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Transforming Agricultural Advisory Services: Assessing the Influence of In-Service Training on Knowledge Acquisition, Skill Enhancement, and Attitudinal Shifts in Punjab, Pakistan

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Abstract
Enhancing the technical and professional competencies of agricultural field advisers through in-service training is essential for providing them with the expertise needed to boost agricultural resilience and performance. The current research examines how well in-service training for agricultural advisors in South Punjab, Pakistan, enhances their professional development, job satisfaction, and knowledge and attitude interventions. A standardized questionnaire distributed via Google Docs via email and WhatsApp was used to gather responses from 300 farm advisors from five areas. A Likert scale was used to gauge responses about the usefulness of the training, technical competency, capacity for problem-solving, collaborative behavior, and technological competence. Based on the results, most respondents believe that in-service training is crucial to enhancing their performance, flexibility, and professional development. However, a deficit in ICT capacity development has been observed highlighting the necessity of an integrated digital training paradigm. For the purpose of increasing the effectiveness and information sharing in the agriculture sector, research suggests that the industry implement systematic and relevant training programs that incorporate technological proficiency and practical applications.

Key Words: Knowledge Acquisition, Skill Enhancement, Attitudinal Shifts, Farm Advisors, In-Service Training, Punjab

Introduction
The agriculture industry has made significant technical advancements while also developing new ideas, knowledge, and technologies. Innovations alone do not result in considerable advancement

unless they are supported by innovative methodologies. Agricultural extension work could streamline emerging innovations by rendering them more accessible to agriculturalists, encouraging adoption (Qamar, 2000). Several research demonstrate that innovative strategies improve farmer learning. According to Kassam *et al*. (2021), farmers mostly rely on mobile apps, extension organizations, and innovative farmers for knowledge. The success and effectiveness of agricultural extension work relies on the agents in charge, having close relationships with rural and farming communities (Al-Nassar *et al.,* 2003). The effectiveness of agricultural extension work is determined by the development of staff understanding, abilities, capabilities, and technical know-how. Al-Nassar *et al.* (2003) found that successful agricultural outreach strategies, information, along with expertise must be available at the right time to meet the educational needs of workers. Previous research found that smartphone apps were the primary mode of contact among Saudi farmers, followed by extension institutes (Kassem *et al.,* (2021) and Dabiah *et al.,* (2023). Human capital is an invaluable resource for organizations facing tough competition. The Training and Development role enables human capital to exercise their skill sets. A comprehensive training program serves as a means of boosting the skills of workers along with enabling them to do their jobs efficiently at their place of employment. Training and development constitute essential strategic tools for improving employee performance and organization. Its goal is to increase employees' abilities by educating individuals in novel methods for accomplishing their jobs. Thus, it aids in updating their understanding of how to conduct their jobs, thereby improving their effectiveness and, as consequently, the productivity of an organization. Organizations may improve the capacity of their present staff through giving them extensive training and development opportunities. Training for workers provides several broad terms advantages, including elevated satisfaction with work as well as spirit, improved inspiration, boosted effectiveness of processes leading to monetary gains, a greater ability for implementing novel technologies and approaches, more creativity in tactics and services, along with decreased turnover of staff members. Management experts have provided numerous explanations for the concept of training. From all angles, they were all in agreement that training is the tool for enabling workers to gain insight into their comprehension about "the most effective manner for employing evolving and innovative technologies to enhance efficiency on the job." In a similar vein it offers unique perspectives into how individuals can perform successfully in innovative work designs, especially for remote groups of people, as well as how to interact with clients as well as other stakeholders based on multiple perspectives for outstanding support. According to Goldstein and Ford (2002) and Alotaibi *et al.,* (2019)., training is an organized approach to acquire knowledge and growth which helps both individuals and organizations. In simple terms, there is an organized approach to developing and improving the quality of new and existing personnel. Goli *et al.,* (2022). described training as the systematic process of collecting and enhancing the information, skills, and behaviors that are needed by workers to accomplish their respective tasks. The main objective of it, according to Norsida *et al.,* (2019), is to prevent economic troubles and emergencies in organizations which led to poor productivity among workers. A number of organizations have suffered damage as a result of waste caused by blunders caused by employees having lacked the precise abilities required for performing their duties efficiently. According to the preceding, the primary purpose of training is to modify mindset via learning in order to achieve higher performance in a given activity or set of activities (Bakhat *et al.,* 2020). The primary goal of training is to elevate staff competencies as well as prepare employees to fulfil organizations' present and future demands. In line with this, Omeh *et al.,* (2014) says that the long-term success of any company's endeavors is mostly determined by the competence of its employees and their performance improvement via training and continuing education. In this respect, human resources professionals believe that a company's greatest assets lie in the highest caliber of its workers, emphasizing the necessity of training that is aligned with staff training requirements. According to Cekada (2010) effective company

