



Identifying and Prioritizing Performance Management Challenges in Iran's Agricultural Extension and Education

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Abstract

In Tehran, surveys were used to identify and rank performance management challenges in agricultural extension and education. To identify and evaluate the challenges, semi-structured interviews and focus group discussions were conducted. Participants included 22 experts who had at least 10 years of management experience in extension activities. The number of study participants was determined based on theoretical saturation. This action was identified in the form of 3 steps of open coding, axial coding and selective coding using MAXqda12 software. Then, the identified challenges were prioritized through Analytical Hierarchy Process (AHP) with Expert Choice software. After the pairwise comparison of all the challenges based on each of the sub-criteria, the pairwise comparisons were combined and the result and final weight and priority of each of the challenges was determined based on the set of criteria using the software. The first 3 priorities were: lack of development of knowledge about strategic and operational performance and performance advancement (W=0.176.), lack of knowledge of continuous monitoring of the performance and process of doing work (W=0.148.), unfavorable attitude towards continuous performance monitoring, feedback and performance evaluation (W=0.132). Finally, applied recommendations to overcome challenges were expressed. Creating a favorable attitude about monitoring performance in the organization and monitoring the process of doing things is the most important practical recommendation of this research.

Keywords

Performance Management, Challenges, Agricultural Extension and Education, Iran

1. Introduction

Extension is an important and vital part of the overall activities of agricultural development (Win et al., 2018). Extension can also improve the efficiency of technology adoption in agriculture, encourage sustainable food production, reduce waste in the agricultural sector (Sattaka et al., 2017), improve the sustainability of farmers' livelihood (Taku et al., 2020), and be effective in informing farmers about the effects of climate change (Maka et al., 2019). Based on the available evidence, the extension activities have played a vital role in improving the skills of farmers and helping them to understand and accept modern technologies in order to increase production productivity and increase efficiency at the global level. The role of agricultural extension in sustainable agricultural development has been well studied around the world (Ashraf and Yousaf Hassan, 2021). Extension services in developing countries are still not effective (Lee et al., 2017). Therefore, according to many researchers (Babu et al., 2013; Benson & Jafry, 2013; Lee et al., 2017; Albore, 2018) it is necessary to implement appropriate measures to improve performance management in extension organizations. The performance of Iran's agricultural extension system, as one of the main components of agricultural development, has faced challenges during the past two decades (Aafzali Gorouh et al., 2023). In order to solve the problems of this system, the plan of reforming the structure and performance of the agricultural extension system, in the form of a new extension approach, was proposed with the aim of reviving performance management and extension services and appropriate transfer of research and technological findings;

However, after several years of implementation of this project, the results of various studies show a large gap between the current situation and the desired situation in the field of performance management (Alizadeh et al., 2019). Surveys show that Iran's agricultural extension has been in an unfavorable situation from the perspective of performance management and has not yet been able to develop itself in terms of choosing the approach and methods of extension, formulating goals and tasks, organizing structures and organizations (Rezai Moghadam and Fatemi, 2019). Yazdanpanah & Rahimifayzabad (2019) concluded in their research that the effectiveness of extension activities in Iran is low due to many shortcomings and the existence of some challenges, and they have faced failure; therefore, success has not been achieved in the extension organization and the current extension model needs to be modified. The results of the research showed that the categories "lack of attention to the agricultural sector", "executive policies", "economic factors", "structural weakness", "management weakness", "lack of up-to-date technical and personal knowledge of experts", "weakness of the higher education system" and "weakness in facilities" were categorized under the title of reasons for the failure of extension performance. Although more than 50 years have passed since the establishment of the official agricultural extension services in Iran, there are still obstacles and limitations in this field, which has caused the extension system to be unsuccessful, and during these years, farmers are not very satisfied with do not have extension services (Ahmadpour et al., 2021). Asadollahpour Kotenai et al., (2021) by using of factor analysis concluded the challenges of agricultural extension were divided into six categories, which include: education and research, development and support, planning and policy-making, communication, organization and management. In total, these six factors explained about 73.2% of the total variance of the challenges of agricultural extension.

