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Evaluation of organic farming field schools in Gunung Kidul Regency, Special Region of Yogyakarta

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ABSTRACT

Introduction: This study evaluates the effectiveness of organic farming field schools in Giritirto Village, utilizing the comprehensive CIPPO evaluation model, which encompasses context, input, process, product, and outcome. The research aims to assess the simultaneous influence of both internal and external factors on the efficacy of these field schools while identifying specific variables that exert partial effects on their success. **Methods**:A survey-based methodology was employed, targeting 50 farmers actively engaged in organic farming within the region. Data analysis was conducted using multiple linear regression tests. **Results:** The findings reveal a high level of effectiveness in the implementation of organic farming field schools, with a CIPPO evaluation score of 83.98% and a statistically significant paired t-test result of 0.000. Internal factors such as age, education level, farming experience, social participation, and cosmopolitanism significantly influence the effectiveness of these programs. Additionally, external factors, particularly the roles played by farmer groups and agricultural extension workers, were found to have substantial impacts. Notably, agricultural extension workers were identified as having a partial effect on the implementation success of field schools. **Conclusion**: In conclusion, the study highlights that the organic farming field school in Giritirto Villageis highly effective, influenced by both internal and external factors. The pivotal role of agricultural extension workers is emphasized as a key determinant in achieving successful outcomes for organic farming initiatives. This research contributes valuable insights into enhancing agricultural extension programs and underscores the need for targeted interventions to sustain the positive impacts of field school initiatives.

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INTRODUCTION

The world food crisis is predicted to occur in the next fifty years. In 2018, the FAO estimated a demand to produce 50% more food to offset the population increase by the year 2050 (Lasminingrat & Efriza, 2020). Based on this, the Ministry of Agriculture has taken preemptive measures to ensure food security in Indonesia. The Ministry of Agriculture supports farmers in the extensive use of organic fertilizers. This support comes in the form of launching the Pro-Organic Farming Movement (Genta Organik). The Pro-Organic Farming Movement will be implemented through organic farming field schools (Izha, 2023).

Farmers' behavior in Gunung Kidul still relies on the use of chemical fertilizers such as NPK fertilizers, urea, and similar substances (Badrun *et al.*, 2019). This is also supported by the testimony of agricultural extension officers from BPP Purwosari that farmers in the Gunung Kidul area still heavily depend on chemical fertilizers, both subsidized and non-subsidized, in cultivating horticultural crops such as shallots. The continuous use of chemical fertilizers and pesticides can lead to soil fertility depletion and environmental damage. The increasing use of chemical fertilizers over time can result in paddy fields becoming harder and less fertile over time (Ningsih, 2011).

In 2021, shallot production in Gunung Kidul Regency experienced a very rapid increase. The percentage increase in shallot production from 2020 to 2021 is quite significant, reaching a 137.3% increase compared to the production in 2020, which was only 760 tons. Purwosari Subdistrict in 2021 had a harvested area of shallots covering 19.42 hectares with a production of 151 tons (Gunung Kidul Regency, 2021). The harvested area in Purwosari Subdistrict increased from 13 hectares in 2020 to 19.42 hectares in 2021 (BPS-Statistics of Gunungkidul Regency, 2022). One of the villages with the potential for shallot cultivation is Giritirto Village. In 2022, Giritirto Village was able to produce 34.254 tons of shallots.

Based on this, it is important to conduct organic farming field school activities in Giritiro Village, Purwosari Subdistrict, Gunung Kidul Regency, with a focus on the development of shallot commodities in one planting season from March to July 2023. In addition, the effectiveness of the field school implementation needs to be assessed. The effectiveness of the field school is influenced by various factors, not only from environmental factors but also from internal factors of the farmers themselves, such as age, education, knowledge, skills, attitude, and motivation (Mardian *et al.*, 2020).

According to the planned objectives of the organic farming field school, which aims to enhance farmers' capacity in creating and applying organic fertilizers, the implementation of this field school can be assessed by evaluating the response, learning, behavior, and outcomes of the field school (Diab, 2015). The long-term impact of implementing this field school is determined by the quality of the field school, the scope of the curriculum, and the institutional environment (van den Berg *et al.*, 2020).

