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Understanding the Information Needs of the Farmers: Insights into Production, Technology, Marketing, Environmental, Health, Policy and Legal Dimensions

Ali Abbas

Research Scholar, School of Information Management, Minhaj University Lahore, Punjab, Pakistan

Email: aliabbas.mphil19@gmail.com

Muhammad Nadeem Akhtar (Corresponding Author)

Head, Main Library & IT Department, Ayub Agricultural Research Institute, Faisalabad, Pakistan

Email: ch.nadeem@aari.punjab.gov.pk

Zulfiqar Ali

Senior Technical Instructor, School of Agro-Technology and Applied Sciences, Institute of Brunei Technical Education (IBTE), Brunei Darussalam

Email: zulfiqar.ali@ibte.edu.bn

Dr. Ferhana Saeed Hashmi

Lecturer, School of Information Management, Minhaj University Lahore, Punjab, Pakistan

Email: ferhana.lis@mul.edu.pk

Sidra Batool

Technical Librarian, Ayub Agricultural Research Institute, Faisalabad, Pakistan

Email: sidra.batool@aari.punjab.gov.pk

Muhammad Owais

Senior Scientist, Wheat Research Institute, Faisalabad, Pakistan

Email: mowais928@gmail.com

Ghulam Farooque Channar

Librarian, Quaid-e-Awam University of Engineering, Science and Technology, Nawabshah Pakistan

Email: farooqchanar@quest.edu.pk

ABSTRACT

This study investigates the information needs of wheat farmers in District Jhang, Punjab, Pakistan, focusing on production, technology, marketing, environmental, health, policy, and legal dimensions. A quantitative research design with a positivist philosophical approach was employed, utilizing a self-reported survey to collect data from 385 farmers using convenience sampling. The findings reveal that farmers prioritize technical information, particularly regarding agricultural seeding (Mean=4.04) and pest control (Mean=4.03). Marketing information, such as current prices (Mean=4.07), is also highly sought after. Environmental and health concerns are significant, with farmers emphasizing the need for information on weather and irrigation (Mean=4.00) and agrochemical safety (Mean=3.97). Additionally, farmers show a keen interest in agricultural policies and training (Mean=4.13 and Mean=3.83). Demographic factors, such as age and education, play a role in shaping information-seeking behavior, with younger and better-educated farmers more likely to engage with information systems. The study highlights the critical necessity for relevant and timely information in agriculture and underscores the need for targeted dissemination strategies and capacity-building initiatives to

empower farmers and enhance agricultural productivity in Jhang. Future research should focus on developing effective communication channels and leveraging modern technologies to better meet the diverse information needs of farmers.

Keywords: *Information Needs; Agricultural Extension Workers; Farmers; Information Sources; Knowledge; Agricultural Production; Information Dissemination.*

Introduction

Agriculture is the backbone of many developing economies, particularly in regions like Punjab, Pakistan, where wheat farming is a primary livelihood for a significant portion of the population. However, the success of farmers in this sector depends heavily on their ability to access and effectively utilize information across various aspects of farming. The rapidly evolving agricultural landscape, influenced by factors such as climate change, technological advancements, market dynamics, and policy changes, has made it imperative for farmers to stay informed. Farmers' information needs encompass a broad range of dimensions, including production techniques, technological innovations, market trends, environmental factors, health-related concerns, and policy and legal matters. These needs are not only critical for enhancing productivity and ensuring the sustainability of farming practices but also for enabling farmers to make informed decisions that can mitigate risks and capitalize on opportunities. As agriculture becomes increasingly knowledge-intensive, understanding the specific information requirements of farmers is essential for developing effective agricultural extension services and policies.

In District Jhang, a key agricultural area in Punjab, wheat farmers face a variety of challenges that require timely and accurate information. This study aims to explore the multifaceted information needs of these farmers, focusing on production, technological advancements, marketing, environmental and health concerns, and the influence of policy and legal frameworks. By examining these dimensions, this research seeks to provide valuable insights into the information-seeking behavior of farmers, identifying the key factors that drive their information needs and how these needs impact their farming practices. Ultimately, understanding the information needs of farmers is crucial for the development of targeted agricultural extension programs, improved information dissemination systems, and policies that support farmers' decision-making processes, thereby enhancing agricultural productivity and sustainability in the region.

