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# Evaluation of Farmer Training Satisfaction Level in Hubei Province

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**Abstract** Based on fully understanding the significance of farmer training, this paper builds the evaluation index system for farmer training satisfaction level. Then this paper employs the field survey data about Yichang and Jingzhou in Hubei Province to evaluate the farmer training satisfaction level in Hubei Province. Results show that farmers have high level of satisfaction on agricultural training in Hubei Province, and the average satisfaction level reaches 0.8556; there are regional differences in the farmer training satisfaction level in Hubei Province; the index weight is not entirely directly proportional to the training satisfaction level in the evaluation index system. Finally, from training courses, training teachers, training organization and follow-up services, this paper brings forward the recommendations for improving farmer training satisfaction level in Hubei Province, improve farmer training system, further improve the effectiveness of training and promote farmers' quality.

**Key words** Farmer training, Evaluation of satisfaction level, Hubei Province

## 1 Introduction

The focus of issues concerning agriculture, farmers and countryside is farmer. In recent years, the central government has introduced a series of policies to cultivate new agricultural market players and build a new agricultural management system. In the innovation of agricultural management system, it is necessary to protect the interests of farmers, focus on the cultivation of new professional farmers and promote intensive, professional, organizational and socialized agricultural management.

According to the experience of domestic and foreign agricultural development at the same time, the new rural market entities vigorously cultivated now are just the educated and skilled young farmers who are willing to start up an undertaking. With farmer entrepreneurship as a breakthrough point, vigorously carrying out "new farmer cultivation project" is an important way to cultivate new agricultural business entities. Farmers, as the largest group of Chinese population, have low cultural quality, having become an obstacle to Chinese prosperity, so we must strengthen the re-education and training of farmers, and only by implementing farmer training project and gradually improving the quality of farmer can China's prosperity be achieved.

China's farmer training started late, there is no uniform standard from the national level, and the research of academic community on this issue is still in its infancy. But most scholars believe that through training of farmers, it can not only improve the cultural quality of farmers, but also enhance China's agricultural labor productivity and make China become a country with powerful human resources. Be that as it may, the reality of the farmer training is unsatisfactory, far from reaching the expected

effect. In particular, China's farmer training has long deviated from the correct target and direction, and the idea of farmer training in the new times has not changed from the traditional "tool orientation" to "humanistic orientation".

The farmers cultivated can not meet the needs of agricultural modernization and industrial development, and there is still a shortage of skilled high-quality farmers, so the training has a long way to go. Many issues still exist, for example, the farmer training has not formed a set of training system in line with the practical requirements, the training content does not match the farmers' demand, and the training effect is not good. In this regard, there is an urgent need to evaluate the existing farmer training, and evaluate the farmer training satisfaction level so as to accurately grasp the current problems of farmer training and improve the effectiveness of training.

In this paper, we choose Hubei Province with a lot of farmers as the research object, and evaluate the farmer training satisfaction level in Hubei Province in order to provide a reference for the farmer training in other areas of China.

## 2 Index system and satisfaction level

### 2.1 Index system

**2.1.1 Index content.** According to the index selection principle, coupled with the existing research and actual situation of farmer training in Hubei Province, after many discussions with the farmers involved in the training in the schools, we establish the evaluation index system dominated by farmer training satisfaction level.

This study considers that the farmer training satisfaction level as the main line of evaluation should reflect the training course satisfaction level, trainers' satisfaction level, training organization satisfaction level, and follow-up service satisfaction level, which is also the core design idea of evaluation index system.

From the goal, criteria and operating layers, we establish the

evaluation index system, as shown in Table 1.

**2.1.2 Index weight.** In this study, when calculating the evaluation index system weight, we use Analytic Hierarchy Process (AHP), and this method conforms to people’s decision idea decomposition, judgment and integration features.

The complex issues are expanded in a logical hierarchy and broken down into different hierarchical elements. The multiple comparison judgment matrix between all elements in the same layer from the criteria layer is established, to judge the importance of elements in the layer.