Thus, measuring the effectiveness of the implementation of the field school and its influencing factors needs to be conducted to assess the success and impact of the field school program, enabling future evaluations to improve the quality of the field school. This is in line with the study conducted titled "The Effectiveness of Implementing Organic Farming Field Schools in Giritirto Village, Purwosari Sub-District, Gunung Kidul Regency, Special Region of Yogyakarta".

METHODS

Research location

This research was conducted from March to June 2023 in Giritirto Village, Purwosari Sub-District, Gunung Kidul Regency, Special Region of Yogyakarta. The determination of this location was done using a purposive sampling method.

Sampling method

The sampling method used in this research is the saturation sampling method, where all population members are used as samples. The population consists of 50 participants in the organic farming field school.

Data analysis

Descriptive analysis was used in this research to analyze the effectiveness of the implementation of the organic farming field school with data collected through the CIPPO evaluation questionnaire. Based on Pratiwi *et al.*, (2019), the results of this research are presented in percentage form. The subjects are grouped into three categories: low, medium, and high (Azwar, 2012).

The assessment of the effectiveness of the implementation of the field school (context, input, process, product, attitude aspects, and outcome) uses a Likert scale with the categorization of effectiveness values as follows:

Value A (Very Effective/High)	= 73.334% - 100%
Value B (Effective/Medium)	= 46.667% - 73.334%
Value C (Less Effective/Low)	= 20% - 46.667%

The assessment of knowledge and skill products uses a Guttman scale with the categorization of knowledge and skill product values as follows:

Value A (High)	= 66.67% - 100%
Value B (Medium)	= 33.33% - 66.67%
Value C (Low)	= 0% - 33.33%

This research uses regression analysis to test hypotheses using the multiple linear regression equation to determine the influence of internal and external factors including age (X1), level of education (X2), farming experience (X3), social participation (X4), farmers' cosmopolitan level (X5), farmers' group role (X6), and extension officer's role (X7) on the effectiveness of the implementation of the organic farming field school (Y). Data analysis was conducted using the Statistical Package for Social Sciences (SPSS) software followed by the F-test and coefficient of determination (R-square) test.

RESULT AND DISCUSSION

General description of the area

Administratively, Giritirto Village has an area of 1,095.991 hectares, which includes 7 (seven) hamlets. The area of Giritirto Village is hilly with undulating flat topography and slopes of 0% - 3%. The elevation of Giritirto Village is 500 meters above sea level. The average daily temperature is 27ºC with an average rainfall of ±1883 mm per year, and the number of rainy months is 6 months.

The land use in Giritirto Village includes paddy fields, dry fields, settlements/yards, state forests, and others. The population of Giritirto Village reaches 4,099 people, with the majority of the population being of productive age, totaling 2,758 people. The highest education percentage is junior high school/equivalent at 22.81%. The farmer institutions in Giritirto Village consist of 1 Farmer Group (Gapoktan) and 34 farmer groups.

Characteristics of farmers

According to the Central Statistics Agency (2022), age classification includes children (0-14 years), productive age (15-64 years), and elderly (≥65 years). Based on Table 1, it can be seen that the respondents in this study are predominantly farmers of productive age (15-64 years) with a percentage reaching 90% of all involved respondents. Meanwhile, respondents of non-productive or elderly age only account for 10% of all respondents. Organic farming field schools have participant requirements which include having a productive age, this is one of the participant requirements because farmers of productive age have better physical conditions and higher productivity levels compared to the elderly who have experienced physical decline.

Table 1. Age of farmers in giritirto village

No.	Age	Total	Percentage
1.	0-14	0	0
2.	15-64	45	90
3.	≥ 65	5	10
	Total	50	100

Source: Primary data processing results 2023

According to Mardian *et al.* (2020), farmers of productive age are believed to be able to manage farming businesses well in terms of physical aspects as well as farming knowledge and skills in implementing innovations. In addition, the ability to capture and remember information from field schools is better for young or productive age farmers compared to non-productive or elderly farmers.