Literature Review

The information is necessary for extension workers, like all other professions, to fulfill their decision-making problems. Information want and information requirement are two separate things. Technical, commercial, social, legal, and general information needs of agricultural extension workers in Southwest Nigeria were categorized by Yomi-Alfred and Odefadehan (2007). In emerging nations, agriculture is becoming a more knowledge-intensive industry, necessitating precise and trustworthy data on farming practices. In addition to being presented and given in a manner that farmers like, information must be pertinent and meaningful to them (Diekmann et al, 2009). According to Aina's 1989 research, agricultural extension workers have a variety of agricultural information needs, the majority of which are technical and can only be met by research scientists. Since information needs are most often connected to people's work activities, agricultural extension workers' information needs are primarily related to farming operations. If extension workers are ineffective at disseminating information due to inadequate knowledge on specific issues, they will not be able to fulfill their obligations to their clients (Nwokeoma, 2019).

To learn more about their favored sources of agricultural information, see Khan, Morgan, and Sofranko (1990). These farmers had access to a variety of information sources, albeit they typically regarded the dealers as their first choice. These sources included relatives, dealers, mass media, better farmers, and neighbors. It was discovered that farmers' chosen information sources varied in their effectiveness as information distributors. There was not much evidence of a connection between socioeconomic factors and information use. The use of these sources appeared to be a matter of personal taste rather than socioeconomic level, farm size, or any other structural trait as the knowledge about enhanced inputs was available from a range of information sources. Muhammad and Garforth (1999) conducted a study of farmers in the district of Faisalabad utilizing an interview schedule, selecting them at random using a multistage sample procedure to examine their perceptions of the most useful information sources. According to the findings, the majority of respondents relied more heavily than other sources of information on their neighbors, relatives, acquaintances, and the mainstream media (radio and television). Observations revealed that farmers primarily rely on indirect methods of information sharing, rather than direct contact. Extension field agents, agriculture officers, and contact farmers were perceived as the least reliable sources of information. The printed materials were regarded by the farmers as the most effective communication tools, followed by those produced by the University of Agriculture, Faisalabad, and the Ayub Agricultural Research Institute. However, their access to these information sources was extremely constrained. By exposing the farmers to these information sources, it may be possible to better equip them with the most recent agricultural knowledge. In order to determine the preferred agricultural information sources utilized by rural women farmers to learn about crop, animal, and poultry production, Sadaf, Javed, and Luqman (2006) performed a study. 125 respondents who were actively engaged in farming and chosen through a multistage random sample participated in a structured interview that was used to gather the data. The information sources available to them included T.V./radio, print media, extension workers, male family head or husband, neighbours, coworkers, and NGOs.

They believed that the best knowledge sources for agricultural information were the male household head or spouse, neighbours, and coworkers. They emphasised how much they needed assistance with agricultural extension. The majority of respondents selected female agricultural extension agents, electronic media, and fellow farmers as their primary sources of agricultural information. The authors suggested that in order to provide women farmers with the most recent agricultural knowledge, the government should start gender-based training and educational programmes for them. Using an interview in Faisalabad, Chaudhry, Muhammad, Saghir, and Ashraf (2008) conducted a survey of 120 women farmers who were randomly chosen using a multistage sample technique to determine their access to various sources of information regarding new agricultural technologies. It was discovered that there was a substantial correlation between respondents' education and age, as well as their use of radio, television, and print media as information sources. In order to increase agricultural production, it was determined that a better information dissemination system was required, especially for rural women.

To help them make better farming decisions, farmers employ a range of information. Information requirements can be divided into the following five categories, according to Ozawa (1995) inputs for agriculture, extension education, technology for agriculture, credit for agriculture, and marketing.

De Silva and Rathnadiwakara (2010) divided agricultural information needs into six categories based on the stages of the farming life cycle crop selection, seeding, preparation and planting,

growth, harvesting and storage, and marketing. Frequent research have been conducted to determine. By concentrating on the data looking for conduct of Bangladeshi ranchers, Kabir et al. (2014) found that data connected with crop security, showcasing, and environment was the superb data need. University of Agriculture, Faisalabad, and the Ayub Agricultural Research Institute. Conversely, their access to these information sources was exceptionally constrained. By exposing the farmers to these information sources, it may be possible to better equip them with the most recent agricultural knowledge.