2. Materials and Methods

This research is of an applied type and was conducted through a qualitative study. In the first step, examined the performance management challenges in the agricultural extension activities by content analysis. Then, through semi-structured interview and focus group with experts, performance management challenges were identified in the agricultural extension of Tehran province, Iran. Participants included 22 experts who had at least 10 years of management experience in extension activities. The number of study participants was determined based on theoretical saturation. This action was identified in the form of 3 stages of open coding, axial coding and selective coding using MAXqda12 software. First, the semantic units obtained from the face-to-face interviews and the focus group were entered into the software after writing edits, and then the aforementioned three types of coding were implemented. This action was identified in the form of 3 stages of open coding, central coding and selective coding using MAXqda12 software. First, the semantic units obtained from the face-to-face interviews and the focus group were entered into the software after writing edits, and then the three types of coding were implemented in order. After identifying decision-making alternatives (performance management challenges in the direction of sustainable human resource development in the agricultural extension department of Tehran province) and criteria and sub-criteria necessary to compare alternatives, a decision tree was designed through the Analytical Hierarchy Process(AHP) using Expert Choice software. After that, by pairwise comparison of criteria and sub-criteria according to the intended goal (prioritization of performance management challenges) and comparing them according to the criteria and sub-criteria.

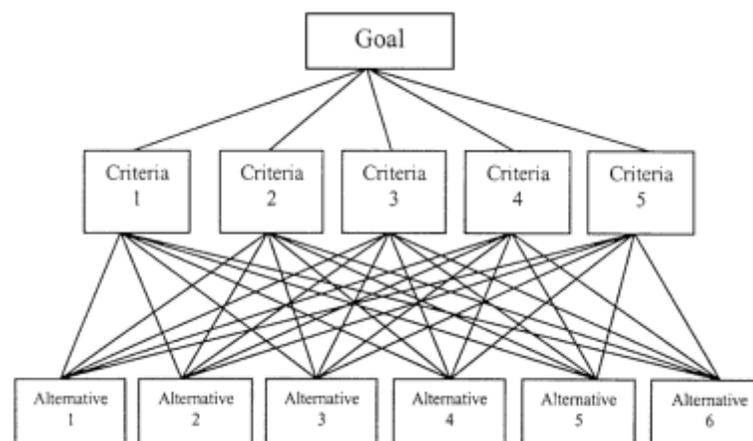


Figure 1. theoretical foundations of the research

3. Results and Discussion

3.1 Identifying the challenges of performance management in the agricultural extension

Open coding:

In this step of coding, by performing content analysis and detailed study of the obtained information line by line, concepts were formulated and adjusted. In the first step, the data obtained from the interview was analyzed and the answers were converted into semi-structured questions during the interview. The key topics discussed were obtained in separate sentences. The results of the semi-structured interview and focus group with experts were identified and extracted in the form of 39 concepts. The main sentences under the heading of concepts were extracted from direct quotes that had at least 5 repetitions, and each code was given with the PM-CHA symbol. The results of open coding are presented in Table 1.

Table 1. Conceptualization of the data obtained from the respondents' answers to the challenges (open coding)

