences. However, they seek with precision, speed, and

adaptability. However, they become frustrated since the internet is slow and the desired results are not available. Additionally, the variety of forms and visual information on the web make for enjoyable web browsing for students. According to research, websites could benefit from shorter URLs and faster internet. Farmers, on the other hand, have a tough time describing. During the most recent couple of years, various measures have been created to survey wellbeing proficiency. Van der Vaart and partners led a concentrate on patients' DHL with rheumatic illnesses and featured that six capabilities are expected to fathom DHL, including functional and route abilities, data and assessment abilities, and intelligence abilities (capacity to add self-produced content and guaranteeing protection).

The majority of past studies have used the Health Literacy Scale, which may examine one or two concepts fully, such as obtaining and analysing internet material. Duong and colleagues validated and used the HLS-EU test to measure comprehensive health literacy for the general public in various Asian countries. Van der Vaart and Drossaert also used the Digital Health Literacy Instrument (DHLI), a more contemporary tool, to assess operational abilities, navigational skills, information seeking, reliability evaluation, relevance determination, adding self-generated content, and privacy protection. The large percentage of DHL research relies on self-reporting, which is a type of subject measurement. Ghaddar and colleagues looked at adolescent health literacy and its relationship to the reliable source of online-based health information using an online survey. To understand how DHL and the evaluation of online-based health information are related, Diviani and colleagues used a mixed method technique.

They came to the conclusion that individuals with different DHL displayed differences in evaluating skills. According to a comprehensive evaluation of 85 studies by Paascha-Orlow and colleagues on the subject of regional and worldwide levels of health literacy, 26% of Americans have low overall health literacy. Additionally, Rababah and associates discovered that secede graphic factors affect health literacy. Low secede graphic scores, particularly in the areas of education and income level, have also been proven to obstruct the achievement of DHL in previous research. These statistics portray the state of affairs in developed nations, but they also show that the situation with regard to health literacy in developing nations may be more concerning given their underdeveloped health and educational systems as well as the middle to low socioeconomic status of the vast majority of the populace. According to a research done in Asia, 93% of farmers lacked adequate health literacy. Farmers in Turkey, according to another study, lacked adequate health literacy. Similar findings were found in a 2018 research of adolescents in Pakistan, which found that 26% of respondents had acceptable health literacy and 21% had very poor health literacy. The editors' use of their library, government information offices, relevant local entities and autonomous bodies, foreign embassies, and other sources were target of the study. It was shown that editors turn to informal sources of information more frequently than they do formal ones (Schement, 1993).

With the advent of the internet, which fundamentally altered how the world runs and transformed it into an advanced informatics civilization (Tahir, Mahmood, & Shafique, 2008). According to technologists, using information and communication technology in the classroom can help students learn more efficiently and get them ready for the twenty-first century (Sakina, Khalid, & Farzana, 2008). According to Voorbij and Ongering (2006), scientists and social scientists frequently use e-journals for study because they are readily available to them in their respective fields. E-resources and databases are crucial and helpful for academics and subject experts to finish their study fields, according to Hetrick (2002). Email

and the internet have a significant influence on how people look for information. Youth prefer to obtain information online rather than through more traditional means since they can more quickly do so and typically have access to all types of material there (Gray et al., 2005). For general knowledge, the internet is a popular first source among farmers. According to Lewis (2006), some people have access to the internet and other prominent media sites to receive the health information they need because they find it convenient to do so independently of others. Young people's involvement in the internet era offers fresh perspectives on the importance of education. It indicates that networks and online resources make learning potential and fresh chances available (Ito et al., 2008).

