Effectiveness of community food business development program

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Abstract. The Community Food Business Development Program (CFBD), or PUPM in Indonesia, is a program initiated by the Ministry of Agriculture to address the problem of community food availability. The research question is how far the program can reach its goals and what factors affect it. This study aims to analyse the effectiveness of the CFBD program in the Mukti Farmer Group in Cirebon District and the factors that influence the program's effectiveness. The study sample comprised 70 individuals in the group. Descriptive analysis was performed to evaluate the program's efficacy, and CFA was used to validate latent variables and their indicators. The analysis findings indicate that the CFBD program has an efficacy level of 82.07%. Process, output, and input variables are ordered in addressing importance based on their impact on the effectiveness of the CFBD program. One of the shortcomings of the program is the accuracy of the number of assistants. Therefore, the promotion of assistance could fulfil this need. Apart from that, the evaluation also has to be optimised by the group. The involvement of academicians or NGOs can be used to evaluate the program.

1 Introduction

Food sovereignty refers to the ability of a country or state to autonomously decide on food regulations that uphold the human right to food [1]. The state provides rights to the community by determining the food system, which is a potential local resource [2]. Food security is a global issue in terms of availability, distribution, and consumption [3].

Food availability ensures that the food supply meets community needs in terms of quantity, diversity, quality, and safety [4]. The distribution factor creates an effective and efficient distribution system. This is intended to ensure that the community obtains food sustainably and sufficiently in quantity and quality, and at a reasonably affordable price [5]. Consumption factors direct food utilisation patterns to meet rules such as quality, diversity, nutritional content, safety, and national halalness [6].

Food security is one of the challenges that is a priority for achieving national prosperity [7]. The challenge in achieving food security is that from 2015 to 2025, global changes in food are predicted, so countries will face increasingly difficult situations in achieving, maintaining, and improving the quality of sustainability and food security [6]. Challenges arise from two sides, where the sides reinforce each other's difficulty level, namely from the

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side's supply, which includes supply and supply, and side demand, which includes very dynamic demands and needs [8].

Food security contains elements of food availability and good and wider community access to food availability in terms of physical quantity, quality, and continuity [9]. This physical availability can meet the community's needs. Global climate change that has occurred in the last three years has had an impact on food security [10]. This condition is exacerbated by food farming actors in Indonesia, mostly small-scale farmers with land control levels of less than 0.25 ha [11].

Indonesia's increasingly limited agricultural land makes it difficult for farmers to produce food optimally [12]. An average of 30,000 to 50,000 ha of agricultural land is estimated to be converted to non-agricultural land each year [13]. According to experts, food availability and accessibility are two fundamental components of food security. A nation can only be characterised as having adequate food security if both fundamental requirements are satisfied [14]. Even when enough food is available, food security is often fragile if individual access to meet food demands is not equally distributed [15].

The government is making efforts to ensure that food in Indonesia meets important elements of food security, including food availability and community accessibility. For this reason, the government is holding a Community Food Business Development (CFBD) program through Toko Tani Indonesia (TTI). This program supports the distribution factor in realising food security by creating an effective and efficient distribution system to ensure that the community can obtain food sustainably, sufficiently in quantity and quality, and at reasonably affordable prices [16]. This requirement complies with Law No. 18 of 2012 regarding food and Law No. 7 of 2014 regarding trade. This law emphasises that food must be available in adequate quantities, of good quality, and reasonably priced to maintain affordable purchasing power at the consumer level while protecting producer income.

The CFBD Program through Toko Tani Indonesia is a permanent solution to overcoming these problems, one of which is food price disparities. This program also strives for strategic and efficient supply and price stability of staple food marketing distribution chains by shortening the supply chain [17]. This activity is an effort by the government to maintain supply stability and prices of strategic staple foods, an integrated marketing distribution chain to be more efficient, consumer prices can be transmitted well to farmer (producer) prices, market information between regions runs well, preventing the occurrence of *patron-client* (food entry into a region's market may only be supplied by certain business actors), and preventing *misuse* of market power by certain business actors [18].

