

Research Article



The Competencies regarding Administrative and Supervisory Role of the Agricultural Extension Officers in the Rural and Agricultural Development of Pakistan

Muhammad Zafarullah Khan

The University of Agriculture, Peshawar, Khyber Pakhtunkhwa, Pakistan.

Abstract | Agricultural Extension Officers (AEOs) plays a crucial character regarding agricultural and rural development of Pakistan through supervision and administration of agricultural activities. The current study was carried out to measure the level of competency of AEOs in skills regarding management of supervision and administration that is considered necessary in order to deal with farmers where a wide range of variations exists in their personalities and habits. A significant difference was reported in required and possessed competencies of preparing training schedules regarding crops followed by timely appointment and issuance of duties to junior staff for effective and efficient work. Results of the study reported that there is utmost need of training in competencies regarding identification of input supply dealers' malpractices and evaluation of pesticide companies activities. Timely appointment and delegation of authorities to subordinate staff were the top two utmost possessed competencies to perform efficiently and effectively of their assigned responsibilities followed by the third top ranked competency of helping field assistants to plan extension activities. The lowest competencies of AEOs reported were official inquiries conduction, identification of malpractices of inputs supply dealers and evaluate the working of fertilizer dealers. The study recommended that the gap among the competencies of AEOs might be minimized by increasing their educational level and providing training opportunities especially in supervision and administration to deal effectively with all the stakeholders of the farming community.

Received | May 04, 2017; **Accepted** | July 19, 2017; **Published** | August 24, 2017

***Correspondence** | Muhammad Zafarullah Khan, The University of Agriculture, Peshawar, Pakistan; **Email:** drzafar@aup.edu.pk

Citation | Khan, M.Z. 2017. The Competencies regarding administrative and supervisory role of the agricultural extension officers in the rural and agricultural development of Pakistan. *Sarhad Journal of Agriculture*, 33(3): 412-418.

DOI | <http://dx.doi.org/10.17582/journal.sja/2017/33.3.412.418>

Keywords | Agricultural extension officers, Agriculture and rural development, Competencies, ranking order and supervision and administration

Introduction

Agriculture is the foremost segment of the Pakistani economy as it contributes 19.8% to Gross Domestic Product (GDP) and engages 42.3% of the total country labor force (GoP, 2016). Moreover it also provides raw materials to industry and contributes to the country's exports. Agriculture sector is also a large market for the industrial products such as fertilizer, pesticide, tractors and agricultural equipments. Major

crops of the agriculture are wheat, cotton, sugarcane, and rice. Supervision and administration is a special field of general agricultural extension that will help you to situate the subject among other developmental efforts and to appreciate the educational and scientific nature of farming activity. For extension system to be effective and goal-oriented, extension practitioners must always keep in mind certain underlying principles of supervision and administration that must be utilized for effective extension work in the field.

Agriculture sector of Pakistan may be divided into five subsectors comprising major crops, minor crops, fisheries, forestry and livestock. Livestock is the most important subsector of the agriculture. According to the [Pakistan Economic Survey \(2015-16\)](#), livestock contributes 55.85 percent in the agricultural GDP of Pakistan. Crops and livestock constitute the large part of the agricultural output. There are five different classes in the agriculture sector of Pakistan namely owner, tenant, owner cum tenant, lease and owner cum lease ([GoP, 2016](#)).

Agricultural Extension Officers are responsible for transfer of modern technology to the farmers at their door steps of diversified mentalities to enhance their major and minor crop production (mandate of Agriculture Extension). Self sufficiency in agriculture products was received a setback and the main reason highlighted by the researcher was inefficiency of Provincial Department of Agriculture Extension ([Naz, 1987; Iqbal, 1990; Idrees, 1994; Urooba, 2001](#)). Agriculture Extension Officers serves as bridge between Agriculture Research System and Farmers, they work as facilitators and guiding the farmers and involving them in decision making and in usage of appropriate modern technology that leads to sustainable agriculture development in rural areas ([Hayat, 1982](#)). Agriculture Extension Officers working with farming communities in their jurisdiction, it is necessary that they must be equipped with modern knowledge so that they can assist farmers in a better way in specific farming through their expertise ([Hussain, 1983](#)).