Concepts (Initial Codes)	Codes
There is no necessary information about how to monitor performance	PM-CHA ₁
The process of doing things is not supervised by people with specialized knowledge.	PM-CHA ₂
Knowledge of performance management in the organization is low.	PM-CHA ₃
No attention is paid to specialized knowledge to do things.	PM-CHA ₄
Little attention is paid to knowledge management in the organization.	PM-CHA ₅
The level of knowledge to develop strategic performance is low.	PM-CHA ₆
The level of knowledge to promote performance is not optimal.	PM-CHA ₇
Less attention is paid to knowledge to realize operational plans.	PM-CHA ₈
Little attention is paid to training for the development of performance knowledge.	PM-CHA ₉
Performance optimization is not based on knowledge.	PM-HA ₁₀
There is no favorable attitude regarding performance monitoring in the organization.	PM-CHA ₁₁
There is no favorable attitude regarding monitoring the process of doing things.	PM-CHA ₁₂
The attitude towards performance management in the organization is low.	PM-CHA ₁₃
Feedback is not paid attention to.	PM-CHA ₁₄
Little attention is paid to performance evaluation in the organization.	PM-CHA ₁₅
Knowledge about organizational goals is low.	PM-CHA ₁₆
In the organization, each person seeks individual goals.	PM-CHA ₁₇
There is no favorable attitude about organizational goals.	PM-CHA ₁₈
Compliance of organizational and individual goals is low.	PM-CHA ₁₉
The effort to achieve organizational goals is low.	PM-CHA ₂₀
The level of participation of users in the programs is low.	PM-CHA ₂₁
Real needs assessment is not done regarding extension programs.	PM-CHA ₂₂
There is little interaction with stakeholders in making decisions.	PM-CHA ₂₃
There is less exchange of opinions and evaluation in the programs.	PM-CHA ₂₄
The level of popular participation in organization is low.	PM-CHA ₂₅
In the organization, little attention is paid to the skill of performance evaluation.	PM-CHA ₂₆
Developing performance evaluation skills is not the first priority of the organization.	PM-CHA ₂₇
Less attention is paid to the development of learning to improve performance.	PM-CHA ₂₈
Trainings lead to less performance changes.	PM-CHA ₂₉
The performance evaluation skill in the organization is low.	PM-CHA ₃₀
Organizational learning is not measured by the performance of individuals.	PM-CHA ₃₁
There is a gap between functions and value creation.	PM-CHA ₃₂
Values are not the criterion of performance success.	PM-CHA ₃₃
Performances are less associated with innovation.	PM-CHA ₃₄
Changing the behavior less attention	PM-CHA ₃₅
Functions are uniform in the organization and without progress.	PM-CHA ₃₆
Empowerment is not considered for performance development.	PM-CHA ₃₇
It is not intended to improve things and increase productivity.	PM-CHA ₃₈
Performance evaluation for improvement and correction is given less attention.	PM-CHA ₃₉

Axial coding

In this step, the number of repetitions of concepts was determined and subcategories were extracted. Based on the results of axial coding, the most important performance management challenges in the direction of developing sustainable human resources in the agricultural extension department of Tehran province were expressed in table 2 in 8 subcategories in the form of 39 initial codes and with 618 repetitions.

Selective encoding:

At this stage of the research, the relationship obtained in open coding and the subcategories resulting from axial coding with the main category was determined in the form of a graph based on the index of repetition. Figure 2 shows the challenges of performance management in line with the development of sustainable human resources in the agricultural extension department of Tehran province.

Table 2. Axial coding of performance management challenges

Category	Subcategories	Initial Codes	Repetitions	
Challenges of performance management in line with the development of sustainable human resources in the agricultural extension department of Tehran province	Lack of knowledge of continuous monitoring of performance and work process	PM-CHA ₁	17	
		PM-CHA ₂	15	
		PM-CHA ₃	15	
		PM-CHA ₄	18	
		PM-CHA ₅	19	
	Lack of development of knowledge about strategic and operational performance and performance advancement	PM-CHA ₆	16	
		PM-CHA ₇	17	
		PM-CHA ₈	15	
		PM-CHA ₉	14	
		PM-HA ₁₀	16	
	Unfavorable attitude towards continuous performance monitoring, feedback and performance evaluation	PM-CHA ₁₁	18	
		PM-CHA ₁₂	17	
		PM-CHA ₁₃	16	
		PM-CHA ₁₄	19	
		PM-CHA ₁₅	17	
	Misalignment of individual and organizational goals	PM-CHA ₁₆	14	
		PM-CHA ₁₇	15	
		PM-CHA ₁₈	16	
		PM-CHA ₁₉	18	
		PM-CHA ₂₀	14	
		Lack of attention to the development of stakeholder participation and interaction and exchange of opinions	PM-CHA ₂₁	16
			PM-CHA ₂₂	15
			PM-CHA ₂₃	17
			PM-CHA ₂₄	18
			PM-CHA ₂₅	19
	Lack of development of performance evaluation, learning and performance improvement skills	PM-CHA ₂₆	16	
		PM-CHA ₂₇	17	
		PM-CHA ₂₈	18	
		PM-CHA ₂₉	15	
		PM-CHA ₃₀	15	
		PM-CHA ₃₁	14	
	Lack of performance with regard to sustainable value creation	PM-CHA ₃₂	17	
		PM-CHA ₃₃	15	
		PM-CHA ₃₄	16	
		PM-CHA ₃₅	14	
	Failure to take necessary measures to improve performance and correct matters	PM-CHA ₃₆	17	
		PM-CHA ₃₇	15	
		PM-CHA ₃₈	16	
		PM-CHA ₃₉	18	