The CFBD program indirectly plays a role in overcoming falling prices during the harvest season and soaring prices during the lean season. It is an instrument created by the government to restrain price fluctuations when supply is abundant or reduced [19]. The CFBD is an activity/program to empower Community Food Institutions (LUPM), which means LUPM itself here consisting of associations of farmer groups, farmer groups, and community business institutions operating in the food and industry sectors/ producer/distributor of food ingredients, LUPM carries out its duties to serve marketing partners, namely Toko Tani Indonesia (TTI) in the form of shops/stalls or food commodity traders [20].

The CFBD program, through LUPM or farmer groups and TTI, is empowered to carry out functions as a distribution institution in the distribution chain, which aims to be more efficient and reduce price disparities between producers and consumers [21]. This activity program launched by the Food Security Agency and the Ministry of Agriculture also has the function of continuing to absorb agricultural products at prices that are profitable for farmers and supporting the stability of the supply and variety of strategic staple foods, as well as cutting the food supply chain so that it becomes shorter and profits are obtained. Each chain becomes fairer [22].

According to Sarastuti and Ahmad [23], it was recorded that in 2016 there were 429 LUPM who received benefits, then in 2017, 406 LUPM, in each province, LUPM supplied different food commodities, including South Sumatra supplying rice, Lampung supplying rice, Banten supplying rice, red chillies and shallots, West Java supplying rice, red chillies and shallots, Central Java supplying rice, red chillies and shallots, East Java supplies rice, red chillies and shallots, and West Nusa Tenggara only supplying shallots. The Community Food Business Institution, or LUPM, has supplied food to approximately 2,000 Indonesian Farmers' Stores (TTI) located in districts and cities in 32 provinces, experiencing problems with supply instability and prices of basic and strategic foods.

Rice is the main food commodity that people need. This shows the advantages of a region that has a large rice crop potential. Susukan Sub-district is the largest producer of rice commodities in Cirebon District. According to data from the BPS-Statistics of Cirebon District [24], the planting area of Susukan Subdistrict is 3,667 ha, which is larger than the average planting area of the sub-districts in West Java (2, 539 ha) and the national average area (1, 474 ha). The largest rice planting area in the Susukan Sub-district is Susukan Village, with an area of 1,454 ha, producing 11,328 tons. Susukan Village has a large role in developing rice commodities in the Susukan Sub-district. Thus, trading activities can be key to increasing food price stability. The farmer group that receives the CFBD program in the sub-district is the Mukti Farmer Group in Susukan Village.

The CFBD program is a form of business that farmer groups can carry out. Apart from providing food at relatively affordable prices for the community, it can also be a business activity that groups can perform. So far, farmer groups have only been beneficiaries of productive farming support programs, but the CFBD program plays a role in the trading system. The trading activities carried out by this farmer group are new.

Based on the narrative described in the background, the research problem can be identified as follows: 1) What is the level of effectiveness of implementing Food Development Efforts among farmer groups? and 2) What factors influence the Community Food Enterprise program?

According to Moeheriono [25], the requirements needed in performance assessment are input, which includes determining the aspects to be assessed, process (implementation), and output (results), which include clarity of assessment results regarding the level of effectiveness of a program such as benefits, impacts, risks, and follow-up to assessment recommendations. This research hypothesises that (1) input variables influence the effectiveness of the CFBD, and (2) independent variables influence the level of effectiveness of the Community Food Enterprise Business Development Program.

2 Methodology

This study used a quantitative methodology. Susukan Village, Susukan Sub-district, Cirebon District, is the study site. The object of this study was the Tani Mukti Group. This location was chosen because Susukan Village, especially the Tani Mukti Group, is a leading group in CFBD in Cirebon District, the centre of rice production in the eastern part of West Java. The number of samples is 70 people, all program members, and the Tani Mukti Group members. Before testing the sample, a validity and reliability test was conducted. When the correlation value is more than the r table, it is valid, and the reliability test is reliable if the Cronbach's alpha value is more than 0.60 [26].