To better connect with their users, many librarians have started experimenting with social software. Research libraries spend millions of dollars on giving their patrons desktop access to expensive copyrighted publications, books, and essays (Rowlands et al., 2008). According to Dutta (2009), analysing how users of diverse lifestyles and surroundings seek out information reveals that education plays a significant impact in how people look for information. According to a previous study, users' online comments can provide useful information. They also frequently utilise websites that let them express their views or ideas about various types of content, such as blogs, articles, and news (Ramamonjisoa, & Chakraborty, 2015). Through online surveys, Perrault (2007) investigated the information-seeking habits of biology teachers. Through observation and interviews, the researchers investigated how professionals handle information (Bruce, Jones, and Dumais, 2004). Different models of information seeking behaviour are highlighted such as Ellis (1989), Kuhlthau (1993), and Wilson (1997). Their research implied that information searching takes place in a context and connected the process of looking for information to ideas for fixing problems. Foster (2004) conducted research on the pursuit of knowledge by interdisciplinary researchers and offered a novel nonlinear model of information seeking behaviour.

Searching behaviour refers to the methods used to access information from online or library resources. Researchers Sinh and Nhung (2012) and Brindesi Monopolib and Kapidakisa (2013) revealed that research farmers tended to favour basic search methods over more sophisticated ones like Boolean operators and truncations. Similar to this, Chinnasamy (2016) revealed that researchers only employ author and title searches. Social studies of information technology and social informatics have also made contributions in recent years to this field (Bates & Maack, 2010). Savolainen (2005) defined everyday information seeking as the process to gether information for their personal and professional usage to full fill the requirements of their daily life. It also helps them to solve technical and professional problems. According to Case, the study of information behaviour integrates both information and humans.

There are numerous factors that can influence or direct how farmers seek out information. The rapid increase of literature is one factor that influences how farmers search out knowledge. There are many other sorts of information sources available, but the official and informal sources—which include print and electronic media for formal sources and personal communications for informal sources—are the most significant types of sources. McGettigan et al. (2011) reported that speaking with pharmaceutical representatives and hospital experts is the most practical way to learn about new pesticide of crops. The societal applications of information sciences in several fields piqued the interest of social scientists as well. Social studies of information technology and social informatics have also made contributions in recent years to this field (Bates & Maack, 2010).

According to Tan et al., (2006) cite Dawes and Sampson's findings from 2003 that when doctors encounter a challenging case, they may validate their expertise with colleagues or specialists and seek additional information about the diagnosis or available treatments. In a study on the use of the internet to find clinical information, Cullen (2002) found that people primarily utilized it to research rare disorders. In a similar vein, Case beer et al. (2002) reported that the patient's issue was the primary motivation for seeking information online.

Bennett et al. (2004) He found that the majority of respondents utilize the internet to look out the most up-to-date information on diseases. The study's findings demonstrated that farmers evaluated the internet as a significant source of information for crops treatment and care, and it also came to the conclusion that legitimacy and relevance are the two attributes of the internet that farmers often find challenging to obtain. Numerous studies found that formers mostly utilise the internet to search for material for patient education, crops care, and clinical issue solving (Dorsey and Detlefsen, 2005 & Nail-Chiwetalu and Ratner 2007).

Extension personnel and other information professionals must have a deeper understanding of people's information seeking behaviour, needs, and usage in order to be effective (Pezeshki-Rad & Zamani, 2005). However, the primary goal of extension workers' research is to find a solution to the issues facing their clients, who are primarily farmers. Those who were misinformed needed knowledge from co-farmers, friends, and family, literate farmers seem to trust more specialized agricultural services providers and consider them as a trustworthy and frequently used source of information. It was suggested that farmers be educated about modern agro-technology and techniques like "cultivation of resistant types," "weeding out damaged plants, fertilizer application techniques," "plant care," "crop rotation, etc (Naveed, 2012). Khan (2010) used an interview in the district of Faisalabad to investigate how farmers felt about the current state and preferred future uses of electronic media as an agricultural information source. The results demonstrated that farmers were aware of a variety of media generated agricultural Programmes and interactions, including radio broadcasts, television telecasts, advertising, brief messages, websites.

