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# Farmer training: Demand-supply matching and its effectiveness

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*Selected Poster prepared for presentation at the 2024 Agricultural & Applied Economics Association  
Annual Meeting, New Orleans, LA: July 28-30, 2024*

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# Farmer training: Demand-supply matching and its effectiveness

Selected Poster prepared for presentation at the 2024 Agricultural & Applied Economics Association Annual Meeting, New Orleans, LA: July 28-30, 2024

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## Introduction

- In developing countries, organizing farmer training is an essential means to enhance farmers' knowledge and skills, thereby improving agricultural production efficiency.
- Training for high-quality farmers faces issues such as insufficient resources and ineffective information, which hampers the training effectiveness.

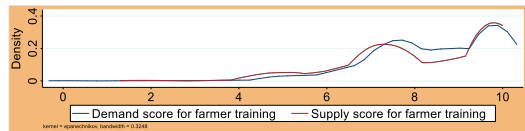


Fig. 1 Density of demand and supply score for farmer training

## Objective

- Measuring demand and supply of farmer training
- Exploring mismatch between demand and supply
- Verifying the impact of demand-supply mismatch on the training effectiveness

## Empirical Strategy

■ **Entropy weight method:** Construct the evaluation index system of demand and supply satisfaction of high-quality farmer training

$$\text{Effectiveness}_i = \alpha_0 + \alpha_1 \text{Mismatch}_i + \sum_{k=1}^m \gamma_k CV_{ki} + \varepsilon_{ic}$$

- **Effectiveness:** The effect of farmer training (subjective, objective, intergeneration)
- **Mismatch:** Demand-supply gap
- **CV:** Personal characteristics like gender, age, education, etc.

## Data Sources

- A survey conducted in May, 2022, on the training of high-quality farmers in Zhejiang Province, China.
- The survey targeted a total of 2,256 farmers from training sessions. A total of 1,055 questionnaires were collected, and after excluding 49 invalid responses, 1,006 valid questionnaires were obtained, resulting in an effective response rate of 95.36%.

## Results

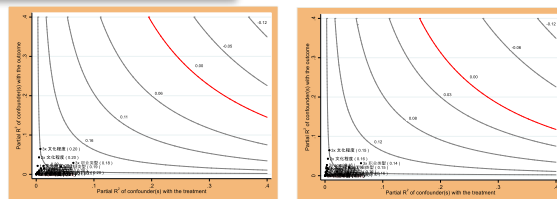


Fig. 2 Sensitivity analysis on demand and supply score with training effect

Table 1 Demand and supply of farmer training and training effect

	(1)	(2)	(3)	(4)	(5)	(6)
	Subjective training effect			Objective training effect		Intergenerational effect
	Technology	Income	Agri-income	Real agri-income	Real agri-invest	Willing children to farm
<b>Panel A: Demand score and training effect</b>						
Demand score	0.215*** (0.023)	0.202*** (0.021)	0.201*** (0.022)	0.134*** (0.043)	0.248*** (0.045)	0.064*** (0.010)
<b>Panel B: Supply score and training effect</b>						
Supply score	0.168*** (0.021)	0.167*** (0.018)	0.166*** (0.019)	0.134*** (0.037)	0.240*** (0.039)	0.052*** (0.009)
<b>Panel C: Demand-supply gap and training effect</b>						
Demand-supply gap	-0.009 (0.009)	-0.009 (0.008)	-0.007 (0.008)	-0.019** (0.010)	-0.019** (0.009)	-0.006* (0.004)
Demand-supply gap	-0.030 (0.042)	-0.061* (0.037)	-0.057* (0.035)	-0.123** (0.061)	-0.197*** (0.066)	-0.018 (0.017)
Control Variables	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	1,006	1,006	1,006	1,004	1,005	1,006

Note: The control variables include gender, age, age squared term, education level, total number of labor force in the family, proportion of agricultural labor force, years of agricultural work, occupation type and professional title. Heteroscedasticity robust standard errors are in parentheses. \* p<0.1, \*\* p<0.05, \*\*\* p<0.01.

Table 2 Demand-supply gap of farmer training and training effect

	(1)	(2)	(3)	(4)	(5)	(6)
	Subjective training effect			Objective training effect		Intergenerational effect
	Technology	Income	Agri-income	Real agri-income	Real agri-invest	Willing children to farm
Demand->Supply	0.215*** (0.023)	0.202*** (0.021)	0.201*** (0.022)	0.134*** (0.043)	0.248*** (0.045)	0.064*** (0.010)
Demand<-Supply	0.168*** (0.021)	0.167*** (0.018)	0.166*** (0.019)	0.134*** (0.037)	0.240*** (0.039)	0.052*** (0.009)
Demand<-Supply	-0.009 (0.009)	-0.009 (0.008)	-0.007 (0.008)	-0.019** (0.010)	-0.019** (0.009)	-0.006* (0.004)
Demand<-Supply	-0.030 (0.042)	-0.061* (0.037)	-0.057* (0.035)	-0.123** (0.061)	-0.197*** (0.066)	-0.018 (0.017)
Reference group	Demand≈Supply					
Control Variables	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	1,006	1,006	1,006	1,004	1,005	1,006

Note: The control variables include gender, age, age squared term, education level, total number of labor force in the family, proportion of agricultural labor force, years of agricultural work, occupation type and professional title. Heteroscedasticity robust standard errors are in parentheses. \* p<0.1, \*\* p<0.05, \*\*\* p<0.01.

## Conclusion

- When the demand for farmer training is higher, the training effect is better. When farmers are more satisfied with the supply of current farmer training, the training effect is better.
- The higher the matching degree of demand and supply in farmer training is, the better the training effect is.
- Subjectively, the farmers think that the training effect is best when demand ≈ supply. From the objective training effect, when supply is higher than demand, the training effect is better than demand ≈ supply.