[Khan et al. \(2004\)](#) informed that Agriculture Extension officers must possess some good qualities and have knowledge in subject of communication skills, possess persuasive abilities with different psychological personalities, quality of works and the use of technology that plays an important role in efficiency of agriculture extension officer. Therefore, this study was conducted in order to probe about the competencies regarding administrative and supervisory role of the agricultural extension officers in agriculture and rural development of Pakistan.

Limitation of the study

Findings of this study are limited to Agriculture Officers of the Agriculture Extension Department of Khyber Pakhtunkhwa Province, Pakistan. Results of this study are based on self reported and self perceived competencies. Moreover, questionnaire was used in-

stead of interview schedule. This can be a limitation if the above mentioned assumption is violated.

Materials and Methods

This study was conducted in Khyber Pakhtunkhwa province of Pakistan for the assessment of the administrative and supervisory competencies of the AEOs. The research was based in all 24 districts of Khyber Pakhtunkhwa (KP) and 111 Agricultural Extension Officers were the sample of the study. Primary data were collected by mailing well-designed questionnaire which was pre-tested already and published sources were used for obtaining secondary data. Parameters of supervision and administration capacity of AEOs were measured which were also followed by many previous researchers ([Easter, 1985; Najjingo et al., 1991; Randavary and Vaughn, 1991; Ali, 1991](#)). To assess their competencies level in supervision and administration, Likert scale was used from 1 to 5 indicating from very low to very high. Data were analyzed statistically using Statistical Package for Social Sciences (SPSS). Demographic and social characteristics for the capacities in Supervision and administration were obtained from all AEOs. The self perceived Weighted Average Index (WAI) of AEOs was measured for the assigned attribute on 5 point Likert scale ([Qadeer, 1993](#)).

Chi-square test was applied for the relationship in demographic and social characteristics of AEOs in supervision and administration. In this capacity of each parameter by comparing between the present as well as desired levels of Extension Agents, a t-test was applied.

Results and Discussion

Demographic characteristics of the individuals play an important role in their attitude towards the new innovations. It also has a significant effect on the competencies development of the AEO's and therefore, during the survey they were investigated about their important characteristics such as age, job experience and education etc.

Age level of the respondents

The data in [Table 1](#) regarding age of the Agricultural Extension Officers shows that the average age was 44 years, maximum respondents were in age group of 46-55 years with 42.34%. The second maximum respond-

ents were in the age range of 25-45 years with 30.23% share, the maximum age was 56 years and above with a frequency of 31 constituting 27.93%. Al-Zahrani (2017) reported that maximum of the Agricultural Extension workers (34%) had age of 31-40 years whereas minimum (16%) had age of 51-60 years.

Table 1: *Distribution of respondents by Age.*

AEOs Age	Frequencies	Percentage
25 – 45	33	30.23
46 – 55	47	42.34
56 and more than 56	31	27.93
Total	111	100.00
Average	44.21	
Minimum: 25 Maximum: 60		

Source: Field Survey

Table 2: *Distribution of respondents regarding Experience in Job.*

Experience of AEOs (in years)	Frequency	Percentage
1 – 10	25	22.50
11 – 15	16	14.40
16 – 20	32	29.00
21 – 25	30	26.90
26 and above	8	7.20
Total	111	100.00
Average	16.81	

Source: Field Survey

Professional job experience of respondents

The data in Table 2 regarding professional job experience of the respondents shows that maximum majority of AEOs (56%) had job experience of 16-25 years whereas only 8 respondents have a job experience

Table 3: *Mean, SD and rank of self perceived competency by AEOs in supervision and administration.*