It was not encouraging to use electronic media for agricultural information. The most popular information source was television, which was followed by radio, telephone, and mobile phones. The source of information with the lowest usage was the agricultural hotline. It was not discovered that audio-video cassettes or the Internet were used as sources of agricultural knowledge. When compared to how people currently use electronic media, the findings regarding preferences for getting agricultural information from them each showed some encouraging trends (Khan, 2010).

When Kavithaa et al. (2014) examined the information-seeking behaviour of dairy farmers in the Erode region of Tamilnadu, India, they discovered that socio-economic factors had influenced this behavior. In the meantime, Dhayal et al. (2013) attempted to measure the information seeking behavior of farmers in the Jaipur district of Rajasthan, India, and discovered that most of the farmers (76%) showed a medium level of information seeking behaviour (ISB), with 13% having low and only 11% having high ISB. Another study conducted in the Udaipur area of Rajasthan, India, by Gunawardana and Sharma (2007) found that while family size, age, and farming experience had no significant correlation with farmers' information seeking behaviour, the extent of the land, education, and extension connections do. Understanding the aforementioned empirical studies allowed our study to educate farmers the information that emerging nations need can be accessed through a variety of sources and ways. It also pointed out that several contextual factors affect farmers' information demands and information-seeking behavior (e.g. country, locality, the

demographic characteristic, the type of crops, and the stages of production, etc, (Tubachi, 2018). The fact that almost all of the studies we investigated had been done without reference to any theoretical framework or model was a key finding of the literature study. In light of this setting, the primary research challenge is too identified was the ignorance of farmers ISB and the variables influencing there. The literature reveals that various research on information use in agriculture have been conducted in Sri Lanka, although most of them have concentrated on gauging farmer's adoption of ICT and creating and assessing ICT-enabled information systems and applications. To understand the information needs and seeking habits of Sri Lankan farmers, very few researches have been done. Information needs begin from responsiveness of something that is missing, this missing of something that is needed cause an urge to seek instant information (Kuhlthau, 2005). Bellkin et al. (1982) viewed information as a method used to solve various types of daily life hacks. Taylor (1968) stated that an individual with an information need of farmers as having certain type of deficiency or lack in his depiction of the world – an insufficiency in what we may say this as state of readiness' to act together with strength of mind and purpose with the world around him. Formers information can be interpreted in many ways and different meanings can be assigned to it by individuals, depending on their explicit necessities (Edda et al., 2010).

**Material and Methods**

This study employs a quantitative research design to assess the information-seeking behavior of wheat farmers in District Jhang, Punjab, Pakistan. The research follows a positivist philosophical approach, focusing on observable and measurable data to understand how farmers seek information. The primary data collection method was a self-reported survey, which allows for capturing the farmers' behavior in a structured format. The population of this study comprises wheat farmers from four tehsils in District Jhang. Due to the lack of an official list of farmers, a convenience sampling technique was utilized to select participants who were easily accessible and willing to provide relevant data. The sample size was determined using Krejcie and Morgan's (1970) table, which recommended a sample of 384. A total of 385 farmers participated in the survey, ensuring a high response rate of 96.25%. Data was collected using a questionnaire adapted from a previous study by Maqbool, Soroya, and Mahmood (2021), which was tailored to the local context. The survey instrument was emailed to participants, who were instructed to complete and return the questionnaire.

**Information Seeking Behavior of the Farmers**

Exploring the status of information seeking behavior of wheat farmers is important as it portrays the picture of the information they usually need, their skills to evaluate that information and awareness about different information sources with actively searching for these sources. The following table provides insights into the information seeking behavior of wheat farmers.

**Table 1:** ***Wheat farmers' information seeking behavior N=385***

| Statements | M | SD |
|---|---|---|
| **I usually need agricultural information.** | 3.63 | 1.293 |
| **I usually consult different information sources for agricultural information** | 3.40 | 1.279 |
| **I pay close attention to the agricultural information** | 3.78 | 1.100 |
| **I actively search for agricultural information** | 4.04 | 1.089 |

Note: 1=Strongly Disagree; 2=Disagree; 3=Neutral; 4=Agree; 5=Strongly Agree

Above table indicates that wheat farmers are active in their search for agricultural information (Mean=4.04, SD=1.089), with keenly paying attention to the information they need (Mean=3.78, SD=1.100). Farmers need agriculture related information (Mean=3.63, SD=1.293), but farmers don't rely on just a single source instead look for variety of different sources for agricultural information (Mean=3.40, SD=1.279).

