SOME MEASURES TO IMPROVE QUALITY OF TRAINING COURSES FOR AN GIANG PEASANTS

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One of the biggest challenges to survival and development of the agriculture in the context of globalization is peasants' knowledge about agricultural production. To enhance their general education, the best way is to agricultural extension system with intensive training courses. In the past few years, a series of training courses have been held all over the country. Training quality is the key to sustainable development of training programs and improvements in efficient use of resources provided for peasants by the government. An overall estimation of the quality of such programs, however, has not been done. To reach such estimation, it's necessary to grasp peasants' satisfaction of training programs provided. How to identify factors that satisfy the peasants and quantify them is a problem the agricultural training system must pay full attention to. To serve this effort, the article discusses three issues: theoretical framework of a quantitative model, applied results and suggestion of solutions to improvements in training courses given by agricultural extension authority.

1. Theoretical framework of the quantitative model

a. Theoretical framework

According to Kotler [4] (after Lin, 2003), satisfaction is "a person's feelings of pleasure or disappointment resulting from comparing a product's perceived performance (or outcome) in relation to his or her expectations."

According to Parasuraman, Zeithaml, Berry (1985), Curry (1999), and Luck and Laton (2000) [5], the satisfaction can be measured by five to seven key levels. The Likert scale is used for rating the levels.

For example, degree of customer satisfaction can be rated from 1 to 7: the higher the score, the higher the satisfaction.

	7	6	5	4	3	2	1
Quick response to demands/ suggestions by trainees.							

According to Parasuraman, Zeithaml, Berry (1991) [6], there are five factors that affect the customer satisfaction:

(1) Tangibles: Appearance of physical facilities, equipment, and communication materials

(2) Reliability: Ability to perform the promised service dependably and accurately.

(3) Responsiveness: Willingness to help customers and provide prompt service.

(4) Assurance: Knowledge and courtesy of employees and their ability to convey trust and confidence.

(5) Empathy: The firm provides care and individualized attention to its customers

Application of the model to training programs for peasants is as follows: (See Figure 1)

Figure 1: Factors affecting the satisfaction

Thus the model comprises five factors and 25 observed variables (each factor includes many variables).

b. Quantitative method:

Satisfaction (SAT) = f (TAN, REL, ASS, EMP, REL)

SAT: dependent variable; TAN, REL, ASS, EMP, REL: independent variables
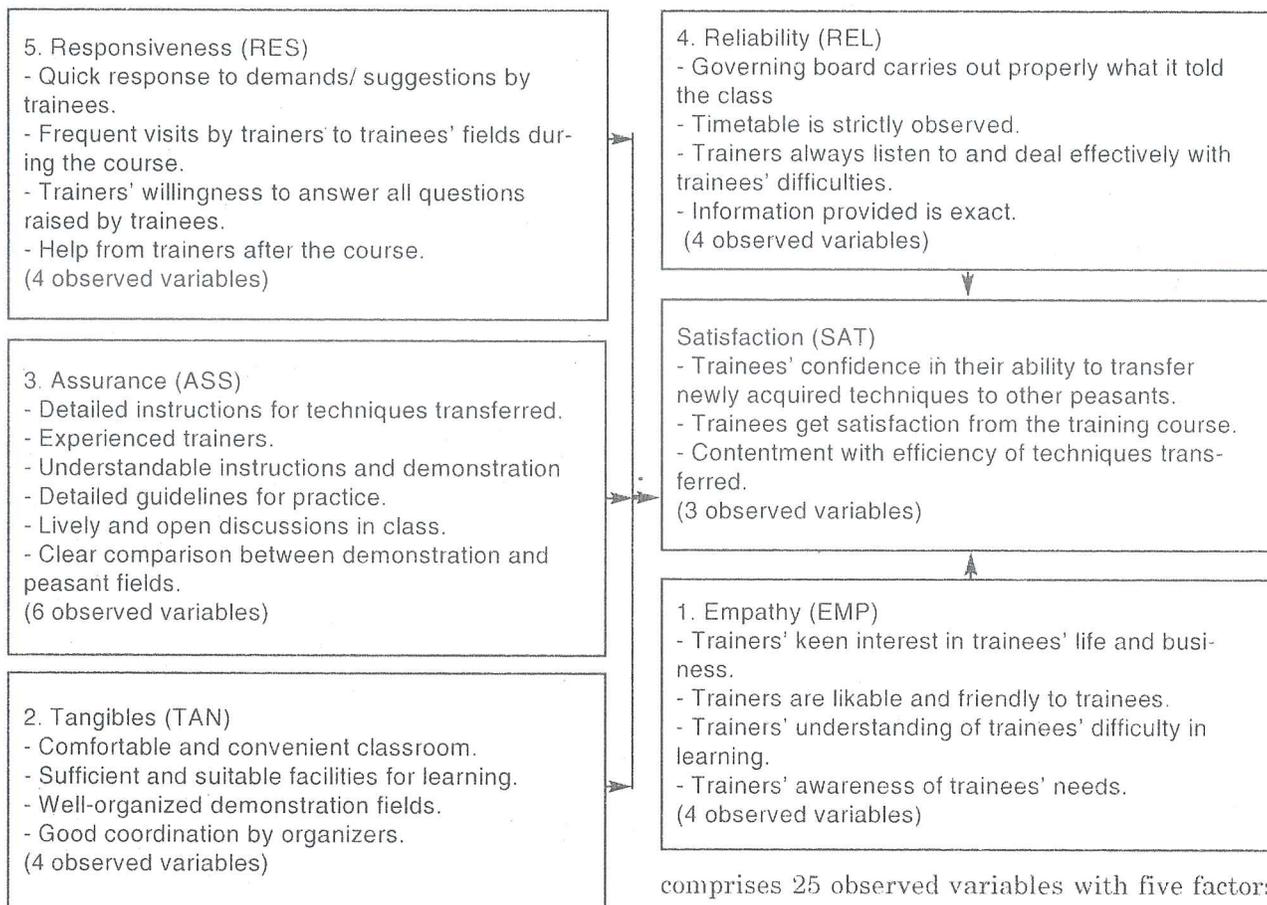
Two steps should be taken to quantify factors affecting the trainees' satisfaction.