Table 2. Level of education of farmers in giritirto village

No.	Level of Education	Total	Percentage
1.	No schooling/Elementary school graduate	4	8
2.	Elementary school or equivalent	11	22
3.	Junior high school or equivalent	26	52
4.	Senior high school or equivalent	8	16
5.	College/University	1	2
	Total	50	100

Source: Primary data processing results 2023

Based on Table 2, it can be observed that the highest level of education among respondents in this study is predominantly junior high school or equivalent, totaling 26 people (52%). Following that, the second-highest education level is elementary school or equivalent, with 11 people (22%), then senior high school or equivalent with 8 people (16%), and finally, only 1 person (2%) has a college/university education. Meanwhile, there are also 4 people (8%) with no schooling/elementary school graduate level of education. As for the participant requirements of the organic farming field school based on the guidelines, it is not specified a minimum education level; it is only mentioned that participants should be able to read and have high interest and motivation. Therefore, the level of education of farmers in Giritirto Village is adequate for participating in field school activities.

This is supported by Slameto *et al.*'s research (2014), stating that the level of education influences one's understanding of what they learn. Additionally, the level of education also affects a person's learning capacity as some learning activities require a certain level of knowledge to comprehend. Furthermore, according to Mardian *et al.* (2020), the level of education plays a crucial role in understanding information during field school participation and technology dissemination.

Table 3. Farming experience

No.	Farming experience	Total	Percentage	Total average
1.	< 5 years	3	6	
2.	5-10 years	14	28	18,18 years
3.	> 10 years	33	66	
	Total	50	100	

Source: Primary Data Processing Results 2023

Soeharjo & Patong (1999) categorized farming experience based on common durations, which generally encompass three categories: less experienced (< 5 years), moderately experienced (5 – 10 years), and experienced (>

10 years). Based on Table 3, it can be seen that respondents in this study have an average farming experience of 18.18 years, with the majority having farming experience of more than 10 years, totaling 33 people (66%), and 14 people (28%) having moderately experienced farming experience of 5-10 years, while the remaining 3 people (6%) have farming experience of less than 5 years. According to Risna *et al.* (2019), the higher a farmer's experience, the greater the knowledge gained to be applied in farming activities, closely related to the farmer's skills in farming and the application of technological innovations in their farming practices.

Social participation level

The average social participation of farmers in Giritirto Village during the implementation of the organic farming field school is classified as high, with a percentage of 75%. In the planning stage, which involves the decision-making process, it is classified as medium with a score of 68%. Based on observations and interviews with several respondents, during the decision-making process regarding the implementation of the field school through farmer discussion forums, many farmers attended the forums. However, when it comes to providing opinions or suggestions in decision-making, only a few of the group leaders actively propose suggestions, while others tend to follow the agreed decisions. This indicates that farmers or members of farmer groups are sufficiently involved in the planning of the organic farming field school.

Table 4. Social participation level

Component indicator level of social participation	Farmers' achievement scores				Category
	Attainment score	Score maximum	Average score	Percentage (%)	
Participation in the decision-making process	170	250	3,40	68	Medium
Participation in the implementation stage	205	250	4,10	82	High
Total	375	500	3,75	75	High

Source: Primary data processing results 2023

Furthermore, participation in the implementation stage of the organic farming field school is classified as high with a score of 82%, where farmers always participate in every meeting of the organic farming field school conducted. During the implementation stage, farmers have a high level of participation, as reflected in their regular attendance and active involvement in the learning process of the field school meetings. According to Lisarini & Hidayat (2013), the success of field school programs is greatly influenced by the participation of program implementers and social participation through farmer group forums can be a more effective and efficient way to achieve program goals. Thus, the high level of social participation in Giritirto Village will support the effectiveness of the implementation of the organic farming field school.

Farmer cosmopolitanism level

Table 5. Level of farmer's cosmopolitan

Component indicator level of farmer cosmopolitanism	Farmers' achievement scores				Category
	Attainment score	Score maximum	Average score	Percentage (%)	
Frequency of farmers leaving their village	144	250	2.88	57.60	Medium
Frequency of farmers meeting innovators	158	250	3.16	63.20	Medium
Frequency of farmers attending extension programs	195	250	3.90	78.00	High
Total	497	750	3.31	66.27	Medium

Source: Primary data processing results 2023

Cosmopolitanism is an attitude of openness toward the world, characterized by having broad relationships and perspectives with the outside world or other groups and exhibiting high mobility. Therefore, the level of cosmopolitanism can be observed through the frequency of travel and the utilization of mass media (Widiarso *et al.*, 2022). Based on this, in Table 5, the frequency of farmers leaving their village is moderate, with a percentage of 56.70%, and the frequency of farmers meeting innovators falls into the moderate category with a percentage of 63.20%. Additionally, the frequency of farmers participating in extension activities is relatively high at 78%. Thus, from these three measurement indicators, the average level of farmer cosmopolitanism in Giritirto Village falls into the moderate category, with a score of 66.27%. A moderate level of farmer cosmopolitanism implies that farmers have sufficient mobility to acquire information from outside their village and to meet innovators, as well as actively participate in extension activities. This level of cosmopolitanism can support the effectiveness of field school implementation because farmers have mobility and openness to information related to their farming activities.