Potentials	Desired Level			Possessed Level		
	Mean	SD	Rank	Mean	SD	Rank
The capacity to:						
Prepare crop wise training schedules for farmers	4.595	0.6087	1	3.63	0.8731	16
Be on time for appointment	4.577	0.7205	2	3.91	0.8796	1
Direct junior staff to perform work efficiently and effectively	4.577	0.6816	3	3.90	0.8734	2
Guide field assistants when they are in a fix while performing official duties	4.568	0.6413	4	3.84	0.9586	7
Supervise official duties of field assistants	4.550	0.6570	5	3.82	1.0198	8
Help field assistant plan extension activities	4.550	0.6707	6	3.89	0.9081	3.5
Maintain office morale	4.550	0.6841	7	3.89	0.8459	3.5
Organize daily, weekly and monthly work schedule	4.541	0.6576	8	3.77	0.9041	9
Identify malpractices of input supply dealers	4.541	0.7602	9	3.28	1.0372	23
Manage conflicts	4.532	0.6852	10	3.70	0.9204	12
Deal effectively with problem of subordinate	4.514	0.6448	11	3.86	0.8473	6
Formulate goals for extension programs	4.505	0.7246	12	3.51	1.0168	18
Conduct field meetings	4.495	0.7492	13	3.77	0.8810	9
Evaluate the working of pesticide companies in your jurisdiction	4.477	0.7242	14	3.39	1.0372	20
Evaluate the working of fertilizer dealer in your jurisdiction	4.477	0.6445	15	3.31	1.1020	22
Monitor the work of junior field staff	4.468	0.7363	16	3.86	0.9709	5.5
Coordinate the extension efforts of other allied departments	4.468	0.7112	17	3.45	1.0067	19
Deal effectively with higher authorities	4.450	0.7353	18	3.68	0.9815	13.5
Maintain office properly	4.441	0.7709	19	3.68	0.9260	13.5
Possess vision for future extension organization	4.414	0.7916	20	3.57	0.9781	17
Develop leadership potential of the staff	4.405	0.7432	21	3.65	0.8908	15
Delegate responsibility and authority	4.342	0.8257	22	3.74	0.9602	11
Describe history, philosophy, objectives and organization of extension staff	4.225	0.7941	23	3.36	0.9224	21
Conduct official inquiries	4.216	0.8356	24	3.26	1.0244	24
Average	4.478			3.655		

Calculation by Author

of more than 26 years. These results are greater than those of Al-Zahrani (2017) that reported 11% of the extension agents had above 15 years of job experience.

Possessed and needed level of AEOs in supervision and administration capabilities

The agricultural extension agents were asked to provide information regarding their competency in the supervision and administration. The ranked order in the required level indicated that the top three aspects of the supervision and administration out of 24 competencies were; preparation of crop wise training schedule for farmers (mean = 4.595, SD = 0.6087), on time for appointment (mean = 4.577, SD = 0.7205) and directing the subordinates to carry out their job responsibilities professionally (mean = 4.577, SD = 0.6816). The three ranked order (Table 3) values at the bottom were conduct official inquiries (mean =

4.216, SD = 0.8356), history, philosophy, objectives and organization of extension staff (mean = 4.225, SD = 0.7941) the ability to delegate responsibility and authority (mean = 4.324, SD = 0.8257). The overall average mean recorded for the required level was 4.478 and the same value in level possessed was 3.655. The possessed competencies of AEOs that were top ranked were timely appointment (mean = 3.91, SD = 0.876), directing activities of subordinate (mean = 3.90, SD = 0.8734) and to assist the field assistant in planning of extension services (mean = 3.89, SD = 0.9081). The results further showed that low ranked possessed competencies were conducting official inquiries (mean = 3.26, SD = 1.0244), determining input supply dealers' malpractices (mean = 3.28, SD = 1.0372) and evaluation of fertilizer dealer activities (mean = 3.31, SD = 1.1020).

Table 4: Mean and rank of self-perceived competency level required and possessed by AEOs with training need regarding supervision and administration.