**Impact of Production and Technological Factors on Information Seeking Behavior**

Technology has accelerated almost all fields and agricultural sector is not an exception in this regard. To measure the impact of these factors on information seeking behavior of wheat farmers, the study calculated the regression effect. Following table presents the details of regression analysis.

**Table 2:** ***Impact of Production and Technological Factors on information seeking behavior of famers***

**Variable**

**Information seeking behavior**

| | **B** | SE | β | T | P |
|---|---|---|---|---|---|
| **Constant** | 1.022 | .206 | | 4.972 | .000 |
| **Production and technological** | .698 | .52 | .562 | 13.312 | .000 |

Note: predictor, production & technological factors

The impact of production and technological factors on information seeking behavior of farmers was examined. Results of table 2 shows that production & technological factors have a significant ($p \leq 0.05$) impact on information seeking behavior of farmers. β values show more than 50 percent positive change in information seeking behavior due to production and technological factors.

**Marketing Factors and Information seeking Behavior of Wheat Farmers**

**Table 3:** ***Impact of marketing factors on information seeking behavior of famers***

**Variable**

**Information seeking behavior**

| | **B** | SE | B | T | P |
|---|---|---|---|---|---|
| **Constant** | 1.908 | .247 | | 7.723 | .000 |
| **Marketing factor** | .461 | .062 | .354 | 7.412 | .000 |
| | | | | | |

Note: predictor, Marketing Factors

Marketing factors include information regarding buyers and traders of crops, seeds, market price, agrochemical prices etc. Such type of needs also has a great impact on information seeking behavior of wheat farmers. As the table shows that impact of marketing factors on information seeking behavior of farmers is significant. The p value is less than 0.05 which shows a significant impact on the information seeking behavior with 95 percent confidence interval. β value is positive which shows that the impact is significantly positive.

**Impact of Environmental & Health Factors on Information Seeking Behavior of Wheat Farmers**

**Table 4:** ***Impact of environmental and health factors on information seeking behavior of famers***

**Variable**

**Information seeking behavior**

| | **B** | SE | B | T | P |
|---|---|---|---|---|---|
| **Constant** | 1.289 | .233 | | 5.529 | .000 |

| | | | | | |
|---|---|---|---|---|---|
| **environmental & health factor** | .620 | .059 | .475 | 10.557 | .000 |

Note: predictor, Environment & Health Factors

Information needs related to environment and health factors included weather, irrigation, health, safety, climate change and disposal of agro waste. The factors also affect information seeking behavior of wheat farmers. As the table 4 shows that environment and health factors has a significant impact on information seeking behavior of wheat farmers ($p \leq 0.05$). Also, the $\beta$ value shows more than 50 % change in the dependent variable due to change in predictor.

**Impact of Policy & Legal Factors on Information Seeking Behavior of Wheat Farmers**

It was also found out that wheat farmers are quite concerned regarding their information needs related to policy and legal factors which include governmental and non-governmental subsidies, trainings, workshops, legal matters and policies.

***Table 5: Impact of Policy and legal factors on information seeking behavior of famers***

**Variable**

**Information seeking behavior**

| | **B** | SE | B | T | P |
|---|---|---|---|---|---|
| **Constant** | 1.209 | .184 | | 6.568 | .000 |
| **policy and legal factor** | .638 | .046 | .579 | 13.885 | .000 |

Note: predictor, Policy and Legal Factors

As it is evident from the table above that policy & legal factors have a significant impact on information seeking behavior of farmers ($p \leq 0.05$). Farmers showed concern over policy and legal factors and believed that they need information regarding all these factors. Which in turns helps to formulate their information seeking behavior.