Bello and Salau (2009) defined agricultural extension as a system of education that offers farmers the technical guidance they need to boost farm productivity, including guidance on available loan options and marketing tactics. Workers in the agricultural extension system are those individuals tasked with achieving the system's objectives, according to Khalil (2008). The extension system is a method whereby researchers do research and then give the findings to extension agents so that they can properly disseminate them to potential farmers. Since extension staff primarily disseminates information, they are expected to actively seek out new information and keep themselves abreast of all on- and off-farm developments (Kumaran, Vimala, Raja & Alagappan, 2012). Workers in agricultural extension are crucial in enabling the farming community to access quality farms. This literature review covers the available literature of information seeking behavior especially focusing the farmers. The researcher conducted comprehensive search through different databases for the determination of reviewing the works. The works review is arranged chronologically.

Investigation portrayed the different sorts of information sources that scatter information on creation, use and showcasing of soybeans to farmers. The speculations created during this period, especially those about imperceptible universities and prize frameworks, assumed direct models of Information science research (Crane, 1972). They gather, measure, store, scatter and use information in a few structures for various purposes. As human culture is walking towards improvement and progress, it is simply because of information. Information colossally affects society in every one of the different backgrounds. Data necessities of restricted scope ranchers twirl around the objective of issues, for instance, bug chances, weed control, soddenness insufficiency, soil readiness, farm credit, work inadequacy, soil crumbling, advances and assets and Govt. plots, and so forth (Olowu, 1998).

Muhammad and Garforth (1999) Study farmers were selected at random through a multi-stage examination approach, using a meeting schedule from the Faisalabad region to study the successful sources of knowledge as perceived by them. The findings showed that a large portion of the respondents depended more on general communications (radio and TV) and their neighbours, families, and friends than on other sources of information. It was discovered that perceptions, not relational correspondence, had a key role in how knowledge flowed among farmers. A nearer coordination among researchers and information experts would assist with improving the working of the library framework. Agribusiness researchers are the experts who are distinctive as in they are consistently cognizant and they are clients of information as communicators to agrarian culture. As the work progresses and the time passes, their information needs grow to be extraordinarily substantial. They collaborate with a wide range of information frameworks and individual sources to meet their needs. Information-seeking behavior is what we refer to as this interaction. Majid and others (1999).

Wilson (1999) observed that information seeking models frequently do not represent fully developed hypotheses. Wilson (1999) did note, however, that these models have significantly advanced understanding of information seeking behaviour (ISB) in various contexts. The expression Information looking for conduct includes the manners in which people articulate

their information needs, look for, assess, select, and use information in different words, information looking for conduct is a purposive looking for information as a result of a need to fulfill some objective" (Meho & Haas, 2001). The fundamental discoveries of past research regarding farmers are examined inside various key subjects, including the utilization of formal and casual wellsprings of information, the utilization of electronic assets and hindrances to information seeking for among these gatherings. The motivation behind the audit is to give logical foundation information to the current investigation of sociology researchers in Oman and to recognize which issues to zero in on to give valuable relative information and help to fill a portion of the flow information holes (Sole & Edmondson, 2002).

Urbanites in non-industrial nations is very like the information needs of farmers and information looking for conduct of taught residents in created nations. Studies done in Argentina (Tiratel, 2000) and Malaysia (Zawawi & Majid, 2001) examined researchers' favored information sources by considering their information looking for conduct, while research done in Uganda (Gitta & Odongo, 2003). Information has been a vital component in the advancement of human culture. It has formed the manner by which individuals think and act. All individuals to take choices in their normal lives and to receive the positive outcome in return use information (Baumeister & Vohs, 2008). A cognizance or information obtaining relies upon requirements of people engaged with exceptional exercises, for example, dairy cultivating and home administration. Farmers continually oversee and adjust their homestead organizations to stay cutthroat in an evolving world. This is finished by fine tuning existing practices and advancements or by embracing developments, like novel items, innovations or practices (Kavithaa, 2010).