executives perceive their personnel as their competitive advantage in the current competitive context. Essentially, it is widely accepted that training is a sequence of actions undertaken by organizations to enable staff to gain knowledge and skills in order to fulfil organizational goals successfully. Putting it another way, training is an activity of intervening aimed at improving personnel's knowledge and skills with the aim of enhancing organizations' product and service offerings as well as increasing clientele. In light of this, we may argue that training for employees is an important predictor of organizational effectiveness, competitiveness, and economic growth. This illustrates the reason why individuals training is progressively improving career opportunities and progression, in addition to receiving more pay and longer employment tenure. Considering the fact that the two phrases are used collectively, development and training are often defined differently. Noe (2017) views training as an intentional attempt by an organization to offer workers employment-related abilities, knowledge, skills, and behavior which may be used in their daily tasks. Development, in the opposite the same direction, refers to "formal education, job situations, interactions, skills, and abilities that help personnel prepare for potential jobs or positions". Given the unique function that both serve in organizations. McKinney, R. (2018) believe that the success and efficiency of any organization in the contemporary worldwide economy, particularly entails the application of new technologies as well as enhanced response to consumer demands, is largely based on educational and professional development. In previous years, as defined by Aguinis, Joo, and Gottfredson (2013), "activities that lead up to gaining new knowledge or skills for purposes of personal growth while training is applying a systematic and organized approach for acquiring information with the goal of cultivating and enhancing efficiency of not just one individual but additionally members of the group and the organization as a whole". El-Shafie Azam and Ibrahim (2022) explain training as "pertaining to a set of activities aimed at facilitating the learning of knowledge, mindset, and abilities among employees in an organization in order to boost their present employment performance and contribute to the accomplishment of organizational goals" and suggests that the latter differs compared to development, which includes "for a long time deliberate attempts to improve the total growth of staff members that will result in the fulfilment of organizational goals. Enhancing staff competency, efficiency, and skill advancement through training and development is essential for boosting an organization's long-term viability and productivity (Kazi, Wahid and Arif (2019). Even though training programs are widely used, employee understanding and perception have a big impact on how effective they are. Employee attitudes prior to training and their dedication to using newly learnt skills in the workplace frequently influence the training's outcome (Sanchez (2016). Additionally, employees' motivation and engagement are impacted by the availability of training and development opportunities as part of an organization's psychological contract with them (Kaur and Kaur, (2015). According to Rahman and Aman (2017) employees' perceptions of the efficacy of training are influenced by their personal expectations of the immediate benefits they will receive from it, including skill development, career promotion, and financial incentives. However, training results may suffer if staff members don't always understand the organization's motivation for the training (Mohan, Sharma and Kaur (2015). Even though training has been shown to improve organizational performance and competitiveness, some businesses are still hesitant to spend money on it because they believe newly hired staff members are already sufficiently skilled (Omoregie and Isitor (2015). According to Spencer and Spencer (1993), these presumptions could point to problems with the original employment procedure. Nonetheless, it is generally acknowledged in the contemporary workforce that training is vital to guarantee that workers have the skills and flexibility needed to satisfy changing job demands (Jones and Patel (2019). According tp Khan *et al.* (2024), training improves client fulfilment, effectiveness, skill development, and overall organizational efficiency. The need for training for workers has increased dramatically due to the multifaceted nature of work environments, technological breakthroughs, and quick organizational