The first analysis was a descriptive study to determine the program's effectiveness. According to the Likert scale average, the responses of respondents are categorised as follows: 1) 1.00–1.49 = extremely ineffective, 2) 1.50–2.49 = not effective, 3) 2.50–3.49 =

somewhat effective, 4) 3.50–4.49 = effective, and 5) ≥ 4.50 = extremely effective. Then, using the following procedure, we obtain the average of each indication in percentage form:

$$\text{Effectiveness} = \frac{\text{average of each indicator}}{\text{Maximum scale x } 100\%} \quad (1)$$

The effectiveness ratio was calculated using the research and development criteria [27]. It is as follows: (1) an efficacy ratio below 40% is highly ineffective, (2) an effectiveness ratio between 40% and 59.99% is inadequate, (3) an effectiveness ratio between 60 and 79.99% is moderately attractive, and (4) an effectiveness ratio above 80% is highly effective.

The second is a confirmatory factor analysis to determine which factors influence a program's effectiveness. PLS Software is used. PLS is very effective when the number of samples is small. It will be seen if input, process, or output variables influence the group's performance more.

3 Results and discussion

3.1 Instrument testing results

Table 1 shows the results of the validity and reliability tests. Cronbach's alpha is reliable if the value is > 0.70 or 0.60. It can be seen that all of the Cronbach's alpha values are more than 0.70. Composite reliability is also reliable if the value is greater than 0.70. It is the same as Cronbach's alpha and also the fact. The AVE value is valid if > 0.50. From Table 1, all items are valid if the AVE value is greater than 0.50.

Table 1. Validity and reliability tests.

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
X1	0.911	0.943	0.957	0.917
X3	0.826	0.836	0.896	0.741
Y	0.782	0.782	0.902	0.821

A decent Cronbach's alpha score is > 0.6, and the AVE value is > 0.50, excluding these two factors. While the AVE value for the input construct variable is below 0.5, if we look at the sig value, the input construct variable demonstrates significance, so that it can be used internally as a measurement model. Based on these requirements, all constructs may be regarded as appropriate.

3.2 Descriptive analysis

Based on the average of the Likert scale, responses from respondents were rated according to the following categories: 1) from 1.00 to 1.49 = highly ineffective, 2) 1.50 to 2.49 = ineffective, 3) 2.50 to 3.49 = somewhat effective, 4) 3.50 to 4.49 = effective, and 5) ≥ 4.50 is quite effective.

Table 2 shows that all variables have an effective level of implementation. The most effective is increased employment opportunities in the output variable, and the least effective is the accuracy of the program target in the input variable. Some recommendations can then be released to promote the program if needed.

Table 2. Descriptive analysis.

No.	Variable	Mean	Effectiveness (%)	Mean	Program effectiveness
1	Input variable (X1)			82.00	82.07
	Accuracy of assistance to needs	4.20	84.00		
	Accuracy of program targets	4.00	80.00		
2	Process (X2)			80.00	
	Evaluation	4.00	80.00		
3	Output (X3)			84.20	
	Increased revenue	4.17	83.40		
	Increased employment opportunities	4.29	85.80		
	Increased welfare	4.17	83.40		

3.3 Confirmatory factor analysis

3.3.1 Outer model evaluation

First, to check the convergent validity. If the value is more than 0.5, it can be said to be valid, and vice versa. The results are shown in Table 3. Table 3 shows that all the loading factors are greater than 0.70. This means that all the items or variables are valid.

Table 3. Outer model convergent validity (CV) evaluation values.

	X1	X2	X3	Y
X12	0.948			
X15	0.967			
X24		1.000		
X31			0.849	
X32			0.832	
X33			0.900	
Y1				0.903
Y2				0.909

Table 4 describes the cross-loading. The Cross-loading value displays how indicators and variables are correlated. Cross-loading was used to identify which construct was adequate. It is also relevant to Sulaksana [28] when using cross-loading to examine the impact of indicators on the constructs. When the loading factor is greater than 0.5, it can be considered an adequate or high impact on building construction [11].

Table 4. Cross-loading.

	X1	X2	X3	Y
X12	0.948	0.634	0.642	0.478
X15	0.967	0.838	0.685	0.595
X24	0.779	1.000	0.667	0.634
X31	0.529	0.610	0.849	0.567
X32	0.617	0.536	0.832	0.443
X33	0.663	0.567	0.900	0.476
Y1	0.509	0.576	0.506	0.903
Y2	0.517	0.573	0.548	0.909

3.3.2 Evaluate the inner model

From Figure 1, it can be seen that some variables have been proven to contribute to program performance (effectiveness). Of the three X variables, the process variable contributes the most to program performance. In line with previous research on group performance, the sustainability of groups and prom is affected by the group process and motivation [29,30].

