**Assessment on the Job Competence of Extension personnel Working in Agricultural Extension Service Systems in Telangana, India**

**ABSTRACT**

The main concern in human resource development in agricultural extension service systems is enhancing the performance of extension personnel. To improve their competence and effectiveness, it is essential to identify the key factors influencing their performance, along with assessing their level of job competence. The paper focuses on the job competence of extension personnel in three extension service systems in Telangana i.e., Public, Private and NGO extension service systems. *Ex-post facto* research design was adopted for the study with a total sample of one hundred and twenty-six extension personnel. From the analysis, it was found that majority of extension personnel from public extension service system i.e. 54.90 per cent of extension personnel had medium level of job competence, followed by high (25.50%) and low (19.60%) levels of job competence. Majority of extension personnel from private extension service system i.e. 46.66 per cent of extension personnel had medium level of job competence, followed by low (31.11%) and high (22.23%) levels of job competence. Majority of extension personnel from NGO extension service system i.e. 43.33 per cent had medium level of job competence, followed by low (30.00%) and high (26.67%) level of job competence. A unified training program module should be designed for extension personnel across all three extension service systems to improve the job competence of all stakeholders.

***Keywords****:* Competence, Extension Personnel, NGO, Public, Private

**Introduction**

Globally, agricultural extension service systems and their procedures are changing quickly, and with them, so are the demands of farmers. Farmers in emerging nations are becoming more conscious of new technologies and better farming methods. They therefore look for trustworthy information about the advantages of implementing these developments. Their needs go beyond education; they also need timely access to fertilizer supplies, high-quality seeds, financial credit, and market information and services. Extension staff are under tremendous pressure to meet these increasing demands, which ask on them to possess not just technical expertise but also facilitation, communication, and problem-solving abilities (Suvedi, 2015).

The concept of competence was first introduced by David McClelland in the 1970s as a shift away from traditional assessment methods that emphasized intelligence evaluation in higher education. Competence refers to the combination of skills, personal attributes, and motivations that contribute to outstanding job performance. More broadly, it signifies an individual’s ability to execute tasks effectively and efficiently (Cernusca & Dima, 2007). Professional competence, in particular, is defined as an employee’s knowledge and capabilities that enable them to perform both defined and undefined tasks, ultimately meeting stakeholders' current and future expectations (Khadayata *et al.*, 2019).

In today’s globalized world, the success of any organization depends on skilled and knowledgeable individuals. Future extension professionals must be adaptable, forward-thinking, and equipped to serve diverse audiences (Seevers *et al*. 1997). To stay relevant, they must continuously update their knowledge and skills, as expertise in modern agricultural technology is critical for success. Beyond technical proficiency, extension agents must also excel in management, program planning, communication, human relations, and leadership (Graham, 2009). Considering these factors, this study aims to assess the professional competencies of extension personnel across three extension service systems in Telangana.

**METHODOLOGY**

The Telangana state was purposively selected for the study, the three agro climatic zones of state i.e., North, South and Central zones were considered. One district from each zone, thus a total of three districts were selected randomly for the study. i.e., Rangareddy, Warangal and Karimnagar. Under public extension service systems, *Krishi Vigyan Kendra, District Agricultural Advisory and Transfer of Technology Centres* and *State Department of Agriculture*, in case of private extension system, *Corteva, Syngenta* and *Bioseed* companies and in case of NGO extension service system, *Centre for Sustainable Agriculture (CSA)*, M*odern Architects of Rural India (MARI), Sankalp* and *Sarvodaya* were selected purposively. Ten extension personnel from State Department of Agriculture i.e., Mandal Agricultural Officers (5) and Agricultural Extension Officer (5) from each district were selected by using simple random sampling method. In Rangareddy district, there are 27 mandals, 27 MAOs, 88 AEOs. In Karimnagar district, there are 16 mandals, 16 MAOs and 79 AEOs. In Warangal district, there are 13 mandals, 13 MAOs and 59 AEOs. The extension personnel (MAOs & AEOs) were randomly selected from the list of one to respective totals and selected using random number generator. Thus constitute thirty (30) extension personnel from State Department of Agriculture for the study. Seven extension personnel were selected from KVKs (5) and DAATTCs (2), So a total of twenty-one extension personnel were included from KVKs and DAATTCs. Thus, constitute fifty-one extension personnel from public extension service system. Five extension personnel from the list of one to respective totals were selected from each private extension service system. Thus, a total of forty-five (45) extension personnel from private extension service systems. Five extension personnel were selected from the list of one to respective totals from each NGO extension service system. Thus constitute thirty (30) extension personnel from NGO extension service system.

The data from the extension personnel on job competence was collected with the help of closed-ended questionnaire. Data collected was analyzed and interpretations were drawn based on results. Kruskal Wallis Test was used for comparison of job competence across the three agricultural extension service systems.

**RESULTS AND DISCUSSION**

The data was collected from the extension personnel on job competence were analyzed, interpreted, and accordingly the following results and conclusion were drawn.