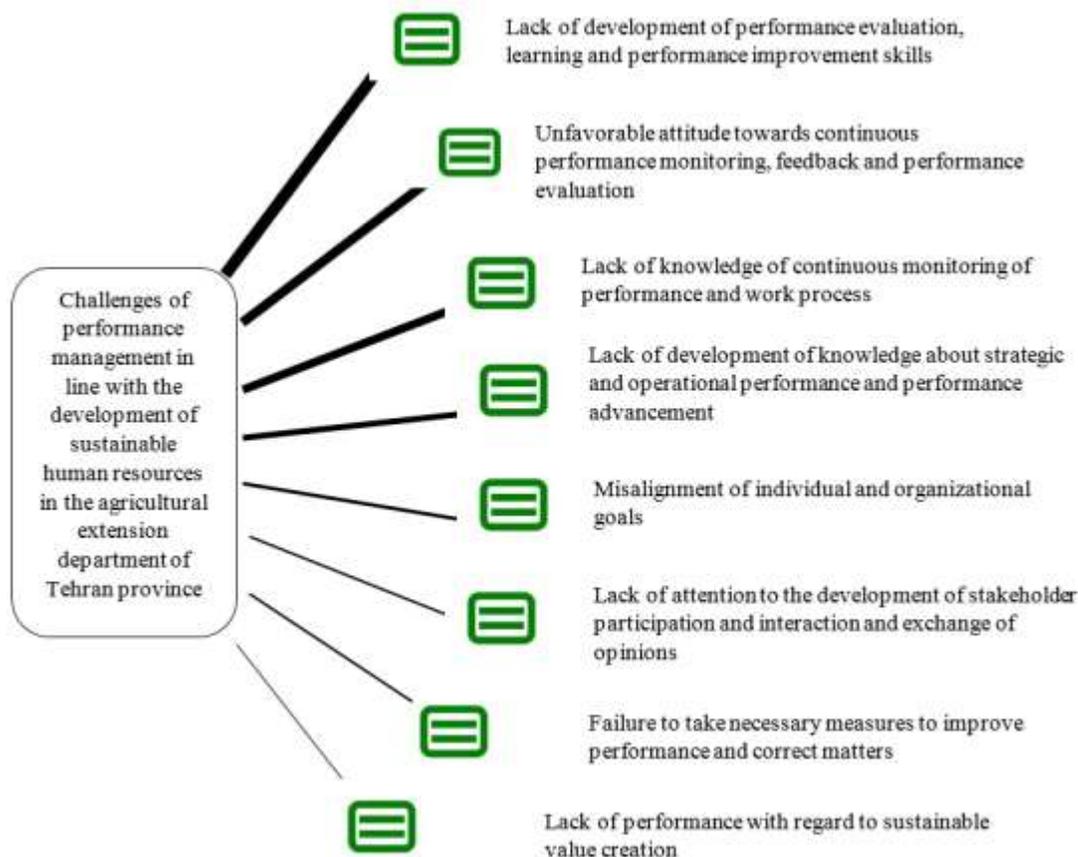


Figure 2. Selective coding of the most important performance management challenges in agricultural promotion in Tehran province