Parameters	Desired Level	Level Present	Training Required	
The capacity to:	Mean	Mean	Dif = LR-LP	Rank
Identify malpractices of input supply dealers	4.541	3.279	1.2613	1
Evaluate the working of fertilizer dealer in your jurisdiction	4.477	3.306	1.1712	2
Evaluate the working of pesticide companies in your jurisdiction	4.477	3.387	1.0901	3
Coordinate the extension efforts with allied departments	4.468	3.450	1.0180	4
Formulate goals for extension programs	4.505	3.514	0.9910	5
Prepare crop wise training schedules for farmers	4.595	3.631	0.9640	6
Conduct official inquiries	4.216	3.261	0.9550	7
Describe history, philosophy, objectives and organization of extension staff	4.225	3.360	0.8649	8
Possess vision for future extension organization	4.414	3.568	0.8468	9
Manage conflicts	4.532	3.703	0.8288	10
Organize daily, weekly and monthly work schedule	4.541	3.766	0.7748	11
Maintain office properly	4.441	3.676	0.7658	12
Deal effectively with higher authorities	4.450	3.685	0.7658	13
Develop leadership potential of the staff	4.405	3.649	0.7568	14
Supervise official duties of field assistants	4.550	3.820	0.7297	15
Guide field assistants when they are in a fix	4.568	3.838	0.7297	16
Conduct field meetings	4.495	3.775	0.7207	17
Direct junior staff to work efficiently and effectively	4.577	3.901	0.6757	18
Be on time for appointment	4.577	3.910	0.6667	19
Help field assistant plan extension activities	4.550	3.892	0.6577	20
Maintain office morale	4.550	3.892	0.6577	21
Deal effectively with problem of subordinate	4.514	3.865	0.6486	22
Monitor the work of junior field staff	4.468	3.856	0.6126	23
Delegate responsibility and authority	4.342	3.739	0.6036	24
Average	4.478	3.655	0.823	

Calculations by Author

According to Scheer et al. (2011), extension agents need to be increasingly skillful and innovative to serve the needs of their diverse audience. Successful extension agents must be competent in areas such as program planning, communication, management, technical matters as well as in human relations and leadership.

The difference between the means of required level and level possessed indicated that there was a big difference in the two levels of competencies (Table 4). Three essential competencies where training of the AEOs were required were determination of malpractices being practiced by the input dealer (Diff. = 1.2613), assessing activities of fertilizer dealer in their control area (Diff. = 1.1712) and also determining operations of pesticide enterprisers (Diff. = 1.0901).

The lowest values of mean's difference of delegate responsibilities and authorities, monitoring the work of junior field staff and dealing effectively with problem of sub-ordinates and were 0.6036, 0.6126 and 0.6486, respectively. Average mean values were 4.478 and 3.655 for required level and level possessed. Thus the difference obtained was 0.823. Professional competencies at organizational level played an important role as the outcome of the study. The data reveals that managerial skill also plays a positive role and these competencies can only be enhanced through in-service trainings. The capacities of AEO's could only be increased if they are provided training facilities.

The data finally indicates that trainings are the effective tool for the AEOs which can only be utilized if proper trainings are conducted. Highly qualified and well experienced staff can effectively transfer modern technology as compared to less qualified and less experienced. Communication is recognized as the most important element regarding extension activities in agriculture and therefore extension workers utilize numerous methods to convey their messages to the farming community. Extension agents frequently adopts various methods for information sharing in order to obtain greater efficacy and efficiency of the program that yields to meet farmers' needs (Jones et al., 2010).

Thus the agricultural extension workers should be trained not only in the agriculture or technical field but also should be trained in the administration and supervision related activities. These results regarding

AEOs' possessed level of competency are consistent with the findings of Khan (2003).

Farming experience of AEOs with supervision and administration competencies

The means for the various professional competencies of AEOs with no experience and experience in farming ranging from 1–40 years are given in Table 5. Average professional competency was lowest in case of AEOs with 26–30 years of experience in farming. AEOs with the farming experience of 11–15 years had the higher supervision and administration competency. On the other hand AEO's with longer (26–30 Years) job experience has lower professional competency than the AEOs of 11–15 years job experience in the area of supervision and administration which is clear that supervision and administration had no concern with farming experience. Younger AEOs are more energetic and utilizing their energies for supervising and administering the agricultural activities while others are more involved in official activities and having less time for field activities.