shifts. Before launching training initiatives, organizations must determine their training needs in relation to their strategic objectives (Olaniyan & Ojo, 2008). Evaluating training efficacy is critical to ensuring its impact on staff productivity, as organizational growth is inextricably related to employee development. Talented and informed workers give businesses a competitive edge by fostering innovation, efficiency, and financial sustainability (Ibenu, 2016). Therefore, training and education continue to be essential to human performance, improving both individual and organizational achievement (Khan, Khan and Khan, 2011). Without giving its workers, the fundamental abilities and information needed for greater efficiency and production, no business can prosper. Employees can learn while carrying out their regular work duties through the use of in-service or on-the-job training (OJT). Its main goal is to acquaint employees with their workplace, including the processes, tools, and equipment they will frequently use. OJT is intended to teach job expertise under the supervision of an experienced worker, giving trainees practical experience in managing difficult situations they might face in their roles (Adamu, 2008). In order to ensure direct skill transfer, trainees also pick up skills by watching and copying their superiors. On the other hand, OJT is frequently carried out carefully with a deductive reasoning approach. Baum and Devine (2007) and Alfandi (2020) argue that yet, that off-the-job training may be a better option because it enables workers to comprehend the training's principles in a reasonable amount of time and money. The worldwide economy was greatly affected by the COVID-19 epidemic, which led businesses to realize how important it is for staff members to have ongoing training and development in order to improve their productivity along with their professional development. Because it promotes improved job control, behavior, and effectiveness, Onyekwere and Babangida (2022). backs up the idea that staff training has inherent worth. Additionally, training prepares workers for future jobs and gives them a thorough understanding of their job obligations. According to Jayakumar and Sulthan (2014), training is an organized learning process that blends information transfer with skill development. Additionally, it ensures that workers carry out their duties effectively by fostering an understanding of organizational policies and procedures. By giving workers the skills, they need to quickly adjust to shifting work environments, organizations can accomplish their strategic objectives with the right training (Jones, George, and Mill, 2000). Furthermore, training helps to increase quality, customer satisfaction, and overall work performance, all of which are critical to organizational success. According to Ferreira and Leite (2010) and World Development (2018), it also lowers turnover rates while increasing performance, competitiveness, staff retention, and attendance. Nonetheless, a lot of businesses overlook the fact that better job performance takes time to manifest the advantages of training. The successful application of learnt skills in the workplace is the ultimate test of training and development efficacy. According to Jayakumar and Sulthan (2014), training is most successful when it is in line with organizational, job-related, and individual needs as identified by a needs assessment. In the end, training plays a critical role in improving employee performance and keeping businesses efficient and competitive.

An overview of the training and development findings

The main conclusions from several studies regarding the value of training and development in raising employee abilities, motivation, job satisfaction, and organizational performance are compiled in this table.

Table 1: An overview of the training and development findings

Authors	Findings
Khan (2011), Khan (2024)	Training and development enhance human productivity, efficiency, organizational performance, and profitability.
Goldstein and ford (2002)	Learning and development improve staff efficiency, personal growth, and organizational goal achievement.
Chruden and Sherman (1981) and Opatha (2021).	Employees need continuous training to improve competence and performance.
Ganesh and Indradevi (2015), Khan *et al.,* (2024)	Training enhances initial skills and expertise, leading to increased productivity.
Krishna (2022)	Training facilitates learning and skill development to improve job performance and achieve organizational goals.
Chen *et al.,* (2017)	Continuous employee training and development are crucial for effective personnel management.
Galanou and Priporas (2009) and Yashodha (2023)	Training is a key method for increasing staff productivity and achieving organizational objectives.
Rohan & Madhumita (2012)**.** and Tabassum (2021)	Investing in decision-making, problem-solving, and teamwork training enhances staff efficiency and organizational growth.
Satterfield and Hughes (2007) and Nda and Fard (2013)	Training improves job competencies, perceptions, and overall productivity.
Simon and Kimberley (2002), Opoku (2024) and Bandara (2022).	Training fosters employee commitment and maximizes their capabilities.
Konings and Vanormelingen (2009); Colombo and Stanca (2008); and Sepulveda (2005)	Training significantly impacts company success and achieving business goals.
Singh and Mohanty (2010),	Effective organizations invest in employee training to enhance job productivity and morale.
Atif *et al.,* (2010) and Chauhan and Jindani (2023).	Training minimizes absenteeism and turnover while increasing worker satisfaction and engagement.
Smith and Jones (2018)	Training improves employee efficiency, motivation, and customer loyalty, reducing supervision needs.
Hossain and Ismail (2016).	Training and development are key motivators for employees.
Khan *et al.,* (2011)	Training programs positively impact organizational effectiveness and overall performance.
Falola, Osibanjo and Ojo (2014) and Haruna and Osa-Afiana (2022).	Strong correlation exists between training, employee efficiency, and competitiveness.
Tahir *et al.,* (2014),	Training ensures a skilled workforce, enhances career growth, and improves productivity.
Ampomah (2016)	Employees recognize training's value, which increases motivation and job performance.
Kanuto (2024) and Pop (2021).	Training is crucial for staff development, retention, and organizational success. It benefits both employees and organizations by improving competencies and efficiency.
Joe-Okidi, Amah and Okocha, (2022)	Training is essential for agricultural staff to educate farmers and adapt to technological advancements.