As indicated by Cun and Xu (2013) the vast majority of the farmers social quality is low, their consciousness of information is feeble, and information obtaining capacity isn't solid, they don't understand the incredible impacts of agricultural information and not dynamic in the utilizing of information. Previous studies mostly focused on the cultivating efficiency, climate change, and information effects on society. First the author reviews the literature then shed a light on information needs and focus on the information behavior of the farmers. Information cycle is at times complimentary here and there includes some significant pitfalls (Siders, 2019). The information trade measure is a fundamental piece of a cultivating framework. It is imperative to grasp correspondence organizations, natural circumstance and changes in the commercial center to comprehend a cultivating framework where there are heaps of wellsprings of development and progress (Bodie & Marcus, 2013). Farmers have a limit and ability to control their current circumstance. They all need and offer information about legislative issues, account, market, innovation and in applicable fields. This information cycle is once in a while complimentary; now and again includes some significant pitfalls. The information trade measure is a fundamental piece of a cultivating framework (Ledgerwood & Nelson, 2013).

Farmers have taken interest to identify the advanced strategy of cultivating to improve agricultural efficiency. In times of increasing demands on agriculture industry, the role of information acts as a powerful tool for enhancing crop productivity. Farmers should have most recent information and mechanical ability on present day agribusiness. Use of information in the agrarian area upgrades cultivating efficiency in various manners. Giving information on climate patterns, best practice in cultivating, new advances created by researchers, and convenient admittance to showcase. Information helps the rancher settle on right choices about what yields to plant and where to sell their item and purchase inputs (Duncombe, 2016). The job of the contact farmers, field colleagues, horticulture officials, and augmentation field

staff in information scattering was definitely not exactly expected in light of the fact that there was less communication between farmers, field staff, field collaborators, and agribusiness officials. These were seen as the most un-compelling wellsprings of information.

The farmers considered the written works to be the finest communication medium, followed by the University of Agriculture, Faisalabad, and the Ayub Agricultural Research Institute. Yet access to these information sources was extremely constrained. If the farmers were more receptive to these information sources, they might be better equipped with the most recent farming knowledge (Fitzgerald, 2016). Pakistan being the agricultural country, farming is the foundation of Pakistan economy. Farmers keep up their occupation by selling crops, showcasing these things in nearby market. Information seeking behavior of farmers are considered for legitimate arranging and strategy making. Progress in Agriculture is connected to a few keys and regularly interrelated factors. These factors ranging from technological to marketing factors. Consequently, the messages and information on natural farming practices should utilize these sources all the more regularly related to different wellsprings of agrarian information. Fallys (2013) tracked down that transistor was most consumed medium between the ranchers. Notwithstanding, farmers incline toward print media while getting to information in spite of perceptions that farmers in the examination had never gotten to information on paper media. Farmers' utilization of correspondence channel doesn't really demonstrate that farmers incline toward that channel, yet that without favored channel, will utilize whatever channel is accessible to them.

An assortment of spaces of information is required by farmers, on the off chance that they truly need to improve the cultivating in a logical way. To do the trick their requirements, the information mediators and expansion experts need to create techniques to satisfy their necessities in way for all encompassing improvement of the cultivating framework (Rabindra & Mahapatra, 2016). It is imperative to grasp correspondence organizations, ecological circumstance and changes in the commercial center to comprehend a cultivating framework where there are bunches of wellsprings of advancement and progress (Wanuma & Wanyoike, 2018). The outcomes are introduced, trailed by a conversation of discoveries, hypothetical and reasonable ramifications, study impediments and suggestions for additional examination (Chiarelli, Johnson, Pinfield, & Richens, 2019).

Farmers continually oversee and adjust their homestead organizations to stay cutthroat in an evolving world. This is finished by fine tuning existing practices and advancements or by receiving developments, like novel items, innovations or practices. The study's findings will provide information to researchers, designers of information systems and applications, and policy makers on the variables influencing farmers' information-seeking activities. Additionally, this research will encourage such investigations in undeveloped nations (Mahidarathne & Min 2019).

The present phase has been correctly termed a material age in light of the fact that the information has become the main component for progress in the public arena (Deribe & Kaske, 2020). Along these lines, the Need for right information at the opportune time is of most extreme significance. Every one of the human exercises are coordinated towards information delivering and information of farming devouring practices. Information has become the focal concentration in the new measurements and circles of telecommunication, television, telemetric, computers, publishing firms, radio, satellite communication and so forth. Those individuals who are engaged with agriculture, engineering, research and development, organization, journalism and entertainment are pursuing information (Dhaya, & Algarni, 2020).

