

# Adoption of Farmer Field School to Develop Entrepreneurship: The Case of Paddy Seed Growers and Small Business Trainees in Indonesia

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## Abstract

Filed school (FS) – in which it is the latest agricultural extension model – have succeeded to develop farmers' awareness and ability to make a proper decision in adoption of innovation as a problem solving. Hypothetically, it would be a suitable way to develop entrepreneurship for farmer and small business holder. The paper aims to identify the participation level of paddy-seed-grower as well as small business trainee and its relationship to the entrepreneurship. The participation consists of idea, time, manpower, and fund contribution; while the entrepreneurship is initiative & risk taking ability and management skill performing. Based on Likert scale, farmer got high manpower and time dedication; and risk taking ability. The  $X^2$  test revealed that significant effect of participation toward entrepreneurship is merely for experienced and more educated participant and wider farming land owner. Therefore, the adoption of FS needs specific design for certain participants.

**Keywords:** Participation, entrepreneurship, Field school, Indonesia

## 1. Introduction

Field School (FS) is the latest model of agricultural extension and training in Indonesia, although it is not new. The model has gotten succeeded to deliver equal knowledge within various farmer communities. The model has also had an ability to persuade the farmer to adopt the principle of good agricultural practices, with minor gap between expected and actual knowledge and practices [9].

The training is the process of learning to acquire information, skill, and concept to change the attitude and behavior to develop people's performance. The FS training does not deliver an innovation from the sources system to recipient in one way traffic, but it emphasizes to extend the human capacity [9]. Godrick Khisa [7] emphasized, in FS training, the participants got experience by doing, experimenting, participating and discovering. The farmers are not recipients but participants, in which they got equal position with the facilitators. In this context, SUSTAINET EA [17] described the basic principle of FS, which included: empowering farmer with knowledge and skill; making

farmer expert in their field; sharpening the farmer's ability to make critical and informed decision; and helping farmer learn how to organize themselves and communities.

The basic principle of FS has given the significant impact for the farmer awareness. Khatam *et al.* [6] -- based on the Pakistan's experience -- presented the major ten points as the FS's strength in the farmer's view which included sequentially: (1) improve the knowledge of the farmer; (2) help the farmer in learning by doing; (3) discourage the use of pesticide; (4) promote local plants recipes; (5) provide systematic training and learning process; (6) help the farmer in problem identification by themselves; (7) encourage balanced uses of fertilizer; (8) reduce of cost production; (9) promote community organizations; and (10) learn better leadership, communication and management skill.

The two researches of Mancini & Jiggins [11] and Yorobi Jr [21] presented the same trend of farmer awareness as the main impact of FS, by indicator of reducing of pesticide budget. The FS in India has succeeded to reduce 78% of pesticide use within two years [11]. The experience of Yorobi of Philippines onion's farmer indicated the strong decrease of dependent upon pesticide [21].

The FS, previously, was designed for integrated pest management to reduce the strong dependent upon chemical pesticide in control of insect and plant disease [21]. However, the FS scope has extended innovatively to the integrated crop management (ICM) and good agricultural practice (GAP) [11]. Actually, the basic principle of FS model has been needed and could be picked up to develop the awareness about certain object such health and entrepreneurship [2]. In this context, the Local Agricultural Service District of Serang sponsored the development of entrepreneurship of paddy-seed growers, and The Main Service Station for Work Market and Work Chance Extension of West Java provided the training service to extend the entrepreneurship for small business holders. The two institutions picked the basic principle of FS [10; 18]. The question is in what extent the FS has succeeded to bring the participation and entrepreneurship of FS members, and the relationship between participation and entrepreneurship.

**2. Framework Analysis**

**A. Entrepreneurship**

Entrepreneurship which is defined as a mental dynamic driven by certain internal forces to obtain something and a certain target – is dependent variable. The entrepreneurship is also a creative and innovative ability as a basic way to search a chance toward successful condition. Creativity is a skill and ability to develop new idea to solve the problem and browse the chance; while the innovation is an ability to apply the yield of creation to solve the problem practically and find the chance [8]. Finally, the entrepreneurship is a commitment to organize, handle, and pay the economic activity [13].