Agricultural Farm Advisors' Views from Literature on the Need for In-Service Training

The importance of in-service training for agricultural farm advisors is highlighted in this table, with a focus on how it contributes to professional development, knowledge enhancement, and technological adaptation.

Table 2: Summary of Findings on In-Service Training for Farm Advisors

Authors	Findings
Merriam, Caffarella, and Baumgartner (2007)	In-service training helps staff adapt to global developments, new technologies, and organizational reforms.
FAO and World Bank (2000)	Extension agents are key providers of agricultural knowledge, technical expertise, and community support.
Ghimire & Martin (2011)	Effective extension agencies rely on educators' ability to identify issues, develop programs, and use evaluation for improvement.
Raza *et al.,* (2015); Ashraf *et al.,* (2015)	Education enhances farmers' understanding of agricultural operations and promotes change.
Idrees (2003)	Agricultural extension is essential for educating farmers and promoting better production techniques.
Joerger (2002)	Training improves knowledge, skills, and attitudes, leading to better performance and service delivery.
GOP (2014)	Training enhances efficiency, motivation, and job effectiveness.
GOP (2010)	Pre-service training is academic, while in-service training fosters creativity among farmers and extension workers.
Qayyum *et al.,* (2011)	In-service training needs for agricultural extension professionals change over time.
Roberts and Dyer (2004)	In-service education programs should be updated to enhance extension workers' skills.
Swanson *et al.,* (1998)	Competency-based in-service training improves the professional skills of extension workers and experts.

Statement of Problem

Farm advisors' continuing professional development is critical to providing effective agricultural advisories. However, there are gaps in their understanding of how in-service training affects their attitudes, abilities, and knowledge. Due to inadequate training quality, accessibility, and relevance to changing agricultural patterns and numerous advisers find it difficult to use newly learnt competencies. In order to increase the efficacy of advisory services and agricultural productivity, this study looks at how in-service training affects farm advisors' knowledge, skill development, and attitude changes. Keeping in view the context the present research aimed to evaluate how in-service training has affected agricultural advisers' technical proficiency and knowledge and to assess how training influences the attitudes, drive, and flexibility of farm advisors.

Methodology

Research Design

This study employs a quantitative research design using a survey-based approach to assess the impact of in-service training on agricultural farm advisors' skills and job performance.

Sampling Technique and Population

A total of 300 agricultural farm advisors were randomly selected from five districts of South Punjab, Pakistan, ensuring geographical representation. The districts included Bahawalpur, Bahawalnagar, Rahim Yar Khan, Muazzafargarh, and Lodhran. A simple random sampling technique was used to minimize selection bias.

Data Collection

Data was collected via an online structured questionnaire using Google Docs, distributed through email and WhatsApp. The questionnaire was designed using a 5-point Likert scale to assess respondents' agreement on various aspects of in-service training, such as technical skills, job performance, career progression, problem-solving, and ICT proficiency.

Data Analysis

Descriptive statistics, including mean, standard deviation, and percentage distributions, were used to summarize the data.

Table 3: Demographic Characteristics of Respondents

Variable	Category	Frequency (n=300)	Percentage (%)
Gender	Male	230	76.7
	Female	70	23.3
Age Group	20-30 years	85	28.3
	31-40 years	110	36.7
	41-50 years	70	23.3
	Above 50 years	35	11.7
Education	Bachelor's Degree	120	40.0
	Master's Degree	150	50.0
	PhD	30	10.0
Work Experience	Less than 5 years	90	30.0
	5-10 years	110	36.7
	11-15 years	60	20.0
	Above 15 years	40	13.3

Table 3 describes demographic data of respondents and show that the sample consisted of 300 agricultural farm advisors, with 76.7% men and 23.3% women responding. Most of them (36.7%) were between the ages of 31 and 40. In terms of education, 10% had a PhD, 40% have a bachelor's degree, and 50% completed a master's degree. Thirty percent were with less than five years of work experience, while thirty-seven percent had five to ten years. This wide range of demographics guarantees a thorough comprehension of the effects of in-service training on various agricultural advisor categories. This study highlights the necessity of structured programs adapted to new agricultural and technical developments and offers insightful information about the efficacy of in-service training in skill building and professional growth.