**Table 1** The evaluation index system for farmer training satisfaction level in Hubei Province

Goal layer	Criteria layer		Operating layer	
	Factors	Code	Index	Code
Farmer training satisfaction level in Hubei Province	Training course satisfaction level	B <sub>1</sub>	The rationality of the overall framework of the course	C <sub>1</sub>
			The richness of the course case	C <sub>2</sub>
			The practicality of the training content	C <sub>3</sub>
			The recognition of teaching content	C <sub>4</sub>
	Trainers’ satisfaction level	B <sub>2</sub>	The trainers’ lesson preparation adequacy	C <sub>1</sub>
			The trainers’ course grasping degree	C <sub>2</sub>
			The trainers’ expression accuracy	C <sub>3</sub>
			The trainers’ ability to combine theory with practice	C <sub>4</sub>
			The interaction between trainers and trainees	C <sub>5</sub>
	Training organization satisfaction level	B <sub>3</sub>	Training time arrangement	C <sub>1</sub>
			Training place arrangement	C <sub>2</sub>
			Training unit’s accommodation conditions	C <sub>3</sub>
			Training unit’s diet conditions	C <sub>4</sub>
			Training classroom environment	C <sub>5</sub>
			Training form recognition	C <sub>6</sub>
	Follow-up service satisfaction level	B <sub>4</sub>	Venture project recommendation	C <sub>1</sub>
			Guiding teachers’ on-site service	C <sub>2</sub>
			Sending technology, information, policy to the countryside	C <sub>3</sub>
			Organizing students to exchange experience	C <sub>4</sub>

Finally, the importance of various elements to the overall evaluation system is determined, and due to difference in subjective judgment, it often leads to inconsistency in  $a_{ij} \neq a_{ik} \cdot a_{kj}$  for

the judgment matrix 
$$\begin{bmatrix} a_{11} & \cdots & a_{1n} \\ \cdots & \cdots & \cdots \\ a_{n1} & \cdots & a_{nn} \end{bmatrix}.$$

At present, the consistency index  $C.R. = C.I./R.I.$  is commonly used as the judgment index, and when  $CR < 0.1$ , it is believed that the consistency is within the acceptable range.

Scored by experts on each index, the weight of evaluation index system for farmer training performance in Hubei Province was calculated (Table 2).

**Table 2** The weight of evaluation index system for farmer training satisfaction level in Hubei Province

Goal layer	Criteria layer		Operating layer	
	Index	Weight//%	Index	Weight//%
Training satisfaction level	Training course satisfaction level	28.42	The rationality of the overall framework of the course	6.86
			The richness of the course case	7.84
			The practicality of the training content	8.23
			The recognition of teaching content	5.49
	Trainers’ satisfaction level	24.63	The trainers’ lesson preparation adequacy	4.79
			The trainers’ course grasping degree	5.81
			The trainers’ expression accuracy	4.69
			The trainers’ ability to combine theory with practice	4.79
			The interaction between trainers and trainees	4.55
	Training organization satisfaction level	20.16	Training time arrangement	3.60
			Training place arrangement	3.30
			Training unit’s accommodation conditions	3.38
			Training unit’s diet conditions	3.48
			Training classroom environment	3.19

(To be continued)

(Continued)

Goal layer	Criteria layer		Operating layer	
	Index	Weight//%	Index	Weight//%
Training satisfaction level	Follow-up service satisfaction level	26.79	Training form recognition	3.21
			Venture project recommendation	6.67
			Guiding teachers' on-site service	5.89
			Sending technology, information, policy to the countryside	7.89
			Organizing students to exchange experience	6.35

**2.2 Farmer training satisfaction level**

The farmer training satisfaction is a state of mind, a kind of self-experience, produced after participating in the training.

In order to evaluate the farmer training satisfaction level, it is necessary to define the psychological state of the participants in the

training activities. Using the hierarchy theory, the emotional experience can be divided into several levels.

Therefore, this paper divides the farmer training satisfaction level into five levels: very unsatisfied; not very satisfied; generally satisfied; relatively satisfied; very satisfied (Table 3).

