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**A framework to enhance managerial skills of  
Krishi Vigyan Kendra's manager for effective  
functioning of Krishi Vigyan Kendra in India**

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**Abstract**

Krishi Vigyan Kendras (KVK) are basic organization for transfer of technology through assessment, refinement and demonstration in a district. KVK is headed by a senior scientist & head who is responsible for overall management of KVK activities. Senior scientist & heads are significantly involved in planning of day-to-day operations, guiding the employees through certain course of action to help them accomplish KVK's goals. An efficient senior scientist & head of the *Krishi Vigyan Kendra* (KVK) must be a good manager. Therefore; to increase KVKs efficiency and achieve KVKs goals, we need senior scientist & head with managerial skills. It is therefore, felt necessary to assess the qualities possessed by KVK manager (Senior Scientist & Head). In all 210 senior scientist & head responded to the online questionnaire constructed on Google drive and cases of two KVKs were studied for in depth study. In the present study, it was attempted to analyse the managerial skills of senior scientist & head in terms of conceptual, human and technical skills. It can be concluded that senior scientist & head had medium level of managerial skills. For effective functioning of Krishi Vigyan Kendras, it is deemed necessary for the senior scientist & head of KVKs to be enriched with Conceptual skills (managing workload and responses, decision making), Human skills (controlling conflict, disturbance handler) and technical skills (managerial knowledge and experience, evaluation of performance). It was also observed that KVKs are over loaded with work and responsibility so in order to improve managerial skills of the KVK managers, there is a need to build up capacity of the KVK managers in the area of stress management, financial management and decision making. Therefore, the results of the study suggest that there is need to capacity building institutes should be empowering senior scientist & head through encouraging training and leadership on managerial skills for effective functioning of Krishi Vigyan Kendras (KVK) for rural development.

**Keywords:** Krishi Vigyan Kendras, managerial skills, conceptual skills, human skills, technical skills, senior scientist & head

**Introduction**

Krishi Vigyan Kendras (KVKs) are grassroot level organizations meant for application of technology through assessment, refinement and demonstration of proven technologies under different 'micro farming' situations in a district (Das, 2007) [3]. The KVKs are dedicated to vocational training of the practicing farmers, farm women, rural youth, school drop-outs and field level extension functionaries. The aim of KVKs is to reduce the time lag between generation of technology at the research institution and its transfer to the farmers' field for increasing production and income from agriculture and allied sectors on a sustained basis. Since its inception the KVK was conceptualised as multi-disciplinary and broad based in nature.

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There are around 706 KVKs spread throughout the length and breadth of the country and each KVK is headed by a senior scientist & head who is responsible for overall management of KVK activities. senior scientist & head who is head of the KVK organization coordinates the work of all scientists for smooth functioning of the KVK as well as for the benefit of rural people of that particular area. He/she is also responsible for liaising with other line departments for coordination and effective implementation of different programmes of KVK in the adopted villages. Generally, it is observed that KVKs are headed by postgraduates with specialization in different subjects of agriculture. They need to have sufficient experience in managing the multidisciplinary faculties of KVKs (Chauhan and Chauhan, 2012) [2]. Senior scientist & head play an important role in the KVKs success as they are the ones who interact with most employees on a daily basis and have a very strong influence on them. Senior scientist & head are significantly involved in planning of day-to-day operations, guiding the employees through certain course of action to help them accomplish KVK's goals. An understanding of the management activities and techniques will help the KVK scientists to manage their mandated activities effectively and efficiently (Venkatasubramanian *et al.* 2009) [5]. Management involves Planning, Organizing, Staffing, Directing, Coordinating, Reporting and Budgeting (POSDCORB). The senior scientist & head of the Krishi Vigyan Kendras must do all the above functions in Krishi Vigyan Kendras (KVKs) *i.e.* he/she must plan, organize, direct, coordinate *etc.* and do the best for his/her *Krishi Vigyan Kendra*. An efficient senior scientist & head of the *Krishi Vigyan Kendra* (KVK) must be a good manager. Therefore; to increase KVKs efficiency and achieve KVKs goals, we need senior scientist & head with managerial skills. Indeed, senior scientist & head would not be able to perform their duties unless they have already been made aware of their managerial skills.