3.2 Prioritizing performance management challenges through Analytical Hierarchy Process (AHP)

After recognizing the decision-making alternatives (performance management challenges in the direction of developing sustainable human resources in the agricultural extension activities of Tehran province) and the criteria and sub-criteria necessary to compare the alternatives, the decision tree was designed by Expert Choice software. After that, pairwise comparison of criteria and sub-criteria was done according to the desired goal (prioritization of performance management challenges) and alternatives were compared according to criteria and sub-criteria.

First, the mean of pairwise comparisons was measured, then the hierarchical process was performed using Expert Choice software. After designing the number matrix of pairwise comparisons and normalization by weighted entropy method, the weight of each criteria and sub-criteria was determined. Then the inconsistency of pairwise comparisons was controlled with Expert Choice software. After ensuring an acceptable inconsistency rate (less than 0.1), the matrix of pairwise comparisons was presented. According to Figure 3, the weights of the criteria were calculated after performing pairwise comparisons in the Expert Choice software and were determined as follows:

Process dimension with a weight of 0.674

Content and development dimension with a weight of 0.226

Contextual dimension with a weight of 0.101

The inconsistency rate of pairwise comparisons is equal to 0.08

Table 3. Criteria, sub-criteria and alternatives of research

Criteria	Sub-criteria	Code
The process dimension	The process dimension of acquiring and developing knowledge and changing attitudes	F ₁
	The Process dimension of skill development and performance improvement	F ₂
The content dimension	The content dimension of acquiring and developing knowledge and changing attitudes	M ₁
	The content dimension of skill development and performance improvement	M ₂
The contextual dimension	The contextual dimension of acquiring and developing knowledge and changing attitudes	Z ₁
	The contextual dimension of skill development and performance improvement	Z ₂
	Alternatives	Code
	Lack of development of performance evaluation, learning and performance improvement skills	Ch ₁
	Unfavorable attitude towards continuous performance monitoring, feedback and performance evaluation	Ch ₂
	Lack of knowledge of continuous monitoring of performance and work process	Ch ₃
	Lack of development of knowledge about strategic and operational performance and performance advancement	Ch ₄
	Misalignment of individual and organizational goals	Ch ₅
	Lack of attention to the development of stakeholder participation and interaction and exchange of opinions	Ch ₆
	Failure to take necessary measures to improve performance and correct matters	Ch ₇
	Lack of performance with regard to sustainable value creation	Ch ₈

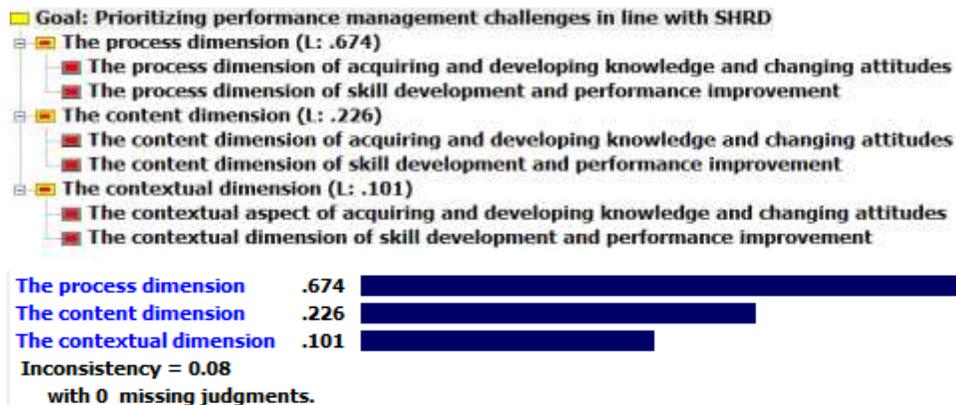


Figure 3. The output of criteria weight after pairwise comparisons in Expert Choice software

After the pairwise comparison of all the challenges based on each of the sub-criteria, the pairwise comparisons were combined and the result and final weight and priority of each of the challenges was announced based on the set of criteria using the Expert Choice software. Figure 3 shows the weight and priority of each of the items investigated in the research based on the set of determined criteria.