Table 5: Means of professional competencies of AEOs regarding Farming Experience.

Experience in Farming (Years)	f	Composite Competency in supervision and administration
0	23	3.556
1 – 5	11	3.547
6 – 10	20	3.709
11 – 15	13	3.792
16 – 20	19	3.590
21 – 25	10	3.721
26 – 30	8	3.344
31 – 35	4	-
36 – 40	3	-
Average	111	

Calculations by Author

Independent factors of AEOs attached to competencies in supervision and administration

Table 6 showed that the correlation is negative due to the fact that training not conducted was recorded as 1 and training conducted was recorded as 0 during putting data in SPSS. We have to increase regular training program, than professional competencies in Supervision and Administration will ultimately increase. Attending training ($r = -.554$) are important to enhance the capacities of AEOs in supervision and administration because the AEOs who get a lower

chance of trainings had lower capability because lack of training opportunity in the provincial agriculture Extension Department. Most of the AEOs could not get a chance to attend a single training program resultant low capacity of supervision and administration. By getting chances of training AEOs can equip well with new technology and can face the challenges of new era. Educational qualification ($r = 0.231$) and family agricultural or non agricultural background (0.193) are also important aspects for improving the professional capacities of Extension Agents in supervision and administration because those are highly qualified and with farming background were found to be more efficient.

Table 6: Demographic Factors of AEOs in Supervision and Administration.

Factors (Independent)	Coefficient of Correlation	Significance level
Age of AEOs	0.101	0.289
Job Experience of AEOs	0.077	0.422
Professional Qualifications	0.231*	0.015
Specializations of AEOs	-0.156	0.102
Family background of AEOs	0.193*	0.043
Domicile of AEOs	-0.083	0.387
Previous Experience in Farming of AEOs	-0.138	0.147
Attendance of Regular Training by AEOs	-0.554**	0.000

Calculations by Author

Conclusions and Recommendations

From the study it was found that there is a wide gap in possessed as well as needed competencies in supervision and administration. There are key challenges to Agricultural Extension Officers playing the role of hub in the rural development causes wide yield gap and efficient agriculture extension services is because of no coordination between line departments, weak structure of agriculture extension, poor infrastructure, lack of facilities to Officers, lack of pre service and in service trainings. Top required competency was found in preparation of crop wise training schedule for farmers and utmost gap in competency was reported in malpractices identification, malpractices by input supply dealers, evaluation the working of fertilizer dealer and pesticide companies and coordinate the extension efforts of other allied departments.

It is therefore, recommended that the Agricultural

Extension Officers may be given pre and in service trainings in delegation of responsibilities and authorities, monitoring the work of junior field staff and dealing effectively with problem of sub-ordinates, conduct official inquiries, and organization of extension staff thus enabling them to work efficiently with farming community. Moreover, they have to endow with opportunities to avail higher educational degrees. Also trainings regarding the use of computer and audio visual materials should be provided to them to update their knowledge with latest technologies that is used in the fields during communications with the farmers. Their service structure needs to be revised and provided facilities at par with other nation building departments. Training courses in supervision and administration for them may be allowed rather increased being arranged by Pakistan Rural Academy Peshawar. Agricultural Extension Officers should survive their services not less than three years in a station.