Supported by Widiarso *et al.*'s research (2022), farmer cosmopolitanism influences farming management decisions, and the more farmers seek information related to farming activities, the greater the impact on technology adoption in farming practices.

Role of farmer groups

Farmer groups have three main roles: as a learning class, a cooperation platform, and a production unit. Farmer groups, with their role as a learning class, serve as a platform for teaching and learning among their members to enhance knowledge, skills, and attitudes through access to information and technology resources. In Table 6, the role of farmer groups as a learning class achieves a score of 85.10%, categorizing it as high. In farmer group forums, members receive information about technology applications, exchange experiences regarding cultivation, learn about organic farming processes, and participate in demonstration plot activities facilitated by the farmer groups.

Table 6. Role of farmer groups

Component indicator role of farmer groups	Farmers' achievement scores				Category
	Attainment score	Maximum score	Average score	Percentage (%)	
Learning class	851	1000	4.26	85.10	High
Cooperation platform	1038	1250	4.15	83.04	High
Production unit	987	1250	3.95	78.96	High
Total	2876	3500	4.12	82.17	High

Source: Primary data processing results 2023

Furthermore, the role of farmer groups as a cooperation platform serves as a venue to strengthen cooperation among farmers and other parties. The achievement score for the role of farmer groups as a cooperation platform is 83.04%, categorizing it as high. This role includes building cooperation among farmers in cultivation processes, organizing and implementing task division among members based on mutual agreements, collaborating with providers of production facilities, investing capital for members' business development needs, and collaborating with marketing parties. The role of farmer groups as a production unit achieves a score of 78.96%, also categorized as high. Farmer groups are directed to have the ability to make decisions in determining profitable production development. This role involves planning joint business activities, facilitating the provision of agricultural production facilities, determining production development to maintain quantity, facilitating technology application to maintain production quality, and enhancing agricultural sustainability and environmental resource conservation.

Based on these findings, the average role of farmer groups in Giritirto Village is classified as high, with a percentage of 82.17%. In other words, farmer groups in Giritirto Village have effectively fulfilled their roles as a learning class, cooperation platform, and production unit. According to Slameto *et al.* (2014), high farmer group performance influences the likelihood of higher effectiveness in the field school learning process.

Role of agricultural extension officers

The role of the extension officer as a motivator is to influence, inspire, and encourage farmers to make changes for the better. The extension officer's role as a motivator achieved a score of 87.80%, categorized as high. Next, the role of the extension officer as an educator involves enhancing knowledge, imparting skills, and providing training. The extension officer's role as an educator achieved a score of 86.20%, categorized as high.

Table 7. Role of agricultural extension officers

Components indicators of the role of agricultural extension officers	Farmers' achievement scores				Category
	Attainment score	Maximum score	Average score	Percentage (%)	
Motivator	439	500	4.39	87.80	High
Educator	431	500	4.31	86.20	High
Catalyst	422	500	4.22	84.40	High
Communicator	436	500	4.36	87.20	High
Consultant	446	500	4.46	89.20	High
Facilitator	634	750	4.23	84.53	High
Organizer	409	500	4.09	81.80	High
Total	3217	3750	4.29	85.79	High

Source: Primary data processing results 2023

The extension officer's role as a catalyst obtained a score of 84.40%, categorized as high. The extension officer serves as a solid and balanced connecting figure in bridging government programs and farmers' interests. Furthermore, the role of the extension officer as a communicator scored 87.20%, indicating that the extension officer possesses good communication skills in both group forums and interpersonal communication. Additionally, the role of the

extension officer as a consultant, acting as an advisor, problem solver, and provider of superior agricultural information, achieved a score of 89.20% and is classified as high.