Table 3 Farmer training satisfaction level

Satisfaction level	Characterization	Detail
Very unsatisfied	Indignation, anger, complaint, anti-propaganda	It means that the farmers feel angry and oppressive after participating in the agricultural training, and in this state, the participants will try to complain to the higher authorities, and even disclose the training shortcomings to more people for a long period of time so as to vent dissatisfaction. For example, they remind their friends and family of shying away from the farmer training.
Not very satisfied	Complaint, regret	It means farmers' complaint and regret after taking part in the training. For the participants who are not very satisfied with the farmer training, they are disgruntled but admit defeat due to real pressure. The trainees, who are not very satisfied with the training, will not attend the training again.
Generally satisfied	No obvious positive and negative emotions	It means that the farmers never form apparent emotion in the training process. The trainees, who are generally satisfied with the training, are neutral in re-attending training.
Relatively satisfied	Favorable impression, affirmation, praise	It means the state of favorable impression, affirmation and praise formed when the farmers participate in the training. The participants, relatively satisfied with training, think the farmer training meets the needs of agricultural practices to some extent, but it is far from wholly meeting the needs.
Very satisfied	Excitement, satisfaction, gratitude	It means the state of excitement, satisfaction and gratitude formed after farmers participate in the training. The trainees, very satisfied with the training, believe that the farmer training not only fully meets their own expectations, but also greatly exceeds expectations. The trainees feel that the training institutions not only tap their own hidden needs, but also fully realize the hidden needs.

3 Results and analysis

**3.1 Data sources and processing** In this study, with "Sunshine Project" of Hubei Provincial Department of Agriculture as the basis, we randomly selected the trainees who participated in the training in 2016 from Zigui, Dangyang, Yuan'an, Yiling, Jingzhou, Gong'an, Songzi, Jiangling to conduct a comprehensive survey.

400 questionnaires were issued and 360 of them were recovered, with response rate of 90%, and there were 348 effective questionnaires. Through effective questionnaire data processing, after completion of the data proofreading, the results of evaluation index system are measured according to the raw data.

In this study, the evaluation index system has 19 indices, together with the trainees' location and sample number. The aggregated data can not be directly combined with the weight of evaluation index system because the unit is inconsistent. To eliminate the influence of the unit on data, there is a need to select the minimum-maximum normalized approach to eliminate the dimension of data.

Specifically, the difference between the maximum and minimum sample values for an index is calculated, the original value of the index is used to subtract the minimum index value, and the re-

sult obtained is divided by the difference between the maximum and minimum sample values to get the dimensionless result.

The maximum and minimum values in the data set are found, and the original value is mapped into the interval [0, 1] through the normalization of difference between the maximum and minimum values. It is calculated as follows:

*Normalized data* = (*Original data* - *Minimum value*) ÷ (*Maximum value* - *Minimum value*).

**3.2 Evaluation results and analysis** After normalization, the index data about the trainees are multiplied by the corresponding evaluation index weight to get the satisfaction level of the index, and the farmer training satisfaction level can be obtained after aggregating the 19 indices (Table 4).

From Table 4, it is found that the overall average satisfaction level on training is high, about 0.8556, and the trainees have the highest satisfaction level on training courses, about 0.2473; the trainees have the lowest satisfaction level on training organization, about 0.1774.

In terms of regions, the average training satisfaction level of the trainees in Yichang is lower than in Jingzhou, about 0.8485; the training course satisfaction level is highest in Yichang and Jing-

zhou, about 0.2546, 0.2373, respectively, but the training organization satisfaction level is lowest in Yichang and Jingzhou, about 0.1787 and 0.1756, respectively (Table 5).

It can be seen that there are not only differences in the content but also differences in the region for the farmers' training satisfaction level.

**Table 4** Evaluation of farmer training satisfaction level in Hubei Province

Satisfaction level evaluation index	Average satisfaction level		
	Overall	Yichang	Jingzhou
The rationality of the overall framework of the course	0.059537	0.05968712	0.059335
The richness of the course case	0.068046	0.06900149	0.066755
The practicality of the training content	0.070977	0.07574612	0.064531
The recognition of teaching content	0.048704	0.05018830	0.046697
The trainers' lesson preparation adequacy	0.042377	0.04357146	0.040763
The trainers' course grasping degree	0.058127	0.05812680	0.058127
The trainers' expression accuracy	0.040179	0.03964753	0.040897
The trainers' ability to combine theory with practice	0.040176	0.04093802	0.039146
The interaction between trainers and trainees	0.045516	0.04551624	0.045516
Training time arrangement	0.031125	0.03274690	0.028934
Training place arrangement	0.028812	0.02918886	0.028302
Training unit's accommodation conditions	0.030117	0.03042749	0.029696
Training unit's diet conditions	0.030732	0.03100447	0.030364
Training classroom environment	0.031853	0.03185280	0.031853
Training form recognition	0.024748	0.02345858	0.026490
Venture project recommendation	0.050777	0.04967683	0.052263
Guiding teachers' on-site service	0.042959	0.04267178	0.043348
Sending technology, information, policy to the countryside	0.078897	0.07889655	0.078897
Organizing students to exchange experience	0.031915	0.01618371	0.053174
Total	0.855572	0.84853102	0.865087