References

- Al-Zahrani, K.H., F.O. Aldosari, M. B. Baig, M. Y. Shalaby, and G.S. Straquadine. 2017. Assessing the competencies and training needs of agricultural extension workers in Saudi Arabia. *J. Agric. Sci. Tech.* 19: 33-46.
- Ahmad, M. 1993. Evaluation of the working extension field staff for the development of farming community. *Pak. J. Agric. Sci.* 29(1): 231-236.
- Ali, T. 1991. An identification and validation of job performance competence needed by Agricultural extension field assistant in Faisalabad District, Punjab, Pakistan. Doctoral dissertation, University of Minnesota, USA.
- Bajwa, R. 2004. Agriculture extension and role of private sector. National Rural Support Programme, Pakistan.
- Darkenwald, G.G. and S.B.Merriam. 1982. Adult education: foundation of practice. Harper and Row, New York.
- Easter, G.W. 1985. Assessment of professional competence needed by extension agent in developing countries. Case study in Switzerland. Doctoral Dissertation Pennsylvani State University, USA.
- GoP. 2016. Economic survey of Pakistan, Govt. of Pakistan. Ministry of Finance, Eco. Advisor's Wing, Finance Division, Islamabad.
- Hayat, A. 1982. An evaluation of working Punjab

- extension and agricultural development Project, Sargodha District. M.Sc. (H) Agric. (Ext.) Thesis, Univ. Agric. Faisalabad, Pakistan.
- Hussain, A. 1983. An appraisal of the working image of extension field staff as perceived by the local councilors of Chichawatni Tehsil M.Sc. (Agr.Ext.) thesis, Univ. Agric., Faisalabad, Pakistan.
- Idrees, M. 1994. Agricultural extension problems and future strategies. *J. Rural Develop. Admin.* 26(41): 135-141.
- Iqbal, M.A. 1990. A study into the working relationship among various components of training and visit programmes in D.G. Khan District. M.Sc. (H) Agric. Extension thesis, Univ. Agric. Faisalabad, Pakistan.
- Jones, L.E., F. Diekmann, and M.T. Batte. 2010. Staying in touch through extension: An analysis of farmers' use of alternative extension information products. *J. Agric. Appl. Econ.* 42: 229-246. <https://doi.org/10.1017/S1074070800003424>
- Khan, M. A.J., Ali, T. and Husain, N. 2004. Competencies regarding extension methodology possessed by agriculture officers in Punjab, Pakistan. *Industrial J. Plant Sci.* 3: 31-33.
- Khan, M.A.J. 2003. Identification and rank order development of self-perceived competencies possessed by agriculture extension agents in the Punjab, Pakistan. PhD Thesis, Deptt. of Agric. Ext., Univ. Agric. Faisalabad, Pakistan.
- Muhammad, S. 1981. An evaluation of working Agriculture Department (Extension) as perceived by the farmers of University Project area, Shah Kot, District Sheikhpura. M. Sc (H) Agri. Ext. Thesis, Univ. Agric. Faisalabad, Pakistan.
- Najjingo, M. Kasujja and I.L. McCasline. 1991. An Assessment of the technical and professional competence needed by extension personnel in the central region of Uganda Proc. of AIAEE Conference, St. Louis., Mo.
- Naz, M.H. 1987. A study into the efficiency of extension activities of agriculture department in tehsil Shaker garh district Sialkot. M.Sc. (H) Agric. Extension thesis, Univ. Agric. Faisalabad, Pakistan.
- Pakistan Economic Survey. 2015-16. Economic advisory Wing. Finance Division, Islamabad, Pakistan. Pp. vi.
- Qadeer, A.M. 1993 Applied Statistics. A course handbook for human settlement planning. Bangkok, Thailand, Asian Institute of Technology, Division of Human Settlements Development. Pp. 315-316.
- Randavary, S. and P.R. Vaughn. 1991. Self perceived professional competence needed and possessed by agricultural extension worker in the western region of Thailand. A multivariate technique approaches. *The Informer Association for Inter. Agric. Ext. Edu.* 7 (1): 19-26.
- Scheer, S.D., G.R. Cochran, A. Harder, N.T Place. 2011. Competency modeling in extension education: integrating an academic extension education model with an extension human resource management model. *J. Agric. Edu.* 52: 64 -74. <https://doi.org/10.5032/jae.2011.03064>
- Urooba, P. 2001. Main factors affecting extension activities. A case study of Malakand agency M.Sc thesis Deptt. Of Agric. Extension Education and Communication, NWFP Agric. Uni. Peshawar, Pakistan.