Likewise, the role of the extension officer as a facilitator, which scored 84.53%, falls into the high category. The extension officer facilitates teaching and learning activities, assists farmers in accessing funding from both government and private programs, and helps farmers access markets. Finally, the role of the extension officer as an organizer, fostering collaboration among farmers within a group to divide labor in farming processes, achieved a score of 81.80% and is categorized as high.

Based on the above description, the overall performance score of agricultural extension officers in Giritirto Villageis 85.79% (high). According to Al Asyari (2018), the role of field agricultural extension officers is essential to support the success of programs in introducing and improving community knowledge about the importance of organic agriculture as a whole. Therefore, the high role of extension officers in Giritirto Villagewill enhance the effectiveness of implementing organic farming field schools.

Effectiveness of organic farming field schools

According to Yulianto *et al.* (2008), context evaluation is conducted to assess the program's relevance to the needs of agricultural extension. In Table 8, the evaluation in the context phase is stated to be in the high category with a percentage of 89.20%. This implies that the context, which includes the theme and content of organic farming field schools, is necessary for farmers and aligns with their needs. The theme of these field schools is organic farming, covering topics such as organic fertilizers, biofertilizers, and soil conditioners. The context of these field schools is deemed necessary and suitable for farmers to reduce the use of chemical fertilizers when their prices increase.

Table 8. Evaluation of context, input, process, outcome

Components of organic farming field school effectiveness	Farmers' achievement scores				Category
	Attainment score	Maximum score	Average score	Percentage (%)	
Context	446	500	4.46	89.20	High
Input	616	750	4.11	82.13	High
Process	832	1000	4.16	83.20	High
Outcome	1885	2250	4.19	83.78	High
Total	3779	4500	4.23	83.98	High

Source: Primary data processing results 2023

Input evaluation is used to assess the resources that can support program activities, including supporting facilities or infrastructure and human resources (Purnawirawan *et al.*, 2020). The input phase in the implementation of field schools falls into the high category with a percentage of 82.13%, indicating that the facilities and infrastructure used are adequate, meet the needs of farmers, and support agricultural activities. Facilities and infrastructure refer to the equipment and physical structures used in agricultural extension (Minister of Agriculture Regulation, 2009). Based on observations, the facilities and infrastructure of the field schools are met, including projectors, sound systems, practical materials such as seeds, fertilizers, and various technologies chosen by each group for demonstration plots. Human resources in this context refer to the participants of the field schools, the majority of whom are productive-age farmers (90%), with the most common educational background being junior high school level (52%), and the majority of farmers already have experience in farming (66%). These human resources meet the requirements for field school participants, which recommend having productive age and literacy (Technical Guidelines for Organic Farming Thematic Field Schools, 2022).

Furthermore, in the process phase of implementing field schools, it falls into the high category with a percentage of 83.20%. The process of the organic farming field schools is carried out according to the objectives, where the main goal is to enhance farmers' capacity in making and applying organic fertilizers. Additionally, the materials and media used are in line with the needs of farmers. Materials are suitable for farmers' needs as, when the prices of chemical fertilizers increase, farmers need alternatives to meet their crop nutrient requirements with easily accessible materials. The media used also aligns with farmers' needs, such as presentations through PowerPoint and tangible objects like rice husks, banana bunches, molasses, etc. Delivery of materials by extension workers is clear and easy to understand. Observations and the level of farmer participation in the field school sessions, categorized as high at 82%, indicate that farmers actively attend meetings and participate in learning activities both in the classroom and in practical sessions throughout one planting season, guided by extension workers or trainers. Given these conditions, it can be said that the implementation process of the field schools effectively improves the farming behavior of the participants. According to Prihono & Murdani (2020), implementing learning by methods to enhance participant involvement is effective in improving the farming behavior of participants.

The achievement of the process evaluation is also supported by observations and the level of farmer participation in the implementation of organic farming field schools, categorized as high at 82%. Farmers actively attend the

meetings and participate in learning activities both in the classroom and in practical sessions. This is supported by Yulianto *et al.* (2008), where the evaluation of the process needs to assess program implementation and participant involvement in extension activities.

In the impact evaluation or outcome of organic farming field schools, it falls into the high category with a percentage of 83.78%. This indicates that the field schools have a high impact on social, economic, and environmental aspects. According to Awalina *et al.* (2021), field school activities can have a significant impact in creating farmer self-reliance, leading to environmentally friendly and sustainable farmer economic empowerment. The following table presents the results of the evaluation of the products/outcomes of the implementation of organic farming field schools in Giritirto Village.