A KVK, which is launched for application of technology through assessment, refinement and demonstration of proven technologies under different 'microfarming' situations in a district needs to be assessed by evaluating managerial skills of its manager to understand its utility and effectiveness. It is therefore, felt necessary to assess the qualities possessed by KVK managers who are responsible for effective functioning of these district level transfer of technology units of the country.

### Material and Methods

The Krishi Vigyan Kendras of India are managed and functioned in India in the eleven ATARIs (Agricultural Technology Application Research Institute). The present study was carried out in all the eleven ATARIs of India. All 706 KVKs of the country were selected for this study. Also, 2 KVKs were selected randomly which have been awarded as Best KVKs by ICAR for case study so that required triangulation can be done for quality study. However, the final analysis was done based on the responses got through the online questionnaire developed for the study.

The data were collected with the help of online questionnaire developed on Google form and the link was sent to the e-mail addresses of the respondents. Still, due to poor response some of the questionnaires were mailed through electronic mail. First round non-respondents were made a telephonic call by researcher, where this did not elicit a response; follow-up letters with another questionnaire were posted to respondents. 220 responses were received in time out of which 10

questionnaires were not filled properly so, finally 210 respondents constituted the sample of the study.

Analytical research design was used to meet the objectives of the study. Independent variables selected for the study were age, education, gender, Area of specialisation, experience, training attended, self-esteem, achievement motivation, professional productivity, organizational commitment and job satisfaction. Dependent variables were managerial skills. The data were collected through pre-tested questionnaire containing structured as well as open ended questions and were further analyzed by applying appropriate statistical techniques such as frequency distribution, percentage, standard deviation, mean score, coefficient of correlation and significance of correlation coefficient tabulated for interpretation.

### Results and discussion

Managerial skills of KVK Managers were measured on following aspects: Conceptual skill, Human skill and Technical skill.

#### Conceptual Skills

Conceptual skills involve an understanding of how the different components of the KVKs are related to each other and to the KVK as a whole. Decision-making, planning and organizing are specific managerial activities that require conceptual skills. Conceptual skills are the skills KVK manager must have to think and conceptualize about abstract and complex situations. Using these skills, KVK manager must be able to see the organization as a whole, understand the relationship among various subunits and visualize how the organization fits into its broader environment.

Conceptual skills of KVK manager were measured on the following sub categories: discipline, creativity, decision making, prioritizing in organization, mental stability, comprehensive planning, evaluation of planning effectiveness, time management, empowerment, managing workload and responses.

Data regarding Conceptual skills of KVK manager have been presented in Table 1.

**Table 1:** Distribution of respondents according to Conceptual skills  
N=210

| S. No. | Categories              | Frequency | Percentage |
|--------|-------------------------|-----------|------------|
| 1      | Low (<72)               | 31        | 14.76      |
| 2      | Medium ( between 72-87) | 145       | 69.05      |
| 3      | High(>87)               | 34        | 16.19      |

Perusal of Table 1 depicts that majority of the KVK manager that is 69.05 % of the respondents of KVKs had medium level of conceptual skills followed by high (16.19 per cent) and low level of conceptual skills (14.76 per cent), respectively. It has also been observed that the items that were rated most positively by respondents were those associated with mental stability and comprehensive planning. However, statements related to managing workload & responses, decision making were rated minimum by respondents

The findings are supported by the findings of Kumpikaite *et al.* (2012) [4] in their study evaluation of skills development methods: intercultural study of students' attitudes, also revealed that evaluation of conceptual skills were average in respondents.