- 1) Lack of development of knowledge about strategic and operational performance and performance advancement with CH₄ code and weight 0.176.
- 2) Lack of knowledge of continuous monitoring of the performance and process of doing work with CH₃ code and weight 0.148.
- 3) Unfavorable attitude towards continuous performance monitoring, feedback and performance evaluation with CH₂ code and weight 0.132.
- 4) Lack of performance due to sustainable value creation with CH₈ code and weight of 0.120.
- 5) Failure to take the necessary measures to improve performance and correct matters with a CH₇ code and a weight of 0.116.
- 6) Lack of development of performance evaluation, learning and performance improvement skills with CH₁ code and weight 0.114.

- 7) Lack of attention to the development of stakeholders' participation and interaction and exchange of opinions with CH₆ code and weight 0.099.
- 8) Misalignment of individual and organizational goals with CH₅ code and weight 0.096.

The inconsistency rate of pairwise comparisons is equal to 0.05.

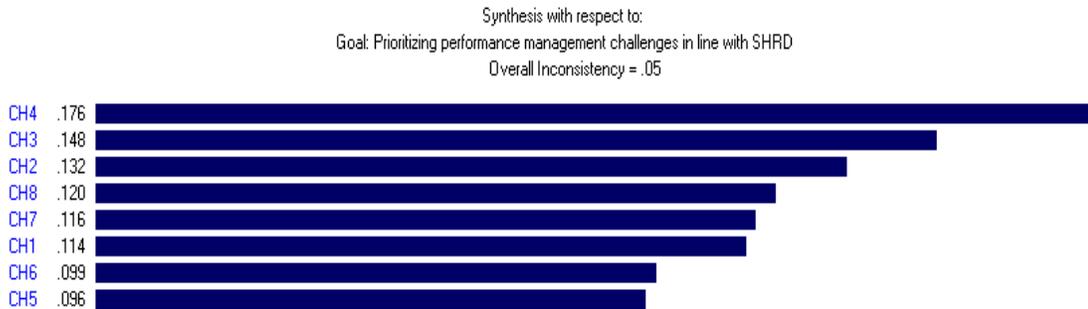


Figure 3. The final weight of challenges based on the combination of research criteria

3.3 Sensitivity analysis

In the sensitivity analysis, the sensitivity of the alternatives to the changes in the criteria in the target subset is shown. In sensitivity analysis, the ranking of the alternatives is determined according to the weight changes of the criteria. Sensitivity analysis is performed based on methods such as dynamic, efficiency, gradient, head-to-head and two-dimensional methods. In the following, dynamic method has been used, and with changes in the criteria, its effect on alternatives has been expressed.

Dynamic sensitivity analysis for the first criterion

In the dynamic sensitivity analysis, horizontal axis diagrams are drawn, based on which the researcher can determine the effect on the ranking of the alternatives by increasing or decreasing the weight of the criteria (Figure 4). With the 20% changes made in the performance management process criterion, it was found that the position of the first and second challenges has not changed, but the position of the third challenge has changed to the fifth.