As a spirit and dynamic, the entrepreneurship performs the positive thinking, need for achievement, brave to face the risk, develop self-confidence, power of thought and skill; capable to make a right decision and problem solving, planning, and able to perform a better team work; and finally able to catch the business chance [8]. However, the entrepreneurship, indeed, never goes outside the three elements which include: (21) the risk taking ability, supported strongly by (2) initiative taking, and (3) ability to organize the socio-economic mechanism to turn resources and situation into practical account [19]. Actually, the three aspects of entrepreneurship are essential to get a successful business.

Truthfully, the entrepreneurship is the consequence of high level of need for achievement (n-ach). Vernon Katz [20], in the light of McClelland perspective revealed that the high score of n-ach contributed to the spirit of entrepreneurship. By the high level of n-ach, McClelland argued, someone will be encouraged to get know the things relevant with his interest, to experiment, to develop his skill, and finally come to proper decision [12].

**B. Participation Level**

Participation level is the main predictor for entrepreneurship development based on the assumption, that if the FS has succeeded to deliver the farmer’s awareness and ability to make a proper decision [2], it should have to be a perfect way to enlarge participation level. The important keyword to measure the participation is an involvement [1], in which it is supported by voluntary contribution, self-determination, active process, and dialogue [3]. The types of community involvement and contribution could be in the form of idea, time and social activity, man power dedication, and fund contribution [10]. As a coming from the members and by the member activity, the participation level of FS hypothetically is a determinant factor toward entrepreneurship. The hypothesis gets stronger by the experience of Small Business Institute (SBI) in USA which administered the one semester-long course of entrepreneurship that revealed, the complete participation of students affected significantly the entrepreneurship attitude [5].

**C. The Socio-economic Characteristic**

The Socio-economic characteristic should be considered as intervening variables which hide the impact of participation to the entrepreneurship. In the case of SBI, the demographic characteristic – especially the gender – has also a strong impact to the entrepreneurship [5]. The impact of gender is also found significantly in Nigeria with

the case of cassava entrepreneurship development [4]. The socio-economic characteristics -- which includes farm land size, farming status, marital status, adult number in household, frequency of extension contact, health status of members, daily non-farm wage, time spent for cassava and for other housework activities, and level of formal education – has different impact for the male and female cassava headed-household [4].

The evidence of research in Iranian context indicated the strong important of motivation as the priority to develop entrepreneurship, which is followed sequentially by self-sufficiency plan, individual factors, family support and family finance, socio-cultural aspects, and family circumstance [19]. The research within the same context and area presented the tendency of the importance of motivation, opportunity, education and skill as requirements to develop entrepreneurship [13]. In addition, the qualitative content analysis of 21 TV program of entrepreneurship development by presenting the prominent entrepreneurship represented the significant impact of personality feature, demographic characteristics, sociocultural factors, socio-economic factors, legal and political factors toward entrepreneurship spirit [14].

Based on the previous finding, the research focus is to explore the participation level and its impact to the entrepreneurship spirit of paddy-seed growers and small business trainees. However, the socio-economic background is inevitable as the intervening variable. For the context of the entrepreneurship development of the farmer and small business holders, the important socio-economic aspects are: age, education level, work experience, and farming land size. Relevant with the context, the framework analysis is presented in Figure 1.

The socio-economic characteristics of the farmer is probably contributed to the participation level [3], but in this context, it is not the focus of the research. The intension of the research is to identify the participation level of FS members, and its impact to extend the entrepreneurship. In other sentence, the research aims to explore the role of FS in developing the awareness of innovation in the form of entrepreneurship spirit. The socio-economic characteristics are assumed to be intervening variable. Based on the assumption and the research purpose, the research hypothesis is: (1) there is a strong correlation between participation and entrepreneurship; and (2) there is also a significant relationship between the socio-economic characteristics and entrepreneurship.