**Table 2:** Prioritization of components of Conceptual Skills

| S. No | Components                           | Mean Score |
|-------|--------------------------------------|------------|
| 1     | Discipline                           | 4.66       |
| 2     | Prioritizing in organization         | 4.32       |
| 3     | Mental stability                     | 4.20       |
| 4     | Comprehensive planning               | 4.11       |
| 5     | Time management                      | 3.84       |
| 6     | Creativity                           | 3.51       |
| 7     | Evaluation of planning effectiveness | 3.23       |
| 8     | Empowerment                          | 3.11       |
| 9     | Decision Making                      | 2.90       |
| 10    | Managing workload and responses      | 2.68       |

The data in Table 2 depicts conceptual skills *viz.* 'Discipline' was ranked first followed by 'Prioritizing in organization' second (4.32), 'Mental stability' had ranked third (4.20), 'Comprehensive planning' was ranked fourth (4.11) and 'Time management' was ranked fifth (3.84) by respondents of Krishi Vigyan Kendras.

## 2. Human Skills

Human Skills require the ability to understand oneself, work with others, to understand and to motivate others. Human skills include developing self-awareness, managing personal stress, coaching and counseling, motivating, managing conflict effectively and empowering others. Human skills involve the ability to work well with other people both individually and in a group. Because KVK manager deal directly with people, this skill is crucial. KVK manager with good human skills are able to get the best out of their people. They know how to communicate, motivate, lead and inspire enthusiasm and trust.

Human skills of respondents of KVKs were measured on the following sub categories: Good-temper, Communication skills, Conducting meeting, Intra-organizational relations, Informing, Motivating, Disturbance handler, Controlling conflict, Supervising, Report generation, Acting with integrity.

**Table 3:** Distribution of respondents according to Human Skills  
N=210

| S. No. | Categories               | Frequency | Percentage |
|--------|--------------------------|-----------|------------|
| 1      | Low (<116)               | 27        | 12.86      |
| 2      | Medium (between 116-139) | 171       | 81.43      |
| 3      | High (>139)              | 12        | 5.71       |

Table 3 shows that majority (81.43 per cent) of respondents had medium level of human skills; while 12.86 per cent of respondents had low level of human skills and only 5.71 per cent respondents had high level of human skills.

**Table 4:** Prioritization of components of Human Skills

| S. No | Components                     | Mean Score |
|-------|--------------------------------|------------|
| 1     | Good-temper                    | 4.94       |
| 2     | Informing                      | 4.55       |
| 3     | Communication skills           | 4.21       |
| 4     | Intra-organizational relations | 4.14       |
| 5     | Conducting a meeting           | 3.76       |
| 6     | Motivating                     | 3.59       |
| 7     | Report generation              | 3.29       |
| 8     | Supervising                    | 3.10       |
| 9     | Disturbance handler            | 2.90       |
| 10    | Controlling conflict           | 2.74       |
| 11    | Acting with integrity          | 2.54       |

The data in Table 4 depicts human skills *viz.* 'good-temper' had ranked first by KVK manager followed by 'informing' was ranked second, then 'communication skills' was ranked third, 'intra-organizational relations' was ranked fourth and 'conducting a meeting' was ranked fifth by respondents.

## 3. Technical skills

Technical skills revolve around the ability to use the tools, procedure and specialized knowledge and techniques of one's field. This might include competency in financial management techniques, general and specific computer skills. Technical skills include knowledge and proficiency in a certain specialized field, such as farm testing, front line demonstration and development of proposals.

Technical skills of respondents have been measured on following sub categories: managerial knowledge and experience, evaluation of performance, operational planning, KVK rules and regulations, research and development of KVKs, computer skills, financial management and technical activities.

Data regarding Technical skills of respondents of KVKs have been presented in Table 5.

**Table 5:** Distribution of respondents according to Technical skills  
N=210

| S. No. | Categories              | Frequency | Percentage |
|--------|-------------------------|-----------|------------|
| 1      | Low(<97)                | 38        | 18.10      |
| 2      | Medium (between 97-119) | 130       | 61.90      |
| 3      | High(>95)               | 42        | 20.00      |

The data in Table 5 illustrates that majority (61.90 per cent) of the respondents had medium level of technical skills followed by 20 % who had high level of technical skills and low level of technical skills (18.10 per cent) respectively.

Table 6 shows that technical skills *viz.* 'KVKs rules and regulations' was ranked first then technical activities such as strategic planning, review information, effective management of the farms, workshops *etc.* ranked second. 'Operational planning' was ranked third by respondents.