Perceptions of Farm Advisors Regarding Need for In-Service Training

Training is an important tool that involves the transfer of new technologies, skills, behavior and attitude to develop and maintain the workers' competencies to perform their assigned role more effectively and efficiently. Similarly, respondents need training to counter the quarries regarding different agricultural practices, technological advancement and knowledge enhancement to educate and build capacity of farmers to increase yield per unit area because agricultural scenario in case machinery/ technology is constantly changing and their need to keep abreast of new technologies. Respondents were asked to narrate their satisfaction level by using 5-point Likert scale (1=Strongly disagree 2= Disagree 3= Neutral 4=Agree 5= Strongly Agree). EFS were asked what they perceive about the need of in-service trainings and to what extent they agree with statement that are in-service trainings are Essential for, and response is given in Table follows.

Table 4: Mean ± STD of opinions / extent of agreement to In-service Training needs in study domain

Statements Inservice training is essential for	**Response (Extent of agreement measured on 5-point Likert scale)**						
	1	**2**	**3**	**4**	**5**	Mean	±STD
	f (%)	f (%)	f (%)	f (%)	f (%)		
Enhancing professional skills and knowledge.	2 (0.6)	13 (4.3)	53 (17.7)	83 (27.7)	149 (49.7)	4.21	0.93
Job effectiveness and productivity	7(2.3)	17(5.7)	32 (10.7)	92(30.7)	152(50.7)	4.22	1.00
Update industry advancements in addition to standard practices.	5(1.7)	11(3.7)	26(8.7)	105(35.0)	153(51.0)	4.30	0.90
Professional advancement and accomplishment.	7(2.3)	22(7.3)	23(7.7)	109(36.3)	139(46.3)	4.17	1.01
Fostering an excellent atmosphere in the workplace.	1(0.3)	23(7.7)	34(11.3)	123(41)	119(39.7)	4.12	0.91
Increasing satisfaction with work favorably.	3(1.0)	11(3.7)	29(9.7)	131(43.7)	126(42.0)	4.22	0.84
Aggregate score	1.38	5.4	10.97	35.73	46.57	4.21	0.93

Source; Data collected 2022-23 Scale (1=Strongly disagree 2= Disagree 3= Neutral 4=Agree 5= Strongly Agree)

Table 4 reviews the responses from participants regarding the extent to agreement regarding the need for in-service training and what they perceive. According to the survey, 77.4% of participants agreed that in-service training is crucial for improving professional knowledge and abilities (4.21±0.93), with 27.7% agreeing and 49.7% strongly agreeing. Similarly, 50.7% strongly agreed and 30.7% agreed that in-service training increases job effectiveness and productivity, according to 81.4% of respondents (4.22±1.00). 86.0% of respondents agreed that in-service training is important for keeping up with industry innovations (4.30±0.90), and 79.6% agreed that it is important for professional advancement and achievement (4.17±1.01). Furthermore, according to 71.7% of respondents, training helps people advance their careers. These results are consistent with Nudy (2015), who highlighted how training improves knowledge and organizational abilities for growth. The findings corroborate those of Jagero et al. (2012), who discovered that skilled workers complete jobs more quickly. Mozael (2015) provides additional evidence that training improves worker productivity and quality. Furthermore, Tetteh et al. (2017) contend that training and development initiatives that are well organized have a favorable effect on the performance of both employees and the organization. Rahman et al. (2013) warn, however, that training by itself does not always equate to better performance because some people may not advance in their careers even after completing training courses. These conflicting findings emphasize the necessity of thoughtfully created useful training curricula that adapt to staff demands and industry developments. The overall score indicates a high level of agreement, with 82.30% of respondents strongly agreeing or agreeing (mean of 4.21 ±0.93). This indicates that in-service training is commonly seen to be necessary for both professional and efficient job improvement.