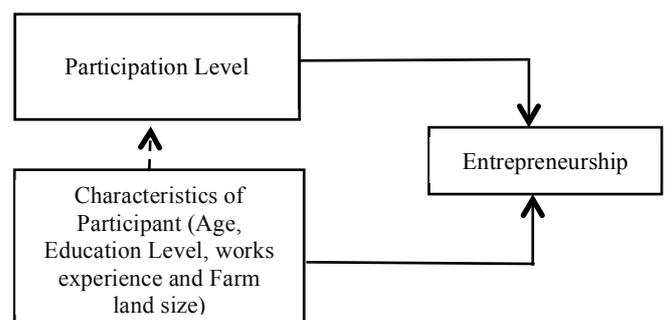


Figure 1. Framework analysis

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**3. Research Method**

**A. Usability Evaluation**

This paper used secondary data of farmer groups of paddy-seed growers in Banten and small business trainees in West Java [10; 18]. The two researches adopted the total sampling technique, in which the sample is four groups of paddy-seed growers and four groups of small business. The seed grower’s entrepreneurship training was conducted in 2015; while the small business holders training was executed in 2016.

The entrepreneurship – in which it is operationally defined as the ability initiative taking, risk taking and performing the managerial skill and measured by Likert Scale in three level of response – is dependent variable. The independent variable is participation -- which consists of idea and time and social activity devotion, manpower dedication, and fund contribution – is also in line with the mentioned Likert Scale. The characteristic of trainees – that included age, work experience, education level and farming land size – is predicted as intervening variable disturb the relationship between participation and entrepreneurship. Based on the Likert scale, the range of entrepreneurship and participation are as following: [16].

Range:

$$\frac{\text{The Highest Score of Likert Scale} - \text{The lowest Score of Likert Scale}}{\text{The Used Likert Scale}}$$

In the light of the formula, the range of entrepreneurship level and participation is  $5-1/3 = 1,3$ . Consequently, the level of entrepreneurship and participation is lowest (1.0-2.3), moderate (2.4-3.7), and highest (3.8-5.0). The correlation between participation and entrepreneurship is analyzed by product moment correlation; while the contribution of farmer characteristic to the entrepreneurship is analyzed by chi square test.

**4. Result and Discussion**

**A. The Participation Level of Field School Members**

The two groups of paddy-seed growers and small business trainee got high score of time & social activity, in which they are ready to use their time for FS activities. The other aspects of participation, which consists of fund and idea involvement gets low and moderate score for the two groups, except manpower providing for paddy-seed grower, which it got high participation. Therefore, the FS members are weak to express their idea and to dedicate their assets for FS activities.

**B. The Entrepreneurship Level of Field School**

**Members**

The ability of risk taking is high for paddy seed growers, and the management skill is also high for small business trainees (Table 2). The entrepreneurship consists of three mains aspects: initiative taking, risk taking, and management skill. Actually, the entrepreneurship is a mental attitude reflects people’s behavior. The successful of business to certain extent is depend upon the mental and attitude. The three aspects of entrepreneurship are the main indicators of entrepreneurship level, but could not be separated each other completely toward business development. The initiative taking ability and the management skill should be provided mainly for paddy-seed growers; while the small business trainees need to extend their ability of risk taking and initiative taking to extend entrepreneurship.

**C. The Correlation of Participation Level to the Entrepreneurship**

The high participation level hypothetically affects the entrepreneurship. The article tries to correlate each element of participation (idea, manpower, time and fund) to each aspect of entrepreneurship (initiative & risk taking and management skill) for paddy-seed growers and small business trainees. However, the result indicated the absence of correlation between each element of participation to each aspect of entrepreneurship. The research adopted four grades of correlation: very low, low, moderate, strong, and very strong (Table 3).

**D. The Variables Contribute to the Entrepreneurship**

Based on chi square test, the participation level has a significant effect to the entrepreneurship, but it is merely for small business trainees (Table 4). By the fact, the research identified variable of age, education, work experience, and farming land size as intervening variables. The work experience has a significant effect for the entrepreneurship of both paddy-seed growers and small business trainees. The education level is also inevitable for entrepreneurship extension, especially for small business trainee. (Table 4).