The agrarian libraries have begun embracing new advances and methods to improve their information of farming securing, association and scattering (Mahapatra, 2012b). In the event that the agrarian researchers are given right information in perfect time, an incredible commotion in the rural framework can be figured it out. In such a circumstance, meeting the information needs of farmers is a decent exercise with respect to the library experts. In this unique circumstance, farmers working in fields requiring information to help their cultivating work in the center of the issue. The exploration is intended to mirror the situation on the information needs of farmers in four towns of Jhang, which is a creating state in the Punjab Pakistan. In this manner, the current examination endeavors to make an inside and out investigation of factors proceeded by Mahindarathane and Min (2018). Again, it is proposed to distinguish the issues related with information needs and use of information by the farmers of four towns of Jhang Punjab Pakistan and to find answer for take care of the arising issue of improving the cultivating framework. The studied literature showed that the majority of farmers in Pakistan were illiterate and unaware of practical measures to increase agricultural productivity. This appeared to be the case because the organization's that provided the information were not doing their jobs well. Education played a crucial and extremely important part in enhancing farming operations. It was clear that most farmers relied primarily on interpersonal connections with friends, neighbor's, family members, co-farmers, or progressive farmers, followed by mass media (only radio and television) to get the knowledge they needed. The main methods of information transfer were conversation and observation. These findings are in line with those from Dutta (2009) and Zhang and Yu (2009), who discovered that rural Chinese people mostly acquired information through interpersonal contacts, the media, and agricultural extension officers. Who found that people in rural areas of developing countries looked to informal networks as their primary information sources. The specialists emphasized how crucial it is for ISB studies on regional agriculture. Concerning issues with model building, they underlined the need for a model to be both theoretically sound and straightforward enough to be used by a wide range of users who share their viewpoints. They also emphasized how farmers' information needs have evolved dramatically and how new information demands related to climate change, natural catastrophes, ecologically friendly farming, and policy and legal enforcement should be given attention. Experts also emphasized a developing pattern of using contemporary communication and information channels in local agriculture (Mahindarathne, 2018). Farmers participated in focus groups to discuss their information needs, sources, and other factors when looking for information about farming activities. There were four of these focus group conversations, with an average of eight farmers each session. Farmers emphasised the importance of information in the focus group talks as it relates to contemporary agriculture. Information regarding input and output markets, new seeds and growing materials, labour information, and information about health and the environment were recognized as priorities among their varied information demands (Wickliffe, 2002). An intriguing finding that was not reported in earlier studies is the local farmers' resurgence in interest in conservation and professional shape material. The farmers claimed to have a strong reliance on conventional sources and channels for their information needs. While describing their readiness to embrace contemporary communication tools, they also listed a number of obstacles that have kept them from doing so (Mahindarathne, 2018). In this unique circumstance, farmers working in fields requiring information to help their cultivating work in the center of the issue. The exploration is intended to mirror the situation on the information needs of farmers in four towns of Jhang, which is a creating state in the Punjab Pakistan.

Material and Methods

This study employs a quantitative research design to assess the Understanding the Information Needs of the Farmers: Insights into Production, Technology, Marketing, Environmental, Health, Policy and Legal Dimensions 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.

Demographic Information

Table 1

Table 1 shows the frequency of respondents by gender, age and experience.

Demographics

Age	F	%
Less than 25 years	68	17.7%
26-45 years	170	44.2%
46-55 years	140	27.0%
Above 56 years	43	11.2
Total	385	100.0
Education		
Less than matric	83	21.6%
Matric	125	32.5%
Less than Intermediate	83	21.6%
Less than graduation	94	24.4%
Total	385	100.0
Experience		
Less than 5 years	103	26.8%
5-15 years	124	32.2%
16-25 years	109	28.2%
Above than 26 years	49	12.7
Total	385	100.0%

It is very clear from the Table 1 that a large majority of the respondents were under 26 to 46 years old 44.2% and minimum of the respondents were less than 25 years 17.7%. The second demographic variable as shown in table 1 is education, data reported that more than around the half of the respondent have the matric level education but maximum respondents were Matric 32.5%. The last demographic variable was experience of the farmers. According to the data most of the farmers have 5 to 15 years' experience 32.2 % and maximum farming experience 12.7%.