- Factor analysis is used for testing the factors affecting the satisfaction and identifying components considered as appropriate by trainees.

- Multiple regression analysis is used for identifying factors affecting the satisfaction with certain statistical significance.

Both steps are carried out with help from the software SPSS-16.0.

Figure 1: Factors affecting the satisfaction

5. Responsiveness (RES)
- Quick response to demands/ suggestions by trainees.
- Frequent visits by trainers to trainees' fields during the course.
- Trainers' willingness to answer all questions raised by trainees.
- Help from trainers after the course.
(4 observed variables)

4. Reliability (REL)
- Governing board carries out properly what it told the class
- Timetable is strictly observed.
- Trainers always listen to and deal effectively with trainees' difficulties.
- Information provided is exact.
(4 observed variables)

3. Assurance (ASS)
- Detailed instructions for techniques transferred.
- Experienced trainers.
- Understandable instructions and demonstration
- Detailed guidelines for practice.
- Lively and open discussions in class.
- Clear comparison between demonstration and peasant fields.
(6 observed variables)

Satisfaction (SAT)
- Trainees' confidence in their ability to transfer newly acquired techniques to other peasants.
- Trainees get satisfaction from the training course.
- Contentment with efficiency of techniques transferred.
(3 observed variables)

2. Tangibles (TAN)
- Comfortable and convenient classroom.
- Sufficient and suitable facilities for learning.
- Well-organized demonstration fields.
- Good coordination by organizers.
(4 observed variables)

1. Empathy (EMP)
- Trainers' keen interest in trainees' life and business.
- Trainers are likable and friendly to trainees.
- Trainers' understanding of trainees' difficulty in learning.
- Trainers' awareness of trainees' needs.
(4 observed variables)

2. Results of application in An Giang

To enhance efficiency of agricultural production, An Giang government has launched a program called "three decreases – three increases" that aims at decreasing volume of seeds, inorganic fertilizer and insecticide; and increasing yield, quality and profit. The program gave 993 short-term training courses in 2002 – 2006 and local peasants benefited a lot from this effort. In 2006 [1], production cost of a kilogram of rice reduced by 12% while the yield rose by 4.5%. To apply the quantitative model measuring the trainee satisfaction, the research group sought for opinions among trainees from 11 districts of the An Giang Province [2]. With 235 participants selected by random sampling and interviews through questionnaire based on a five-point scale and five factors affecting the satisfaction, the research group carried out the following steps.

- Step 1: Factor analysis:

- Identifying the factors: The questionnaire comprises 25 observed variables with five factors assumed according to the theoretical framework (Figure 1).

The software SPSS – Factor analysis, after five rounds, produced the results with assured tests.

(1) Test of reliability of observed variables (factor loading > 0.55)

(2) Sampling adequacy test (0.5 < KMO < 1)

(3) Bartlett test of relations of observed variables (Sig. > 0.05)

(4) Cumulative variance test (cumulative variance > 50%)

Table 1 shows that, unlike the theoretical model, the factor analysis identifies only three factors that ensure analytical significance. The first factor comprises variables of responsiveness and one variable of empathy; and this factor is named responsiveness X_1. The second factor comprises two Assurance variables and one Reliability variable and it is named as X_2. The third factor comprises one Reliability variable and one Responsiveness variable and it is named as X_3.