The research finding is in line with the extension education activity for entrepreneurship development of the small farmer in Nigeria. The research indicated, the Nigerian small farmer has limited entrepreneurial skill because of the old age, illiteracy, lack of skill, and limited access to the economic facility (Onyebinama & Onyeboinama, 2010). Therefore, the extension education should be accompanied by empowering and socio-economic facilities as a comprehensive package with the skill extension (the technical as well as managerial skill).

Table 1. Participation Level of Field School Members

N o.	Kind of Participati on	Paddy Seed Grower		Small Business Trainee	
		Participati on Score	Participati on Level	Participati on Score	Participati on Level
1	Idea	2.30	Low	3.20	Moderate
2	Time & Social Activity	4.25	High	4.08	High
3	Manpowe r	4.25	High	3.32	Moderate
4	Fund	1.80	Low	3.19	Moderate
	Average	3.15	Moderate	3.45	Moderate

Note: 1,0-2,3 = low; 2,4-3,7 = Moderate; 3,8-5,0 = High

**Table 2. Entrepreneurship Level of Field School Members**

No.	Kind of Participation	Paddy Seed Grower		Small Business Trainee	
		Participation Score	Participation Level	Participation Score	Participation Level
1	Initiative Taking	3.50	Moderate	3.70	Moderate
2	Risk Taking	4.10	High	3.73	Moderate
3	Management Skill	3.70	Moderate	3.81	High
	Average	3.76	Moderate	3.75	Moderate

**Note:** 1,0-2,3 = low; 2,4-3,7 = Moderate; 3,8-5,0 = High

**Table 3. The Correlation of Participation to the Entrepreneurship**

Kind of Participation	Paddy Seed Grower					
	IT		RT		MS	
	PMC	Sig	PMC	Sig	PMC	Sig
Idea	0.182	VL	0.046	VL	0.043	VL
Time & Social Activity	0.081	VL	0.099	VL	0.093	VL
Manpower	0.093	VL	0.072	VL	0.004	VL
Fund & skill	0.013	VL	0.069	VL	0.268	VL

Note: IT = Initiative taking; RT = Risk Taking; MS = Management Skill; PMC = Product Moment Correlation, 0.00-0.199 = Very Low (VL); 0.20-0.399 = Low (L); 0.40-0.599 = Moderate (M); 0.60-0.799 = Strong (S); 0.80-1.00 = Very strong

**Table 4. The Correlation of Participation to the Entrepreneurship**

Kind of Participation	Small Business Trainee					
	IT		RT		MS	
	PM C	Sig	PM C	PM C	Sig	PM C
Idea	0.098	VL	0.419	0.098	VL	0.419
Time & Social Activity	0.152	L	0.212	0.152	L	0.212
Manpower	0.92	VL	0.364	0.92	VL	0.364
Fund & skill	0.241	L	0.551	0.241	L	0.551

Note: IT = Initiative taking; RT = Risk Taking; MS = Management Skill; PMC = Product Moment Correlation, 0.00-0.199 = Very Low (VL); 0.20-0.399 = Low (L); 0.40-0.599 = Moderate (M); 0.60-0.799 = Strong (S); 0.80-1.00 = Very strong

**Table 5. The Variable Contributes to the Entrepreneurship of Field School Members**

No	Variable	Paddy Seed Growers		Small Business Trainee	
		X2	Sig	X2	Sig
1	Participation Level	2.212	0.331	12.505	0.014**
2	Age	1.823	0.402	4.849	0.563
3	Education Level	1.878	0.758	10.039	0.040**
4	Work Experience	4.848	0.028*	21.897	0.005**
5	Farming land size	5.690	0.017*	-	-

**5. Conclusion**

The basic principle of FS could effectively be adopted as an extension model to develop entrepreneurship, but it needs a special design based on the socio-economic status

of participants, such as education, age, work experience, and the owned asset. The general design of FS will get unsuccessful to develop innovativeness. In addition, the FS extension should be accompanied by the comprehensive package of farmer empowering.

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