Table 9. Product evaluation

Component indicator of effectiveness of organic farming field schools: Product	Farmers' achievement scores			
	Knowledge	Attitude	Skills	Average score
Pre-Test	50.25 %	82.53 %	43.75 %	58.84
Category	Medium	High	Medium	
Post-Test	55.75 %	87 %	58.50 %	67.08
Category	Medium	High	Medium	
Increase	5.50 %	4.47 %	14.75 %	8.24

Source: Primary data processing results 2023

The table above shows that the implementation of organic farming field schools in the Giritirto Village resulted in an increase of 5.50% in the aspect of knowledge, 4.47% in the aspect of attitude, and 14.75% in the aspect of skills. To confirm the differences between the pre-test and post-test results, a difference test was conducted using a paired sample t-test with a significance level of 0.05%. If the significance value of the test results is <0.05, then there is a significant difference. The results of the test can be seen in the following table.

Table 10. Results of the paired t-test

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
average percentage of the pre-test - average percentage of the post-test	-8.23920	14.81503	2.09516	-12.44958	-4.02882	-3.932	9	.000

Source: Primary data processing results 2023

In Table 10, it can be observed that the organic farming field school is effective based on the significance value (2-tailed) in the Paired T-Test, which shows a value of 0.000. With this value, the test result is < 0.05, indicating a significant difference in the results before and after the organic farming field school. This aligns with the study by Bunyatta *et al.*, (2015), which indicates a significant difference between field school participants before and after their participation in the field school in their farming practices as a result of the dissemination impact of the Soil and Crop Management Field School in the North Rift study area, Kenya. The study conducted by Bunyatta *et al.*, (2015) also used the Paired T-Test.

Impact of Internal and external factors on the effectiveness of organic farming field school implementation

Based on Table 11, the multiple linear regression equation is as follows,

$$Y= 18,521 + 0,055\ X_1 + 0,133\ X_2 – 0,018\ X_3 – 0,111\ X_4 + 0,800\ X_5 + 0,215\ X_6 + 0,439\ X_7 + e$$

The analysis results indicate the partial influence of the extension worker's role on the effectiveness of organic farming field schools, with the following equation.

$$Y = 18,521 + 0,439\ X_7 + e$$

Extension workers in Giritirto village play a significant role by fulfilling their duties as motivators, and providing support to farmers to accept innovations in shallot cultivation through organic farming practices. Additionally, extension workers routinely encourage farmers to collaborate among group members during every field school meeting.

Furthermore, extension workers act as educators, providing the latest information on shallot cultivation and guiding farmers through organic farming field school activities. They also serve as intermediaries between farmers and government institutions and connect farmers with providers of production facilities.

Table 11. Regression coefficient test results

Model	Unstandardized coefficients		Standardized coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	18.521	8.981		2,062	0,045
Age	0,055	0,121	0,075	0,452	0,653
Educational Level	0,133	0,449	0,038	0,297	0,768
Farming Experience	-0,018	0,128	-0,023	-0,138	0,891
Farmer Participation Level	-0,111	0,861	-0,019	-0,129	0,898
Farmer Cosmopolitanism Level	0,800	0,753	0,159	1,062	0,294
Farmer Group Role	0,215	0,220	0,174	0,977	0,334
Agricultural Extension Worker Role	0,439	0,188	0,407	2,329	0,025

a. Dependent variable: Field school effectiveness

Source: Primary data processing results 2023

Extension workers in Giritirto Villagedemonstrate effective communication skills in both group forums and interpersonal interactions. This is evident when extension workers periodically visit demonstration plots and deliver presentations in group forums such as during field school activities. In this capacity, they also serve as consultants, helping farmers resolve issues encountered in their fields. Moreover, extension workers facilitate farmers' learning activities in developing their farming enterprises. In addition to their role as facilitators, extension workers guide farmers in task allocation during farming processes and provide managerial guidance through farm analysis at the end of field school activities. According to Zulkarnain *et al.* (2022), the excellent performance of extension workers can assist farmers in effectively solving agricultural issues and serves as an indicator of the success of extension worker performance as an asset in agricultural development.