The results presented in table 1. revealed that majority of extension personnel from public extension service system i.e. 54.90 per cent of extension personnel had medium level of job competence, followed by 25.50 per cent of extension personnel had high level of job competence and 19.60 per cent of extension personnel had low level of job competence. The reasons for majority of extension personnel having medium to high level of job competence were, possession of sound technical knowledge on important varieties of major crops grown in the district, adequate exposure to latest farming technology, knowledge on the package of practices of major crops grown in the area. The KVK subject matter specialists, DAATTC scientists, Agricultural extension officers and Mandal Agricultural Officers had an explicit communication ability in conducting training and demonstrations for farmers and adapt to the different cultural differences among the farmers. The Agricultural Officers, KVK and DAATTC heads were very empathetic, monitoring and providing corrective measures to their concerned subordinates. Majority of AEOs in the study area had legit source of information and knowledge on the problems faced by the farmers in their concerned clusters. Public extension personnel always had the exile to update their knowledge through different trainings to acquire new skills. KVK and DAATTC officials were regularly conducting OFTs, FLDs and Minikits on latest technologies for assessment and refinement purposes.

Majority of extension personnel from private extension service system i.e. 46.66 per cent of extension personnel had medium level of job competence, followed by 31.11 per cent of extension personnel had low level of job competence and 22.23 per cent of extension personnel had low level of job competence. The reasons for majority of extension personnel having medium level of job competence were, their knowledge about latest varieties of major crops, vegetables and chemicals of the organisation. The territory manager and marketing development officer of the private extension system had adequate communicative ability to conduct the New Product Introduction (NPI) trainings to the farmers. Technical Market Development Executive and Technical Market Development Manager were involved in multilocational trails of their company seeds and chemicals in the farmer’s field. The territory managers of the organisations were empathetic towards their subordinates while conducting training and meetings with the farmers. While conducting trails in the farmers’ field, technical market development executives were adaptative to the cultural differences among the farmers

Probable reasons for the 31.11 per cent of extension personnel having low job competence were lack of experience in the work, lack of knowledge on the marketing channels of produce, lack of clear line of command. Most of the Marketing development officers of the organisation had education of any degree rather than Agriculture (B.Sc.).

Majority of extension personnel from NGO extension service system i.e. 43.33 per cent had medium level of job competence, followed by 30.00 per cent of extension personnel had low level of job competence and 26.67 per cent of extension personnel had high level of job competence. The reasons for majority of extension personnel having medium level of job competence were mainly because of the commitment of the extension personnel in servicing the farming community by continues self-development, regular trainings for updating the extension personnel to current scenario of agriculture. The CEO and project managers were empathetic towards the field extension workers and the field extension workers were adaptive to the cultural differences of farmers and were given enough freedom in the work to be creative to solve the problems of farmers like marketing of produce. The extension personnel of NGO were very enthusiastic to the take initiative in providing extension services to the farmers. Probable reasons for 30.00 per cent of extension personnel were having low level of job competence lack of expertise in agriculture because NGOs are diversified in their approach apart from agriculture. Lack of experience in extension work and insufficient training and capacity building activities for the extension personnel.

**Table 1. Distribution of extension personnel according to their job competence**

 **(n=126)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **S.No.** | **Category** | **Class interval** | **Public** | **Private**  | **NGO** |
| **f** | **%** | **f** | **%** | **f** | **%** |
| 1 | Low level  | 84 -117 | 10 | 19.60 | 14 | 31.11 | 9 | 30.00 |
| 2 | Medium level | 117 -150 | 28 | 54.90 | 21 | 46.66 | 13 | 43.33 |
| 3 | High level | 150 -183 | 13 | 25.50 | 10 | 22.23 | 8 | 26.67 |
|  |  Total  |  | 51 | 100 | 45 | 100 | 30 | 100 |

The three extension service systems i.e. public, private and NGO were compared to know the existence of any significant difference in job competence of extension personnel. Kruskal Wallis test was used for the comparison between job competence of extension personnel of extension service systems. Since, the p-value was found to be less than 0.05, it can be inferred that there was significant difference in job competence of extension personnel across the systems. Kruskal Wallis test statistics and its level of significance are portrayed in table 2. and the results were found to be significant at p<0.01 level of significance.

**Table 2. Kruskal Wallis test for job competence among farmers of public, private and NGO extension service systems and level of significance**

 **(n=126)**

|  |  |
| --- | --- |
| **Chi-Square** | 19.856 |
| **df** | 2 |
| **Asymp. Sig.** | 0.000 |

|  |  |  |
| --- | --- | --- |
| **Extension service system** | **n** | **Mean rank** |
| Public | 51 | 78.95 |
| Private | 45 | 60.26 |
| NGO | 30 | 42.10 |

**Table 3. 1v1 Comparison of job competence of extension personnel across three extension service systems**

 **(n=126)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **1v1** | **Test statistic** | **Std. Error** | **Std. Test Statistic** | **Sig.** |
| ***Public-NGO*** | 36.851 | 8.388 | 4.393\*\* | .000 |
| ***Public-Private*** | 18.695 | 7.456 | 2.507\*\* | .010 |
| ***Private-NGO*** | 18.156 | 8.592 | 2.113\* | .035 |

The study found a significant difference in job competence among extension personnel from public, private, and NGO service systems (p < 0.01). Public extension personnel exhibited the highest competence (Mean Rank: 78.95), followed by private (60.26) and NGO personnel (42.10).