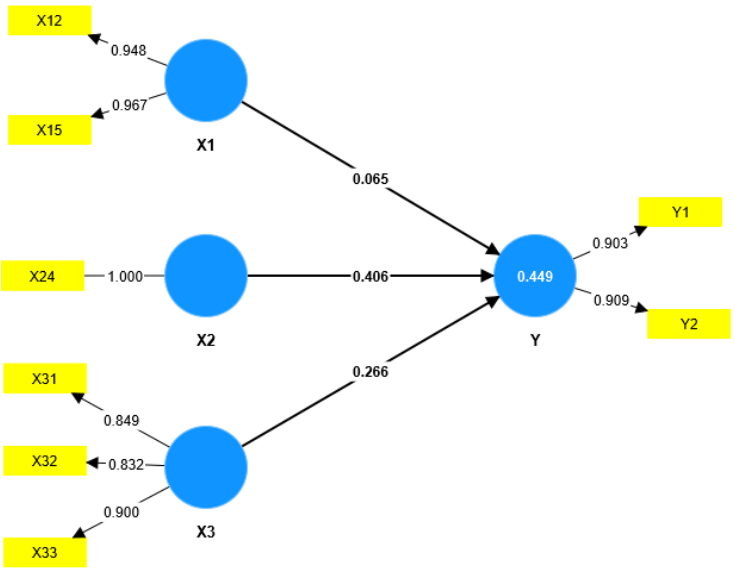

Fig. 1. The role of factors influencing the effectiveness (performance) of a group.

In the input variable (from Figure 1), the result shows that X15 (program target accuracy) reflects more on the input performance, whereas X12 reflects less. In this process, the evaluation reflects the process. In the output, X31 is the least reflective, whereas X33 is the most reflective of the output. Comprehensively, the process variable was the most powerful factor affecting program effectiveness. Table 5 shows that the process variable influences the program's effectiveness the most.

Table 5. The path coefficients.

	Path coefficients
X1 > Y	0.065
X2 > Y	0.406
X3 > Y	0.266

3.4 Effectiveness of the CFBD program

Compared with other effectiveness research, sometimes researchers consider efficiency and equity [31], and others consider only management in organisational effectiveness [32]. According to Sawitri and Made [33], people require food institutions or foodstuffs. Sawitri and Made [33] explained that group knowledge and motivation help the group make the program effective. A qualitative approach was used to measure the effectiveness of food institutions using the criteria of source, process, and target [34]. In addition to what was already discussed, Anggraini et al. [35], who studied CFBD in the South of Lampung, claimed that farmer involvement was low. Farmers' program knowledge, how frequently they participate in extension activities, and how cosmopolitan they are all affect their participation in the CFBD program. Farmers' involvement and CFBD program performance were significantly correlated.

The implementation of the CFBD program in the regions is stated in the general program guidelines of the CFBD and then implemented by the regional government and local communities. To meet the goals of the CFBD program, mentoring, training, coaching, monitoring, and assessment are essential. In addition, when viewed objectively, the CFBD Program aims to empower rural farmers and livestock breeders by cultivating an entrepreneurial spirit to pioneer businesses to improve their welfare. Thus, the goal can be achieved easily when the process goes well.

4 Conclusions and recommendations

Several conclusions can be drawn based on the results of the discussion in the previous chapters. First, the effectiveness of the CFBD on farms in Susukan Village is classified as effective. This can be seen in the indicators, including opportunities to work in the agricultural sector, especially in subsectors that are increasingly open to farming in Susukan Village, where farmers' incomes are increasing. Second, the factor analysis results show that the process, output, and input variables contribute the most to the CFBD program's effectiveness.

One of the shortcomings of the program is the accuracy of the number or amount of assistance. Therefore, the promotion of assistance could fulfil this need. Apart from that, evaluations must also be optimised by the group or managers. The involvement of academicians or NGOs can be used to evaluate the program.

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