Table 5: Mean STD of opinions / extent of agreement to In-service Training need for Attitudinal Interventions in Agricultural Extension Field Staff

Statements Inservice training is essential for attitudinal interventions by	**Response (Extent of agreement measured on 5-point Likert scale)**						
	1	2	3	4	5	Mean	±STD
	f (%)	f (%)	f (%)	f (%)	f (%)		
Developing good attitudes as well as inspiration amongst agricultural field staff.	10 (3.3)	11 (3.7)	31 (10.3)	119 (39.7)	129 (43.0)	4.15	0.98
Developing an optimistic attitude as well as flexibility among EFS in the face of challenging circumstances.	6 (2.0)	7 (2.3)	29 (9.7)	123 (41.0)	135 (45.0)	4.25	0.87
EFS views towards implementation of modernized agricultural technology and methods	10 (3.3)	11 (3.7)	31 (10.3)	91 (30.3)	157 (52.3)	4.25	1.01
Encourage teamwork and collaboration among agricultural field personnel.	7 (2.3)	17 (5.7)	52 (17.3)	105 (35.0)	119 (39.7)	4.04	1.00
transform the attitudes of agricultural field personnel towards environmentally sound and ecologically beneficial methods.	1 (0.3)	8 (2.7)	47 (15.7)	96 (32.0)	148 (49.3)	4.27	0.85
Fostering a positive mindset as well as flexibility among EFS in the face of challenging circumstances.	12 (4.0)	13 (4.3)	32 (10.7)	113 (37.7)	130 43.3)	4.12	1.03
Aggregate score	**2.27**	**3.01**	**12.61**	**35.63**	**45.66**	**4.19**	**0.95**

Source; data collected 2022-23 Scale (1=Strongly disagree 2= Disagree 3= Neutral 4=Agree 5= Strongly Agree)

Table 5 recapitulates the responses from participants regarding the extent of agreement to in-service training needed for attitudinal interventions in agricultural Extension Field staff

According to the survey, in-service training increases the productivity and calibre of agricultural field workers, according to 80.7% of respondents (4.150.98). Likewise, 82.7% thought it promotes motivation and positive attitudes (4.25±0.87). 86.0% of respondents thought that flexibility is important in difficult situations (4.25±1.01), and 81.3% said that it has a role in encouraging ecologically sound agriculture methods (4.04±1.00). Furthermore, 81.0% agreed that in-service training promotes flexibility and a positive outlook (4.27±0.85). Furthermore, according to 85.7% of respondents, this type of training improves job satisfaction (4.12±1.03). The overall findings indicate strong support for in-service training, with 45.66% of respondents strongly agreeing and 35.63% agreeing (4.19±0.95), emphasizing its critical role in enhancing professional competence and attitude. These results are consistent with those of Asfaw et al. (2015), who discovered that skill acquisition through training and development (T&D) programs improves employee performance. This opinion is further supported by Jagero et al. (2012), who show that skilled workers complete jobs more efficiently. Ombayo et al. (2014) emphasize the need for ongoing training since industry demands and external changes can render employees' skills obsolete. Likewise, Olaniyan and Ojo (2008) emphasize that skill gaps result from a lack of planned training. According to Tetteh et al. (2017), well-thought-out T&D programs have a beneficial effect on organizational and employee performance. Furthermore, Noe et al. (2015) contend that in order to

match workforce competencies with organizational objectives, changing company strategies call for continual skills development. Together, these observations demonstrate how important in-service training is for helping agricultural field workers become more flexible, satisfied with their jobs, and environmentally conscious.

Table 4.2.2: Mean ± STD of opinions / extent of agreement to In-service Training need for Knowledge building among EFs in Agriculture