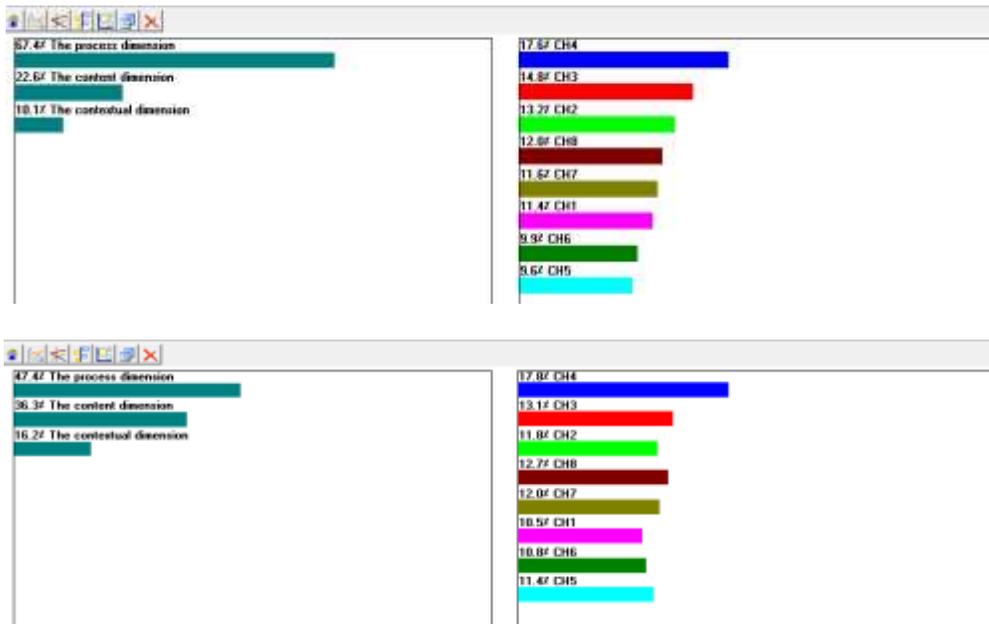


Figure 4. The results of sensitivity analysis using the dynamic method for the first criterion

4. Conclusion and Recommendations

The improvement of the agricultural sector depends on its ability to manage and cope with contemporary challenges such as population growth, changing demand patterns for food and agricultural products, climate change, resource scarcity and many other uncertainties. Sustainable livelihoods and the quality of life of the rural community are constantly linked to the performance of the agricultural sector. As an important development intervention, agricultural extension services focus on increasing the growth potential of the agricultural sector and promoting sustainable, inclusive and pro-poor agricultural development and, as a result, economic development (Joshi and Narayan, 2019). Agricultural extension is an important structural policy tool in helping farmers to compete in the global market. Agricultural extension services have expanded in many directions and include a wide range of activities. However, although the government extension organization is common in developing countries, the effectiveness of extension activities is low due to many shortcomings and the existence of some challenges, and they have faced failure. Therefore, success has not been achieved in the extension organization and the current extension model needs to be modified (Yazdanpanah & Rahimifayzabad, 2019). In this research, performance management challenges in extension activities were identified and prioritized. Based on the qualitative research, eight basic challenges were identified in the performance management of extension activities. The first priority was lack of development of knowledge about strategic and operational performance and performance advancement. This finding is consistent with the research results of Indraningsih et al., (2023); Djuraeva et al., (2023); Kamalimoghadam et al., (2023). To solve this challenge, it is necessary to improve the level of knowledge to develop strategic performance, increasing level of knowledge to promote performance, attention to knowledge to realize operational plans, attention to training for the development of performance knowledge and performance optimization based on knowledge. The second priority of the challenges was lack of knowledge of continuous monitoring of performance and work process. This finding is consistent with the research results of Yang & Ou (2023); Suvedi and Stoep (2016). In order to overcome this challenge, we must be considering follows: knowing the necessary information about how to monitor performance, supervising the process of doing things by people with specialized knowledge, increase knowledge of performance management in the organization, attention to specialized knowledge to do things and attention to knowledge management in the organization. The third priority of challenges was unfavorable attitude towards continuous performance monitoring, feedback and performance evaluation. This finding is consistent with the research results of Du Plessis & Van Niekerk (2017); Cabrera & Estacio (2022). To overcome this challenge, the following points should be considered. Creating a favorable attitude about performance monitoring in the organization through culture building and holding in-service training classes, creating a favorable attitude about monitoring the process of doing things, strengthening the attitude towards performance management in the organization by granting material and spiritual privileges, paying attention to the importance of feedback in work and paying attention to performance evaluation in the organization.

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