**Impact of Demographic Factors on Information seeking Behavior**

Demographic factors included age, education and experience of the farmers. Demographic factors have the capacity to change the behavior patterns. To calculate its affect, the researcher conducted regression analysis. The following table provides insight into the affects of demographic factors on information seeking behavior of wheat farmers.

**Table 6: *Impact of age, education and experience on information seeking behavior of famers***

**Variable**

**Information seeking behavior**

| | **B** | SE | β | T | P |
|---|---|---|---|---|---|
| **Constant** | 3.920 | .203 | | 19.313 | .000 |
| **age** | -.223 | .075 | -.216 | -2.969 | .003 |
| **Education** | .125 | .045 | .147 | 2.800 | .005 |
| **Experience** | -.002 | .066 | -.002 | -.033 | .974 |
| | | | | | |

Note: predictor, Age, education, experience

As the tables shows that age has significant effect on information seeking behavior of farmers ($p \leq 0.05$). It is important to note that majority of the farmers were from the age group 26-55 which comprise 71% of the total population. Although, negative beta value shows that the effect is negative in direction. Education also turned out as a significant predictor of information seeking behavior ($p \leq 0.05$), which might help them to understand agricultural

information and fosters the use of technology. But it's quite strange that experience don't seem to exert any effect on information seeking behavior of farmers ((p≥0.05).

**Results and Discussion**

This study aimed to assess the information-seeking behavior of wheat farmers in District Jhang, Punjab, Pakistan, by examining the various factors that influence their approach to seeking agricultural information. The results offer key insights into the behavior of farmers and the significant factors that shape their information-seeking practices. The findings reveal that wheat farmers are highly engaged in actively seeking agricultural information. The mean score for the statement "I actively search for agricultural information" was 4.04, indicating that farmers are proactive in gathering relevant knowledge. Additionally, the farmers were shown to pay close attention to the information they receive, with a mean score of 3.78, suggesting that they are invested in the quality and relevance of the agricultural information they obtain. Furthermore, farmers exhibited a clear need for agricultural information (Mean = 3.63) but did not rely on a single source, instead consulting a variety of sources (Mean = 3.40). This finding aligns with Babu, S. C et al. (2012), who found that farmers engage with both formal and informal sources of information. The study also identified that production and technological factors significantly influence the information-seeking behavior of wheat farmers. Regression analysis showed a strong positive relationship between these factors and information-seeking behavior ($\beta = 0.562$, $p \leq 0.05$). More than 50% of the variance in information-seeking behavior was explained by production and technological advancements. This finding is consistent with Kuhlthau's (1991) and Jarvelin and Wilson's (2003) research, which emphasizes that technological innovations significantly impact how farmers search for and use agricultural information to enhance productivity.

Marketing factors, such as information related to buyers, traders, crop prices, and agrochemical costs, were also found to significantly affect farmers' information-seeking behavior. The regression results showed a significant effect ($\beta = 0.354$, $p \leq 0.05$), indicating that market-related information plays a key role in motivating farmers to seek out information. This supports Morgan and King's (1971) idea that social motives, such as the desire for financial success and market competitiveness, drive information-seeking behavior. The study examined the influence of environmental and health factors, including weather conditions, irrigation needs, climate change, and health and safety concerns. The regression results ($\beta = 0.475$, $p \leq 0.05$) show a significant impact of these factors on farmers' information-seeking behavior. These findings are consistent with Kuhlthau (2005), who noted that information is often sought to fill knowledge gaps, particularly when dealing with environmental uncertainties. Farmers are actively seeking information to manage irrigation, crop management, and adapt to climate change, highlighting the practical need for information in daily farming activities.