Information Needs of the Farmers Regarding Production and Technological needs

In order to find out the information seeking behavior of farmers of District Jhang, the research focused on investigating the different aspects of information needs of farmers. To fulfill this objective, the researcher collected data from 385 farmers of District Jhang. There needs regarding production and technological factors are as follows:

Table 2: *Information Needs about Production and Technological Factors, N=385*

Technology & Production Factors	M	SD
land preparation and irrigation methods etc.	3.68	1.447
Post-harvest steps	3.79	1.221
agricultural seeding, its types, purchase and cost	4.04	1.025
labor availability in locality	3.59	1.245
pest diseases and its controlling methods	4.03	1.026
new farming methods, tools, and new technology	3.95	1.117
managing soil conservation and soil fertility	3.84	1.187
fertilizers' types, its places, purchases and cost	3.89	1.226

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

Above table indicates the information needs of wheat farmers regarding production and technological factors. As the table shows that farmers needed most the information regarding agricultural seeding, its types, purchase and cost (Mean=4.04, SD=1.025), second most important need was pest diseases and its controlling methods (Mean=4.03, SD=1.026). Table 2 also indicates that farmers are also concerned regarding new farming methods, tools, and new technology (Mean=3.95, SD=1.117). The results further demonstrated that needs regarding fertilizers' types, its places, purchases and cost (Mean=3.89, SD=1.226), and labor availability in locality (Mean=3.59, SD=1.245) are also a point of concern form the farmers. Farmers also want to know about land preparation and irrigation methods (M=3.68; SD=1.4), and about post-harvest steps (M=3.79; Sd=1.2). The most least needed area regarding production needs was the availability of labor in their locality (M=3.59; SD=1.2). So, the data gathered from Jhang farmers demonstrated a clear picture regarding their production and technological factors which can be used for better provision of information services to the local farmers.

Information Needs Regarding Marketing Factors

Marketing factors represents the information regarding latest marketing trends, current and future prices of different crops, pricing details of agrochemicals, details about buyers, collectors, traders and transporters, finances and other different sources. Market analysis is also a crucial step in farming as it makes sure the timely availability of agrochemicals and selling of their crops at proper cost. The following table provides a detailed view of farmers' needs regarding marketing factors.

Table 3: Marketing factors, N=385

Marketing Factors	M	SD
Know about current/forecast prices	4.07	.979
know about expected future prices of different crops in different markets	3.99	1.053
know about prices of agrochemicals	4.01	1.080
know about buyers, collectors, traders and transporters	3.67	1.147
know about finance, its sources, costs/rates	3.79	1.185

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

Table 3 shows the detailed analysis of marketing factors. The most notable factors are needs about current/forecast prices (Mean=4.07, SD=.979), and prices of agrochemicals (Mean=4.01, SD=1.080). Table 3 also indicates that farmers are concerned about expected future prices of different crops in different markets (Mean=3.99, SD=1.053). The results further elaborated those needs related to finance, its sources, costs/rates (Mean=3.79, SD=1.185), and about buyers, collectors, traders and transporters (Mean=3.67, SD=1.147) are also important and must be taken under consideration. Marketing factors accelerate the process of yielding better crops by knowing about the latest agrochemicals, their hazardous effects and market inflation rates. By knowing about selling and purchasing process farmers can better search out the market of their respective crops.

Needs Regarding Environment and Health Factors

Environment and health factors are as important as other factors. In the wake of climate change agriculture sector is the most affected one whether by droughts or floods or any other havoc. By properly identifying environmental needs of farmers, many precautionary measures may be taken to avoid destruction. The following table provides an insight into environmental and health factors.

Table 4: Factors regarding environment and health, N=385

Environment & Health Factors	M	SD
environment friendly practices	3.89	1.037
weather and irrigation water	4.00	.991
health & safety related to agrochemicals usage	3.97	1.089
climate change, adoption and mitigation	3.93	.958
safe disposal of Agro-wastes (agrochemicals and other leftovers)	3.88	1.199
environment, health & safety related to occupational diseases	3.82	1.171
predictions and disaster communication	3.84	1.173

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

Table 4 indicates the information about environment and health factors from the perception of 385 respondents based on the classification given in the table 4. Information needs regarding weather and irrigation water (Mean=4.00, SD=.991) seems to be more anticipated needs of the time. The finding also shows that farmers are really concerned regarding health & safety needs related to agrochemicals usage (Mean=3.97, SD=1.089). In the times of global warming, farmers also showed their concerns relevant to climate change, adoption and mitigation (M=3.93; SD=.09). The farmers are curious to know about the environment friendly practices (M=3.89; SD=1) and safe disposal of agro-waste (M=3.8; SD=1.1). Predictions about disaster

communication is also an important aspect regarding farming and farmers are curious to know about these ($M=3.84$; $SD=1.1$) and also wanted to know about environment, health and safety related to occupational diseases ($M=3.82$; $SD=1.1$). Hence environment and health factors are important to be investigated and information regarding these needs should be provided to farmers on time. This will pave the way to combat hazardous effects of climate change and to yield better production.