**Table 6:** Prioritization of components of Technical Skills

| S. No | Components                          | Mean Score |
|-------|-------------------------------------|------------|
| 1     | KVKs rules and regulations          | 4.71       |
| 2     | Technical activities                | 4.40       |
| 3     | Operational planning                | 4.11       |
| 4     | Research and development of KVKs    | 3.91       |
| 5     | Computer skills                     | 3.14       |
| 6     | Financial management                | 3.01       |
| 7     | Managerial knowledge and experience | 2.83       |
| 8     | Evaluation of performance           | 2.50       |

Data regarding overall managerial skills of respondents have been presented in Table 7.

**Table 7:** Distribution of respondents according to Overall Managerial Skills N=210

| S. No. | Categories               | Frequency | Percentage |
|--------|--------------------------|-----------|------------|
| 1      | Low (<287)               | 34        | 16.19      |
| 2      | Medium (between 287-343) | 165       | 78.57      |
| 3      | High (>343)              | 11        | 5.24       |

It is clear from Table 7 that more than three fourth (78.57 per cent) respondents reported to be having medium level managerial skills. About 16.19 per cent respondents reported that their managerial skills were of lower order. Whereas,

only a meager number that is eleven respondents reported that they had high level of managerial skills.

Thus, it can be revealed from data that majority of the respondents had medium level of managerial skills. Similar results were also reported by Chauhan (2011)<sup>[1]</sup> who reported that overall extension management ability of Programme Coordinators was found at medium level.

It was observed that KVK manager assessed themselves as maximum on following subcategories: technical activities, financial management, computer skills, operational planning, informing, intra-organizational relations, communication skills, good temper and mental stability. In this era of information technology, KVK manager do use a lot of internet and email; however they reported that they rarely apply computer software to facilitate the tasks. This may be the reason behind minimum use of computer software due to which they have low level of knowledge about computer software application.

Maximum number of KVK manager reported that they had less managerial skills on decision making as they take moderate and calculated risks after decision making, and also assessed them minimum on acting calmly when under pressure. It was also revealed through discussion that KVK manager rarely breakdown problems into manageable parts.

### Framework for enhancing managerial skills of KVK manager

Framework is a structure for supporting or enclosing something else, especially a skeletal support used as the basis for something being constructed. In this study, framework was proposed after detailed in depth study of management concepts, relevant to managerial skill development and on the basis of findings of research.

Job experience, trainings attended, organizational commitment, job satisfaction and managerial linkages characteristics were highly associated with managerial skills. Instead of job experience, other characteristics can be improved. Job satisfaction depends upon the extent to which an individual derives personal and socio-psychological benefits from his/ her job. If the working conditions and facilities in the organization are not up to one's expectations, then the individual derives less satisfaction from his/ her job. Organisational commitment is the relative strength of an

individual's identification with and involvement in particular organisation. It can be characterised by at least three factors such as a strong belief in and acceptance of the organisational goals and values, willingness to exert considerable effort on behalf of the organisation and a strong desire to maintain membership in the organisation. Since job satisfaction and organizational commitment certainly affect the productivity in the long-run, hence measures to be taken for suitable rewards, providing incentives and better promotional opportunities.

Skills in establishing linkages help to overcome the organisational and policy constraints. KVK manager should be trained in order to maintain considerable amount of linkages with other KVKs.

Professional productivity, achievement motivation and self-esteem were also associated with individual managerial skills. To improve managerial skills of KVK manager, it is necessary to provide research and career advancement training which would help KVK manager to increase their professional productivity.

In this study, it was also observed that KVKs are over loaded with work and responsibility so in order to improve managerial skills of the KVK managers, there is a need to build up capacity of the KVK managers in the area of stress management, financial management and decision making.

Considering all this, it is proposed to enrich the prevailing managerial skills of KVK manager which involve human skills especially good-temper, conducting a meeting, supervising, report generation *etc.* Conceptual skills; especially discipline, prioritizing in organization, mental stability *etc.* Technical skills *viz.* KVK rules and regulations, technical activities such as strategic planning, review information, effective management of the farms, workshops *etc.*

For effective functioning of Krishi Vigyan Kendras, it is deemed necessary for the KVK manager to be enriched with Conceptual skills (managing workload and responses, decision making), Human skills (controlling conflict, disturbance handler) and technical skills (managerial knowledge and experience, evaluation of performance).