Statements **Inservice training is essential for Knowledge Building among EFs for**	**Response (Extent of agreement measured on 5-point Likert scale)**						
	1	2	3	4	5	Mean	±STD
	f (%)	f (%)	f (%)	f (%)	f (%)		
Enhancing abilities and understanding.	7 (2.3)	31 (10.3)	34 (11.3)	83 (27.7)	145 (48.3)	4.09	1.10
Keeping informed of the most recent technological innovations and developments in the field of agriculture.	10 (3.3)	8 (2.7)	58 (19.3)	105 (35.0)	119 (39.7)	4.05	1.00
Being beneficial for the competitive edge of EFS in this sector.	10 (3.3)	9 (3.0)	41 (13.7)	109 (36.3)	131 (43.7)	4.14	0.99
Acquiring specialized expertise required for tackling current issues regarding agriculture.	2 (0.7)	23 (7.7)	49 (16.3)	77 (25.7)	149 (49.7)	4.16	1.00
Empowering EFS to promote novel and environmentally friendly strategies to address agricultural issues	12 (4.0)	11 (3.7)	62 (20.7)	82 (27.3)	133 (44.3)	4.04	1.08
Strengthening the ability to solve problems amongst field staff in an ever-changing agricultural context.	4 (1.3)	7 (2.3)	69 (23.9)	67 (22.3)	153 (51.0)	4.19	0.96
Assisting in developing collaboration and exchanging information among EFS	14 (4.7)	11 (3.7)	49 (16.3)	76 (25.3)	150 (50.0)	4.12	1.10
Aggregate score	2.80	4.77	17.22	28.51	46.67	4.11	1.03

Source; data collected 2022-23 Scale (1=Strongly disagree 2= Disagree 3= Neutral 4=Agree 5= Strongly Agree)

According to the results, 76.0% of participants concurred that in-service training improves skills and comprehension (4.09±1.10). Furthermore, 80.0% of respondents felt that such training gives them a competitive edge in the industry (4.14±0.99), and 74.7% said it is necessary to stay up to date with agricultural technology improvements (4.05±1.00). Additionally, 71.6% of respondents praised in-service training's significance in advancing ecologically friendly agricultural practices (4.04±1.08), and 75.4% saw it as crucial for gaining specialized competence in addressing agricultural concerns (4.16±1.00). Additionally, 75.3% of respondents believed that it promotes cooperation and information sharing among agricultural field workers (4.121.10), and 72.3%

recognized its significance in enhancing problem-solving skills in a changing agricultural context (4.190.96). Strong agreement on the beneficial effects of in-service training on knowledge acquisition is indicated by the overall mean score of 4.11±1.03, with 28.51% agreeing that it is essential for professional development and 46.67% strongly agreeing. Nel *et al.*, (2011) found that training improves employees' abilities and knowledge at all organizational levels, and these results support their findings. similarly, *Kum et al.*, (2014) stress that successful organizations and high production are driven by well-trained staff. Diab and Ajlouni (2015) emphasized that training needs to adapt to changing personnel competencies, product changes, and technological advancements. The research adds credibility to the findings of Jagero et al. (2012), who discovered that skilled workers are more productive. According to Erasmus et al. (2009), training enhances one's capacity for making decisions and solving problems, which raises output. Olaniyan and Ojo (2008) and Ombayo et al. (2014) emphasize that in order to avoid competency gaps, ongoing training programs are necessary for abilities that have become obsolete owing to external pressures. These results support the idea that training organizations as learning institutions for long-term success by enhancing individual competence while also promoting flexibility, teamwork, and ecologically friendly farming methods.

Table 6: Mean ± STD of opinions / extent of agreement to In-service Training need for Knowledge building among Farm Advisors Agriculture

Statements **Inservice** training is **essential for Skills Enhancement among EFs** as for	**Response (Extent of agreement measured on 5-point Likert scale)**						
	1	**2**	**3**	**4**	**5**	**Mean**	**±STD**
	f (%)	**f (%)**	**f (%)**	**f (%)**	**f (%)**		
Enhancement of technical skills in crop production, protection, marketing and others	1 (0.3)	7 (2.3)	36 (12.0)	117 (39.0)	139 (46.3)	4.29	0.79
Being good at improving practical skills related to crop cultivation and management	1 (0.3)	4 (1.3)	41 (13.7)	133 (44.3)	121 (40.3)	4.23	0.76
Helping to improve problem-solving skills to handle difficult situations	2 (0.7)	4 (1.3)	25 (8.3)	145 (48.3)	124 (41.3)	4.28	0.73
Creating soft skills, for example teamwork and communication among EFS	1 (0.3)	7 (2.3)	30 (10.0)	100 (33.3)	162 (54.0)	4.38	0.79
Adding to proficiency regarding use and safety measures for agricultural machinery and equipment	2 (0.3)	8 (6.7)	12 (4.0)	134 (44.7)	144 (48.0)	4.37	0.74
Fundamentally aiming at staying informed on safety protocols and best practices in agricultural setups	3 (1.0)	11 (3.7)	19 (6.3)	126 (42.0)	141 (47.0)	4.30	0.82
Being a tool to enhance the ICTs skills among EFS	2 (0.7)	7 (2.3)	32 (10.7)	145 (48.3)	114 (38.0)	4.21	0.77
Aggregate score	0.51	2.84	9.29	41.41	44.98	4.29	o.77