Information Needs Regarding Agriculture Policies and Legal Matters

Agricultural policies and legal obligations matter a lot in information seeking behavior of wheat farmers. To find out the status of their needs regarding policy and legal matters, the study collected data from the wheat farmers of District Jhang. The data in the following table depicts the picture of their needs as per the perception of the farmers.

Table 5: Factors regarding agricultural policies and legal matters, $N=385$

Statements	M	SD
Non-governmental activities, subsidies and programs	4.13	1.075
trainings, workshops and field trips	3.83	1.243
governmental subsidies, policies and programs	3.92	.982
agricultural policy and legal matters on policies and regulations	3.80	1.142

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

Table 5 indicated that farmers are more vigilant to know about non-governmental activities, subsidies and programs (Mean=4.13, $SD=1.075$), and showed keen interest in knowing about governmental subsidies, policies and programs (Mean=3.92, $SD=.982$). Farmers also showed interest in knowing about trainings, workshops and field trips (Mean=3.83, $SD=1.243$) and agricultural policy, legal matters on policies and regulations (Mean=3.80, $SD=1.142$).

Results and Discussion

The study's findings provide a comprehensive view of the Understanding the Information Needs of the Farmers: Insights into Production, Technology, Marketing, Environmental, Health, Policy and Legal Dimensions of District Jhang, revealing that they are proactive and engaged information seekers. The results underscore the critical factors that drive their information-seeking behavior, with four key areas showing statistically significant positive relationships with ISB. The findings highlight the critical necessity for relevant and timely information in agriculture, aligning with Yomi-Alfred and Odefadehan's (2007) assertion that extension workers require comprehensive data across various categories to make informed decisions. Farmers prioritized technical information, particularly regarding agricultural seeding (Mean=4.04) and pest control (Mean=4.03), echoing Aina's (1989) observation that technical needs dominate agricultural information requirements. The results also indicated a strong demand for marketing information, such as current prices (Mean=4.07), consistent with Muhammad and Garforth's (1999) findings on the reliance on informal networks.

Environmental and health concerns were significant, with farmers emphasizing the need for information on weather and irrigation (Mean=4.00) and agrochemical safety (Mean=3.97). This reflects the growing importance of sustainable practices in light of climate change. Additionally, a keen interest in agricultural policies and training (Mean=4.13 and Mean=3.83) underscores the need for capacity building, as noted by Bello and Salau (2009). Demographic factors also played a role in shaping information-seeking behavior. The study found that age had a negative effect on ISB, with younger farmers more inclined to seek information, consistent with global

trends where younger individuals are typically more adaptable to new technologies. In contrast, education had a positive effect, indicating that better-educated farmers are more likely to engage with information systems. However, experience did not show a significant effect on ISB, which suggests that while experience is valuable, it may not be enough to meet the rapidly evolving demands for information in modern farming. This highlights the need for continuous education and access to updated information, as technological advancements and market dynamics require farmers to constantly adapt.

Conclusion

This study highlights the critical information needs of wheat farmers in District Jhang, Punjab, revealing that access to relevant and timely information is essential for enhancing agricultural productivity and decision-making. The findings indicate that farmers prioritize technical information regarding agricultural practices, pest control, and market trends, reflecting the growing complexity of modern agriculture. Additionally, concerns about environmental sustainability and health safety underscore the need for information on best practices and climate adaptation strategies. The study also emphasizes the importance of agricultural policies and training programs, indicating a strong desire among farmers for capacity-building initiatives. By addressing these information needs through targeted dissemination strategies, stakeholders can significantly improve the effectiveness of agricultural extension services and empower farmers to make informed decisions. In conclusion, enhancing access to relevant agricultural information is vital for the sustainable development of the farming sector in Jhang. Future research should focus on developing effective communication channels and leveraging modern technologies to better meet the diverse information needs of farmers.

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