All these above skills of KVK manager also improve Krishi Vigyan Kendras efficiency and effectiveness in terms of innovation, productivity and farmers satisfaction. All these in turn lead to employee satisfaction.

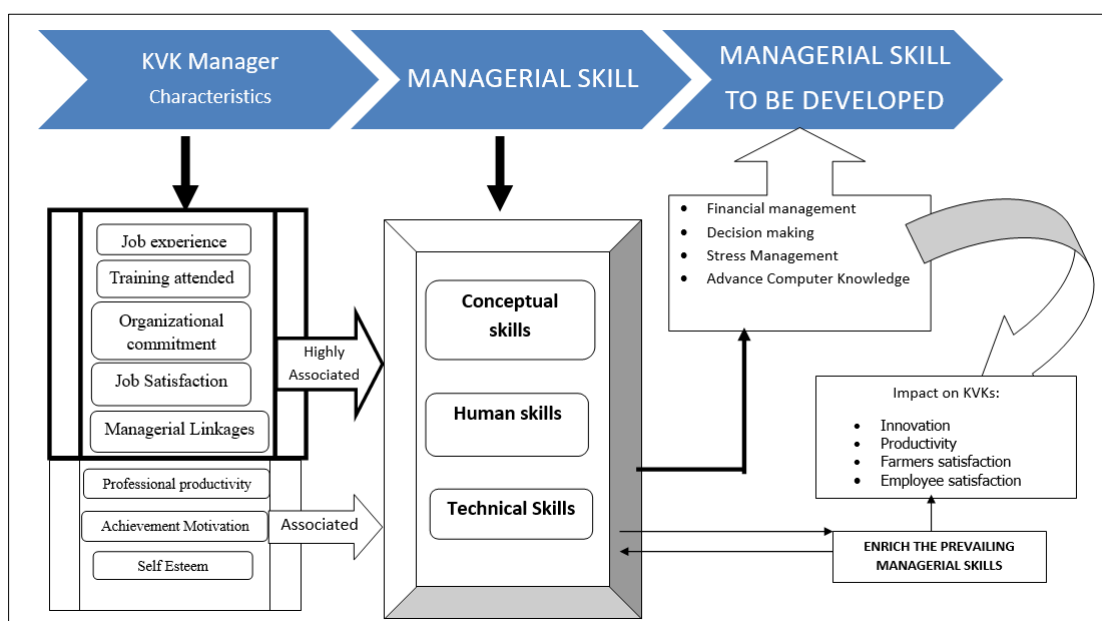


Fig 1: Framework on Managerial Skills



In the present study, it was attempted to analyse the managerial skills of KVK manager in terms of conceptual, human and technical skills. It can thus be concluded that KVK manager had medium level of managerial skills. This implies that there is still a scope to improve managerial skills towards the higher side.

It was observed that the financial decisions taken in KVKs were communicated through meetings indicating a higher degree of formality with long official process. This has got important implications for the final output as well as staff relationship of the KVK, hence, should be maintained and nurtured. It was also found that KVK manager are overloaded with work; it would be good if training organizations would organize training on stress management, financial management and other management practices which help KVK manager to minimize their work load. It was also observed that KVK manager faced problem of insufficient staff in KVKs. There is a need to fill vacant posts of KVKs and also increase the number of Subject Matter Specialists in Krishi Vigyan Kendras. Adequate budget should be provided to KVK manager in order to manage the KVK activities effectively and facilitate subordinates with resources so subordinates could work to a greater extent. KVK staff should be provided with additional incentives for hard area posting in hills, remote and backward areas. Staff once appointed in KVK should at least remain for five years at their initial place of posting and the KVK administrators should see to this that no transfers are allowed during this period. Therefore, the results of the study suggest that there is need to capacity building institutes should be empowering KVK manager through encouraging training and leadership on managerial skills for efficient working of Krishi Vigyan Kendras (KVK) for rural development.

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