Source; data collected 2021-2022 Scale (1=Strongly disagree 2= Disagree 3= Neutral 4=Agree 5= Strongly Agree)

According to the results, in-service training improves technical abilities in crop production, protection, and marketing, according to 85.3% of respondents (4.29±0.79). Furthermore, 89.6% felt that it increases problem-solving abilities for dealing with challenging circumstances (4.28±0.73), and 84.6% thought it improves practical skills linked to agricultural production and management (4.23±0.76). Additionally, 92.7% of respondents acknowledged its function in guaranteeing proficiency in using and maintaining agricultural machinery and equipment (4.37±0.74), and 87.3% acknowledged its value in developing soft skills including teamwork and communication (4.38±0.79). Furthermore, according to 89.0% of respondents, in-service training is essential for remaining up to date on safety procedures and industry best practices in agricultural settings (4.30±0.82). However, only 55.8% of respondents agreed (4.21±0.77) when asked if training is a useful technique for improving ICT abilities. With an average mean of 4.29±0.77, the overall results show that 86.39% of respondents highly endorsed the function of in-service training in skill enhancement, underscoring its importance in providing agricultural workers with a variety of capabilities. These findings are consistent with Alshuwairekh (2016), who highlights that training enhances organizational productivity overall in addition to enhancing employees' capacities. Employees that participate in regular training programs get new skills and information that increase their competence and effectiveness in their roles, as further confirmed by Asfaw *et al.,* (2015). The broad consensus regarding the importance of in-service training in fostering soft skills and problem-solving abilities supports earlier findings that well-trained staff members greatly enhance operational effectiveness and teamwork. Continuous learning is essential for maintaining workplace safety and technological flexibility, as evidenced by the strong awareness of training's significance in machinery proficiency and safety regulations. The comparatively lower level of agreement about the improvement of ICT skills, however, points to a possible weakness in the integration of digital training into agricultural training programs. These results highlight the necessity of organized and continuous training programs to guarantee that staff members stay knowledgeable about changing agricultural techniques while encouraging cooperation, creativity, and productivity in the workplace.

Conclusion

The study's conclusions highlight how important in-service training is for agricultural field workers' enhancement of professional abilities, job performance, and job satisfaction. A significant proportion of respondents agreed that training is crucial for improving productivity, advancing career advancement, and upgrading expertise in the industry. The study also emphasizes how in-service training improves problem-solving skills, fosters a healthy work atmosphere, and increases flexibility in response to shifting agricultural trends. Furthermore, the findings support the notion that training is essential for the development of both hard and soft skills, such as cooperation, communication, and agricultural machinery competency. The report does, however, also point out a possible weakness in ICT instruction, indicating the necessity of a more thorough strategy for developing digital skills. As a whole, responders' overwhelming unanimity emphasizes the need for continuous learning programs customized to employee demands and industry innovations.

Recommendations

The following recommendations are made in the light of present research findings that

1. Organizations should put in place organized, sector-specific training programs that fill in technical and digital skill gaps in order to optimize the advantages of in-service training.
2. Comprehensive requirements analyses should serve as the foundation for training programs in order to guarantee alignment with changing agricultural technologies and personnel competencies. Furthermore, combining digital learning resources with practical, hands-on training techniques will improve application and retention of knowledge.

3. To evaluate the effects of training and increase its efficacy over time, regular evaluation and feedback systems should be put in place.
4. Organizations can also promote professional development opportunities, mentorship programs, and knowledge exchange in order to create a culture of learning.
5. To ensure that workers have the digital skills they need to improve productivity and creativity, special focus should be paid to integrating ICT training into agricultural education.
6. Organizations can improve worker performance, increase workforce flexibility, and promote long-term success in the agriculture industry by using these strategies.

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