**Table 5** Farmers' entrepreneurship training satisfaction level in Hubei Province

Evaluation index	Average satisfaction level		
	Overall	Yichang	Jingzhou
Training course satisfaction level	0.24726347	0.25462302	0.23731814
Trainers' satisfaction level	0.22637475	0.22780004	0.22444870
Training organization satisfaction level	0.17738639	0.17867909	0.17563950
Follow-up service satisfaction level	0.20454765	0.18742887	0.22768115
Training satisfaction level	0.85557227	0.84853102	0.86508749

4 Conclusions and recommendations

**4.1 Conclusions** Based on fully understanding the significance of farmer training, this paper builds the evaluation index system for farmer training satisfaction level. Then this paper employs the field survey data about Yichang and Jingzhou in Hubei Province to evaluate the farmer training satisfaction level in Hubei Province.

(i) The farmers have high satisfaction level on agricultural entrepreneurship training in Hubei Province. Since the agricultural training was carried out in Hubei Province in 2008, it has gradually embarked on the road of sound development.

Agricultural departments at all levels actively play a functional role, and the relevant agricultural institutions and colleges vigorously carry out agricultural entrepreneurship training and establish an effective training system. The trainees have high satisfaction level on the entrepreneurship training.

(ii) There are regional differences in the farmers' entrepreneurship training satisfaction level in Hubei Province. In carrying out the agricultural entrepreneurship training, there are differences

in training course setting, training staff arrangement, training organization and follow-up services among different regions, so the trainees in some areas have high training satisfaction level while the trainees in some areas have low training satisfaction level.

(iii) The index weight of evaluation index system is not exactly proportional to the training satisfaction level. The entrepreneurship training satisfaction level is probably proportional to the weight of evaluation index system, but actually it is not entirely true.

The weight of four indices in the criteria layer is in the descending order of training course index (0.2842), follow-up service index (0.2679), trainer index (0.2463) and training organization index (0.2016), but the average training satisfaction level is in the descending order of training course index (0.2473), trainer index (0.2264), follow-up service index (0.2045) and training organization index (0.1774).

This shows that there is still a large space for improving the training effect, especially for those indices with large weight but

low training satisfaction level such as follow-up services and training courses.

**4.2 Recommendations** The farmer training satisfaction level is high in Hubei Province, but there is still much room for improvement. Hubei Province should improve the training satisfaction level from training courses, training teachers, training organization, and follow-up services.

In the training course, the training institutions at all levels should be based on farmer training demand survey and local industry development characteristics to form the survey report and develop the training implementation plan, and carry out the corresponding curriculum design.

In the teaching courses, it is necessary to combine the theory with local agricultural development conditions, and help farmers to solve some important agricultural production problems. In terms of training teachers, it is necessary to ensure the quality of teachers, pay attention to the teachers' practical teaching ability and experience, try to hire the teachers familiar with agriculture, rural areas and farmers, having relevant work experience.

In the recruitment stage, we can set the link of giving a trial lecture to examine the teachers' training course mastering degree and ability to link theory with practice. At the same time, it is necessary to strengthen teachers' advanced studies to constantly improve the teaching level of trainers.

In addition, we must establish teacher reward and punishment mechanism to increase the assessment of teachers. Through the performance incentive, it can promote the trainers to continuously improve the teaching methods and improve the quality of teaching.

In the training organization arrangement, it is necessary to scientifically select the trained farmers, and strengthen the day-to-day management in the training process. It is also necessary to pay attention to the individual needs of farmers, and actively strengthen the life care and logistical support.

In the follow-up training services, according to the farmers' production needs, it is necessary to further improve the tracking service system, establish farmer training service center, and establish agricultural entrepreneurship service guidance center, to provide a follow-up farmer training service platform.

There is a need to constantly enrich the content of entrepreneurial tracking service, actively carry out farmer production project promotion, policy advice, production technology guidance, market information release and other farmer training tracking services to help the trainees to solve the problems and difficulties en-

countered in the production process in a timely manner.

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(From page 7)

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