Table 1: Rotated components Matrix

Observed variables	Component		
	1	2	3
Trainers always listen to and deal effectively with trainees' difficulties (Rel 3)			0.791
Information provided is exact (Rel 4)		0.672	
Frequent visits by trainers to trainees' fields during the course (Res 2)	0.723		
Trainers' willingness to answer all questions raised by trainees (Res 3)			0.858
Help from trainers after the course (Res 4)	0.823		
Detailed instructions for the "3-decrease and 3-increase" technique transferred (Ass 1)		0.765	
Clear comparison of yield between demonstration and peasant fields after harvest (Ass 6)		0.757	
Trainers' keen interest in trainees' life and business (Emp 1)	0.762		

Note: Numbers in the table are factor loading coefficients

Thus, the model becomes:

$SAT = f(X_1, X_2, X_3)$

The factor SAT is quantified by calculating the average of its three observed variables. Factors X_1, X_2, and X_3 are also quantified similarly.

- S tep 2: Applying the multiple regression analysis:

Using the SPSS -- Multiple Regression Analysis produces the following results.

Table 2: Multiple regression results

	Regression coefficient Bi	t	Sig.
(Constant)	1.07		
X_1	0.352	6.227	0.000
X_2	0.3	5.296	0.000
X_3	0.215	3.791	0.000

Dependent variable: Trainee satisfaction (SAT)

Table 2 shows that regression coefficients (Bi) have statistical significance of 99% (significance <0.01).

The correlative coefficient of the factor RES (X_1) is 0.352. This means that the satisfaction increases 0.352 point when the score given by trainees increases 1 point.

The correlative coefficient of the factor ASS (X_2) is 0.3. This means that the satisfaction increases 0.3 point when the score increases 1 point. The correlative coefficient of the factor EMP (X_3) is 0.215. This means that the satisfaction increases 0.215 point when the score increases 1 point.

Value of the adjusted R2 is 0.26. This means that variables X_1, X_2 and X_2.explain 26% of changes in the trainee satisfaction.

Table 3: Analysis of variance (ANOVA)

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	69.859	3	20.286	27.065	0.000
Residual	173.141	231	0.750		
Total	234.000	234			

a. Predictors: (Constant), X_1, X_2, X_3

b. Dependent Variable: SAT

The F-test is used for testing the model adequacy. The significance is smaller than 0.01, therefore regression coefficients of independent variables are different from zero. Thus, the model is appropriate to reality.

Table 4: Variable correlation matrix

		RES	ASS	EMP	SAT
Responsiveness	Correlative coefficient	1			
Assurance	Correlative coefficient	0.000	1		
Empathy	Correlative coefficient	0.000	0.00	1	
Satisfaction	Correlative coefficient	0.352	0.3	0.215	1

The Table 4 shows that variables X_1, X_2, X_3 has no correlation with one another. This means that the model is free from colinearity among independent variables.

The Table 5 shows that significance of Spearman's rank correlation coefficients is greater than 0.05, therefore variance of error doesn't change.

Conclusion: Tests of the regression model prove that factors that affect the trainee satisfaction are RES, ASS and EMP

Spearman's rho			ABSRES
	ABSRES	Correlation Coefficient	1.000
		Sig. (2-tailed)	.
		N	235
	X_1	Correlation Coefficient	0.048
		Sig. (2-tailed)	0.465
		N	235
	X_2	Correlation Coefficient	0.022
		Sig. (2-tailed)	0.734
		N	235
	X_3	Correlation Coefficient	-0.012
		Sig. (2-tailed)	0.849
		N	235

Table 5: Heteroskedasticity test

3. Suggestions on policies

To enhance the quality of training courses supplied to peasants, authorities must perfect the following aspects.

(1) During the course, trainers should visit fields of trainees on a periodical basis to give detailed instructions to help them realize transferred techniques in a way appropriate to realities.

(2) Provincial crop protection authorities make list of trainees and send them to district technicians and agricultural authorities requiring them to keep contact with trainees and encourage them to join peasants clubs to disseminate and get new knowledge and techniques without attending new courses.

(3) Information about land and size of trainees' families should be gathered and supplied to trainers to help them understand problems to trainees during and after the courses.

(4) Access to the Internet must be available for crop protection authorities of district level to help them gather and disseminate information among peasants. Programs to supply agricultural information to peasants must be accelerated.

(5) Comparison between demonstration and peasant fields must be carried regularly and strictly to affirm efficiency of new techniques after harvest time.

(6) Training courses for trainers must pay attention to habit of listening to and answering questions from trainees. In the long run, the trainers should be sent to vocational centers to make studies on education and obtain necessary pedagogical degrees.

(7) Bonuses and incentives must be offered to trainers who pay full attention to problems with trainees.

(8) The quantitative model with support from the software SPSS is simple and easy to apply to peasant training courses, even at the district level. Gathering information from trainees through closed-end questionnaires is also easy and cheap, which allows regular updates on necessary topics. Studies of satisfaction can serve as an instrument for attracting more peasants to training courses and providing them with new techniques and knowledge. Gathering the information should be carried periodically (after completion of the course) with samples representing some 5% of trainees■

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