Policy and legal factors were also found to have a significant impact on farmers' information-seeking behavior. The regression analysis ($\beta = 0.579$, $p \leq 0.05$) revealed that farmers are concerned about governmental policies, subsidies, and legal matters, and actively seek information to stay informed about these issues. This aligns with Wilson's (1981) assertion that information-seeking behavior is often driven by the need to reduce uncertainty, particularly in relation to policies that directly affect farmers' livelihoods. The study also explored the impact of demographic factors—specifically age, education, and experience—on information-seeking behavior. The results showed that age ($\beta = -0.216$, $p \leq 0.05$) negatively

affects information-seeking behavior, with older farmers being less likely to actively seek out agricultural information. This finding supports Wilson's (1981) model, suggesting that older individuals may be less inclined to engage with new information sources. In contrast, education ($\beta = 0.147$, $p \leq 0.05$) had a positive effect, indicating that more educated farmers are more likely to seek out and engage with agricultural information. This finding is in line with Kolekofski and Heminger's (2003) research, which emphasizes the role of education in enhancing information-seeking behavior, especially in the context of new technologies. Surprisingly, experience did not show a significant effect ($p \geq 0.05$), suggesting that practical farming experience alone may not be sufficient to drive information-seeking behavior, as other factors such as education and technological access may play a more prominent role.

**Conclusion**

This study explored the information-seeking behavior of wheat farmers in District Jhang, Punjab, Pakistan, revealing key factors that influence how they gather agricultural information. The findings show that farmers are proactive in seeking information from various sources, both formal and informal. Significant factors affecting their information-seeking behavior include production and technological factors, marketing conditions, environmental and health concerns, and policy and legal frameworks. The study also highlights the importance of education in shaping farmers' engagement with agricultural information. However, the use of convenience sampling and the exclusion of less educated farmers are limitations that may affect the generalizability of the results. Overall, the study provides valuable insights for agricultural extension services and policymakers, suggesting that targeted strategies are needed to improve farmers' access to relevant information and enhance agricultural productivity in Pakistan.

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## Appendix

### Questionnaire

- Age
  - ☐ Less than 25 ☐ 26-45 ☐ 46-55 ☐ Above 56
- Education
  - ☐ Less than matric ☐ Matric ☐ Less than Intermediate ☐ Less than graduate
- Farming experience
  - ☐ Less than 5 years ☐ 5-15 years ☐ 16-25 years ☐ above than 26