Pairwise comparisons showed that public extension personnel had significantly higher competence than both private (p = 0.010) and NGO personnel (p = 0.000), while private personnel also outperformed NGO personnel (p = 0.035). These results suggest that public extension systems may have better training structures, highlighting the need for targeted interventions to enhance NGO personnel competence through training and resource support.

**CONCLUSION**

The study revealed significant differences in job competence among extension personnel from public, private, and NGO service systems in Telangana. Public extension personnel exhibited the highest competence levels, followed by private and NGO personnel. This suggests that public extension services benefit from more structured training programs and professional development opportunities. Private extension personnel, while moderately competent, showed gaps in marketing knowledge and experience, which may affect their effectiveness. NGO extension personnel, though committed and adaptable, faced challenges due to limited agricultural knowledge and inconsistent training opportunities. The findings emphasize the need for targeted interventions, especially for NGO extension personnel, to improve their competence through structured training programs, capacity-building initiatives, and access to updated agricultural knowledge. Strengthening these aspects can enhance the overall efficiency of extension services and better support farmers in adopting modern agricultural practices.

**ACKNOWLEDGEMENT**

I sincerely express my deepest gratitude to my Major Advisor and Chairperson of the Advisory Committee, **Dr. B. Savitha**, Professor, Department of Agricultural Extension Education, College of Agriculture, Rajendranagar, Hyderabad, for her invaluable guidance, insightful suggestions, and unwavering support. Her wisdom, meticulous supervision, and constant encouragement have been instrumental throughout my study and research journey.

I consider it a privilege to express my sincere gratitude and deep respect to **Dr. M. Jagan Mohan Reddy**, Director, Extension Education Institute, Rajendranagar, Hyderabad, **Dr. G.E.Ch. Vidyasagar**, Registrar, PJTAU, Rajendranagar and **Dr. D. Srinivasa Chary**, Associate Professor, Department of Statistics and Mathematics, College of Agriculture, Rajendranagar, Hyderabad. Their expert guidance, invaluable suggestions, constructive criticism, and keen attention to detail have been instrumental in shaping this research. Their constant encouragement has played a crucial role in bringing this study to its final form.

**CONFLICT OF INTEREST**

There is no conflict of interest

Disclaimer (Artificial intelligence)

Option 1:

Author(s) hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc.) and text-to-image generators have been used during the writing or editing of this manuscript.

Option 2:

Author(s) hereby declare that generative AI technologies such as Large Language Models, etc. have been used during the writing or editing of manuscripts. This explanation will include the name, version, model, and source of the generative AI technology and as well as all input prompts provided to the generative AI technology

Details of the AI usage are given below:

1.

2.

3.

**REFERENCES**

Borah, P. and Devarani, L. (2022). Competency of faculty members in online teaching of agricultural undergraduates during COVID-19 pandemic: A study in North-East India. *Indian Journal of Extension Education.* 58 (1): 21-25.

Cernusca, L. and Dima, C. (2007). Competency and human resource management. *International Journal of Psychology.*  8 (3): 33-35.

Graham, R. C. (2009). Ohio state university extension competency study: Developing a competency model for a 21st-century extension organization, *Ph.D. Thesis,* the Ohio state university, Columbus.

Khadayata, K. G., Patel, S. R. and Patel, A. R. (2019). Professional competence of agricultural technology management agency personnel. *International Journal of Current Microbiology and Applied Science.,* 8 (12): 2964-2969.

McClelland, D. (1973). Testing for competence rather than for intelligence. *American Psychologist*. 28 (1): 1-14.

Neethu, B.N., Jahagirdar, K.A., Angadi, J.G. and Meena, M.S. 2023. Professional competence of extension personnel in Karnataka state of India. *Indian Journal of Extension Education.* 59 (2): 79-83.

Rohit, J., Singh, P., Satyapriya, V. and Kumbhare, N.V. 2019. Competency mapping of the extensionists working in Krishi Vigyan Kendra in India. *Journal of Agriculture, Science and Technology.* 21 (4): 799-813.

Seevers, B. (1997). *Education through cooperative extension*. Delmar Publisher.

Suvedi, M. and Ghimire, R. P. (2015). *How competent are agricultural extension agents and extension educators in Nepal?* http://www.oired.vt.edu/innovate/wp content/uploads/2015/09/Suvedi

Sathish, H.S. 2015. Systems Analysis of Public and Private Agricultural Extension Service Providers in Karnataka. *Ph.D. Thesis.* University of Agricultural Sciences. Raichur, Karnataka.

Kavyasree, S. 2016. A Comparative Analysis of Public, Private and Corporate Extension System. *M.Sc. Thesis.* University of Agricultural and Horticultural Sciences.

Murugan, P.P. 2004. Identification of Indicators for Effective Extension Services in Public, Private and Non-Government Organisations and their Extent of Contribution. *Ph.D. Thesis,* Tamil Nadu Agricultural University, Coimbatore.