Therefore, the partial role of extension workers significantly influences the effectiveness of field school implementation. This aligns with the research of Slameto *et al.* (2014), which suggests that extension services are crucial for the adoption rate of agricultural innovations. Through extension services, farmers can gain knowledge and broaden their perspectives to accept new practices. According to Khairunnisa *et al.* (2021), the capacity of extension workers to carry out their duties determines the success of extension programs. The success of programs in enhancing farmers' human resources can be optimized through extension activities conducted by highly capable and competent extension workers, where the capacity of extension workers is defined as the ability to carry out their functions effectively, efficiently, and sustainably (Listiana *et al.*, 2018).

Based on the results of the data analysis conducted, the simultaneous influence of internal and external factors on the effectiveness of organic farming field school implementation in Giritirto Villagecan be seen in the following table, According to Table 12 above, it can be observed that the significance value for the influence of internal and external factors on the effectiveness of organic farming field schools is 0.002, and the calculated F value is 4.051. Therefore, it can be interpreted that both internal and external factors have a significant simultaneous effect. This is because the calculated F value and significance value meet the requirements in the F test or simultaneous test, where the F table value > calculated F value (4.051 > 2.24), and the significance value < 0.05. Thus, in the second hypothesis (H2), the null hypothesis (H0) is rejected, and the alternative hypothesis (Ha) is accepted.

Table 12. Simultaneous Influence

Model		Sum of squares	Df	Mean square	F	Sig.
1	Regression	1707,990	7	243,999	4,051	0,002[b]
	Residual	2529,534	42	60,227		
	Total	4237,524	49			

A. Dependent variable: Field school effectiveness

B. Predictors: (constant), agricultural extension worker role, age, education level, farmer participation level, farmer cosmopolitanism level, farming experience, farmer group role

Source: Primary Data Processing Results 2023

The internal factors in this study include age, level of education, farming experience, level of participation, and farmers' cosmopolitan level. Meanwhile, the external factors include the role of farmer groups and agricultural extension workers. These internal and external factors simultaneously influence the effectiveness of organic farming field schools.

This aligns with the research by Mardian *et al.*, (2020), which suggests that productive age, adequate education level, and strong willingness to engage in farming contribute to the relatively good effectiveness of field schools. Additionally, social participation and farmers' cosmopolitan level are consistent with the findings of Suprayitno *et al.*, (2011), indicating that farmer participation has a positive impact on the sustainability of benefits and a high

cosmopolitan level leads to broader access to various information, enhancing knowledge, attitudes, and skills. Moreover, in line with the research by Slameto *et al.*, (2014), the significant role of farmer groups influences the likelihood of higher effectiveness in the field school learning process, and the role of agricultural extension workers has a tangible impact on improving the effectiveness of field school implementation. Therefore, both internal and external factors of farmers significantly affect the enhancement of field school implementation effectiveness.

Furthermore, based on the analysis, the coefficient of determination results is as follows,

Table 13. Coefficient of determination analysis

Model summary[b]				
Model	R	R Square	Adjusted R square	Std. Error of the estimate
1	0,635[a]	0,403	0,304	7,760606

a. Predictors: (Constant), Agricultural Extension Worker Role, Age, Education Level, Farmer Participation Level, Farmer Cosmopolitanism Level, Farming Experience, Farmer Group Role

b. Dependent Variable: Field School Effectiveness

Source: Primary Data Processing Results 2023

Based on Table 13 above, it can be observed that the coefficient of determination, or R square, is 0.403. This value indicates that 40.3% of the variation in the effectiveness of implementing organic farming field schools in Giritirto Villageis influenced by internal and external factors of farmers. The remaining 59.7% is influenced by other factors outside of the internal and external factors of farmers.

CONCLUSION

Based on the research findings, it can be concluded that the effectiveness of organic farming field schools in Giritirto Village, based on the CIPPO evaluation model (context, input, process, product, outcome), is high or very effective. There is a significant difference between before and after the implementation of the field school. Additionally, age, level of education, farming experience, social participation, farmers' cosmopolitan level, the role of farmer groups, and the role of agricultural extension workers collectively have a significant impact on the effectiveness of implementing organic farming field schools. Moreover, the role of agricultural extension workers individually has a significant impact on the effectiveness of implementing field schools.

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