### سوالنامہ

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **1.1** | **Information Needs about Production and Technological Factors** | | | | | | زرعی پیداواری اور تکنیکی عوامل سے متعلق معلوماتی ضروریات |
| **Scale 1=Strongly Disagree; 2=Disagree;3=Neutral; 4=Agree;5=Strongly Agree** | | | | | | | مکمل نا2=نا متفق؛3= غیر جانبدار؛4=؛متفق5=مکمل متفق پیمانہ:1= متفق؛ |
| Please rate your opinion on given scale | | | | | | | براہِ کرم! دیے گئے پیمانے پر اپنی رائے کا اظہار کریں |
| **I need agricultural production & technological information for** | | | | | | | مجھے زرعی اور پیداواری تکنیکی معاملات میں معلومات کی ضرورت ہوتی ہے تاکہ |
| 1 | land preparation and irrigation methods etc. | 1 | 2 | 3 | 4 | 5 | زمین کی تیاری اور آبپاشی کے طریقے وغیرہ سمجھ سکوں |
| 2 | Post-harvest steps. | 1 | 2 | 3 | 4 | 5 | فصل کی کٹائی کے بعد کے مراحل اور ٹیکنالوجی کو جاننے کے لیے |
| 3 | agricultural seeding, its types, purchase and cost | 1 | 2 | 3 | 4 | 5 | بیج کی بوائی، اقسام، خریداری اور وسائل وغیرہ کو جاننے کے لیے |
| 4 | labor availability in locality | 1 | 2 | 3 | 4 | 5 | علاقے میں دستیاب مزدوروں کو معلوم کرنے کے لیے |
| 5 | pest diseases and its controlling methods | 1 | 2 | 3 | 4 | 5 | کیڑوں بیماریوں اور ان پر قابو پانے کے طریقوں کو جاننے کے لیے |
| 6 | new farming methods, tools, and new technology | 1 | 2 | 3 | 4 | 5 | کاشت کاری کے جدید طریقوں، آلات اور ٹیکنالوجیز کو جاننے کے لیے |
| 7 | managing soil conservation and soil fertility | 1 | 2 | 3 | 4 | 5 | زرعی زمین کی حفاظت اور زرخیزی کے تحفظ کے انتظامات کو جاننے کے لیے |
| 8 | fertilizers' types, its places, purchases and cost | 1 | 2 | 3 | 4 | 5 | کھاد کی اقسام، قیمت اور خریداری کے مراکز کے بارے میں جاننے کے لیے |
| **1.2** | **Marketing Factors** | | | | | | منڈیوں سے متعلق عوامل |
| **Scale: 1=Strongly Disagree; 2=Disagree;3=Neutral; 4=Agree;5=Strongly Agree** | | | | | | | مکمل نا2=نا متفق؛3= غیر جانبدار؛4=؛متفق5=مکمل متفق 1= متفق؛ |
| Please rate your opinion on given scale | | | | | | | براہِ کرم! دیے گئے پیمانے پر اپنی رائے کا اظہار کریں |
| **I need information about marketing activities to** | | | | | | | مجھے معلومات کی ضرورت ہوتی ہے تاکہ |
| 9 | Know about current/forecast prices. | 1 | 2 | 3 | 4 | 5 | زرعی اجناس کی منڈیوں میں موجودہ قیمتوں اور مستقبل میں اتار چڑھاو کو جاننے کے لیے |
| 10 | know about expected future prices of different crops in different markets | 1 | 2 | 3 | 4 | 5 | مخصوص منڈیوں میں خاص فصلوں کی مستقبل میں متوقع قیمتوں کو جاننے کے لیے |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 11 | know about prices of agrochemicals | 1 | 2 | 3 | 4 | 5 | زرعی کیمیکلز وغیرہ کی قیمتوں کے بارے میں جاننے کے لیے |
| 12 | know about buyers, collectors, traders and transporters | 1 | 2 | 3 | 4 | 5 | اجناس کے خریداروں، اسٹاک کرنے والے تاجروں اور ٹرانسپورٹرز (ذرائع نقل وحمل) کو جاننے کے لیے |
| 13 | know about finance, its sources, costs/rates | 1 | 2 | 3 | 4 | 5 | زرعی اجناس کی سرمایہ کاری سے متعلق خدمات حاصل کرنے اور ان کی لاگت / نرخوں کو جان سکوں |
| **1.3** | **Environment and health:** | | | | | | حصول معلومات برائے ماحولیات اور صحت |
| **Scale 1=Strongly Disagree; 2=Disagree;3=Neutral; 4=Agree;5=Strongly Agree** | | | | | | | **پیمانہ:1=مکمل نامتفق؛2=نامتفق؛3=غیر جانبدار؛4=؛متفق5=مکمل متفق** |
| Please rate your opinion on given scale | | | | | | | براہِ کرم! دیے گئے پیمانے پر اپنی رائے کا اظہار کریں |
| **I need information about agricultural environment and health for knowing** | | | | | | | مجھے ماحولیات اور صحت پر معلومات کی ضرورت ہوتی ہے تاکہ |
| 14 | environment friendly practices | 1 | 2 | 3 | 4 | 5 | ماحول دوست طریقہَ ہائے کاشتکاری کے بارے میں جاننے کے لیے |
| 15 | weather and irrigation water | 1 | 2 | 3 | 4 | 5 | موسم اور آبپاشی میں استعمال ہونے والے پانی سے متعلق جاننے کے لیے |
| 16 | health & safety related to agrochemicals usage | 1 | 2 | 3 | 4 | 5 | زرعی کیمیکلز کے استعمال اور حفظان صحت سے متعلق جاننے کے لیے |
| 17 | climate change, adoption and mitigation | 1 | 2 | 3 | 4 | 5 | موسمی تبدیلیوں کے مطابق فصل کی کاشتکاری کے بارے میں جاننے کے لیے |
| 18 | safe disposal of Agro-wastes (agrochemicals and other leftovers) | 1 | 2 | 3 | 4 | 5 | زرعی فضلے، کیمیکلز اور دیگر باقیات کو تلف کرنے کے طریقوں کو جاننے کے لیے |
| 19 | environment, health &safety related to occupational diseases | 1 | 2 | 3 | 4 | 5 | زراعتی بیماریوں کے متعلق حفظان صحت کے اصولوں کو جاننے کے لیے |
| 20 | predictions and disaster communication | 1 | 2 | 3 | 4 | 5 | قدرتی آفات اور ان کی پیشگوئیوں سے متعلق جاننے کے لیے |
| **1.4** | **Policy and Legal:** | | | | | | حصولِ معلومات برائے زرعی پالیسیاں اور قانونی معاملات |
| **Scale 1=Strongly Disagree; 2=Disagree;3=Neutral; 4=Agree;5=Strongly Agree** | | | | | | | **مکمل نا2=نامتفق؛3=غیر جانبدار؛4=؛متفق5=مکمل متفق پیمانہ:1=متفق؛** |
| Please rate your opinion on given scale | | | | | | | براہِ کرم!دیے گئے پیمانے پر اپنی رائے کا اظہار کریں |
| **I need information about agricultural policies and legal matters of** | | | | | | | مجھے زرعی پالیسیاں اور قانونی معاملات پر معلومات کی ضرورت ہوتی ہے تاکہ |
| 21 | Non-governmental activities, subsidies and programs. | 1 | 2 | 3 | 4 | 5 | غیر سرکاری سرگرمیوں اور سبسڈی پروگراموں کو جان سکوں۔ |
| 22 | trainings, workshops and field trips | 1 | 2 | 3 | 4 | 5 | تربیتی پروگراموں اور ورکشاپوں اور فیلڈ میں کیے جانے والے دوروں کو جان سکوں۔ |
| 23 | governmental subsidies, policies and programs | 1 | 2 | 3 | 4 | 5 | حکومتی زرعی پالیسیوں، منصوبوں اور سبسڈی سے متعلق معلوم کر سکوں۔ |
| 24 | agricultural policy and legal matters on policies and regulations | 1 | 2 | 3 | 4 | 5 | حکومتی زرعی پالیسیوں اور قواعد وضوابط سے متعلق معلوم کر سکوں۔ |
| **Q.2** | **Farmers' information seeking behavior** | | | | | | کسانوں کا معلومات کے حصول میں رویہ |
| **Scale: 1=Strongly Disagree; 2=Disagree;3=Neutral; 4=Agree;5=Strongly Agree** | | | | | | | **پیمانہ:1=مکمل نامتفق؛2=نامتفق؛3=غیر جانبدار؛4=؛متفق5=مکمل متفق** |

| Please rate your opinion on given scale that | | | | | | | براہِ کرم! دیے گئے پیمانے پر اپنی رائے کا اظہار کریں کہ مجھے / میں |
|---|---|---|---|---|---|---|---|
| 91 | I usually need agricultural information. | 1 | 2 | 3 | 4 | 5 | عموماً زرعی معلومات درکار ہوتی ہے |
| 92 | I usually consult different information sources for agricultural information | 1 | 2 | 3 | 4 | 5 | عموماً زراعی معلومات کے حصول کے لیے مختلف معلوماتی ذرائع استعمال کرتا ہوں |
| 93 | I pay close attention to the agricultural information | 1 | 2 | 3 | 4 | 5 | زراعت سے متعلق دستیاب معلومات پر پوری توجہ صرف کرتا ہوں |
| 94 | I actively search for agricultural information | 1 | 2 | 3 | 4 | 5 | زراعت سے متعلق معلومات کی تلاش میں ہمیشہ متحرک رہتا ہوں |