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Correlation Between Farmer Characteristics and the Impact of the BUN (*Bertani Untuk Negeri*) Program in Bulili Village

Adrian Pranata Sitepu[1,*)], Muhammad Iqbal Nurulhaq[1)], Tri Budiarto[1)]

[1] Production Technology and Agricultural Community Development Study Program College of Vocational Studies, IPB University, Cilibende Campus, Jl. Kumbang No. 14, Bogor City, West Java, Indonesia, 16128
*Coresspondence Author: adrianpranatasitepu@apps.ipb.ac.id

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ABSTRACT

Bertani Untuk Negeri (BUN) is an initiative program by the Edufarmers International Foundation aimed at developing the agricultural sector in Indonesia. The BUN program provides mentoring to farmers to accelerate behavioral changes and enhance productivity by adopting Good Agricultural Practices (GAP). GAP involves cultivation methods designed to improve the quantity and quality of sustainable agricultural production. Mentoring is conducted with cocoa farmers in Bulili Village, who exhibit poor care for their cocoa plants. Farmer characteristics are a key factor in the implementation of this mentoring, including age, formal education level, years of farming experience, and land area owned. The impact of mentoring is reflected in increased knowledge and adoption of GAP. The objective of this study is to determine the correlation between farmer characteristics and the impact of the Farming for the Nation program. The methodology used is quantitative with a correlation approach, specifically employing Spearman's rank correlation. The results indicate that the farmer characteristics that significantly affect the impact of mentoring are age, education, and years of farming experience.

INTRODUCTION

Bulili Village is one of Indonesia's cocoa production centers, located in Sigi Regency, Central Sulawesi Province. According to Statistics Indonesia (BPS) 2022, Central Sulawesi produced 130,848 tons of cocoa beans in 2022, approximately 20.11 percent of Indonesia's total production. Sigi Regency boasts cocoa as its primary commodity, with smallholder plantations covering 27,885 hectares, producing 19,356 tons in 2021 (Directorate General of Agriculture 2022). Plantation area in Central Sulawesi Province declined in 2021, reaching 277,650 hectares (BPS 2022). This decline in cocoa productivity is due to inadequate cocoa care. In case many factors can be decline cocoa productivity in example capacity of cocoa farmers. Capacity of cocoa farmers based on their characeristics itself to analyze palnt needs.

Farmers' access to Good Agricultural Practices (GAP) remains limited. According to Edufarmers (2023), "Bertani Untuk Negeri" is a mentoring program to increase farmers' capacity to implement GAP standards. The Ministry of Agriculture (2014) stated that the implementation of GAP aims to provide superior, high, and sustainable agricultural yields for farmers. According to Liandra (2015), characteristics are a key factor in farmer empowerment. Characteristics are a determining factor that hinders or supports changes in agricultural development. Individual characteristics impact individual performance, including age, gender, and the amount of experience an individual has. The purpose of this study was to determine the correlation between farmer characteristics and the impact of mentoring provided through the Bertani Untuk Negeri program.

RESEARCH METHODS

This research was conducted in Bulili Village, Nokilalaki District, Sigi Regency, Central Sulawesi. The research was conducted during an internship at the Edufarmers International Foundation from August to December. Based on the background, this study aimed to determine the relationship between farmer characteristics and the impact of mentoring. The research method used was quantitative with the Spearman rank correlation method. This study used purposive sampling with 60 assisted farmers participating in the BUN program mentoring in Bulili Village. Data collection used interviews, direct observation, questionnaires, and pretests and posttests. Spearman rank analysis used IBM SPSS Statistics 23.

RESULTS AND DISCUSSION

Farmer Characteristics

The research was conducted in Bulili Village, Nokilalaki District, Sigi Regency, Central Sulawesi. Respondents were 60 assisted farmers participating in the BUN program. The researchers described characteristics based on farmer age, formal education level, length of farming experience, and land area. The characteristics of the assisted farmers are shown in Table 1.

Table 1 Farmer Characteristics

Age	Number of Respondent	
	Number	Percentage (%)
<31 Years	5	8.3
31- 40 Years	11	18.3
41 – 50 Years	20	33.3
51 - 60 Years	17	28.3
>60 Years	7	11.7
Amount	60	100.0
Level of Education	Number of Respondent	
	Number	Percentage (%)
No School	13	21.7
Elementary	28	46.7
Junior High School	13	21.7
Senior High School	5	8.3
Collage	1	1.7
Amount	60	100.0
Long of Farming	Number of Respondent	
	Number	Percentage (%)
< 10 Years	6	10
10 - 20 Years	21	35
>20 Years	33	55
Amount	60	100

Land Area	Number of Respondent	
	Number	Percentage (%)
< 0,5 Ha	15	25
0,5 – 1 Ha	32	53
>1 Ha	13	22
Amount	60	100

According to Hasibuan and Nasution (2020), cocoa farmers are divided into five age groups: (1) highly productive, <31 years old; (2) productive age, 31-40 years old; (3) medium age, 41-50 years old; (4) unproductive age, 51-60 years old; and (5) very unproductive age, >60 years old. The highly productive age group of assisted farmers constituted 8.3%, and the very unproductive age group constituted 11.7%. Farmer's level of formal education influences their level of knowledge and insight in applying that knowledge. Based on the table, the majority of assisted farmers (28) have an elementary school education.

Years of farming experience are divided into three categories: new (less than 10 years), medium (10 to 20 years), and long (more than 20 years). The majority of assisted farmers have been in the long cocoa farming category. Thirty-three assisted farmers fall into the long cocoa farming category (>20 years). According to Elfadina et al. (2019), land plays a crucial role for farmers as a physical natural resource. Land area is categorized as small (<0.5 ha), medium (0.5 - 1 ha), and large (>1 ha). The majority of assisted farmers (32) have medium land area (0.5 ha - 1 ha).

Impact of Mentoring

The impact of the mentoring program in the Farming for the Nation program was increased knowledge and increased adoption of Good Agricultural Practices (GAP). Knowledge was measured using pre- and post-tests regarding cocoa cultivation techniques. Adoption rates were measured based on monitoring farmers' land.

Table 2 Impact of Mentoring

Impact of Mentoring	**Average(%)**	
	Baseline	Endline
Level of Knowledge	48,75	82,5
Level of Adoption	43,91	74,96

The table 2 shows an increase in farmers' knowledge of good cocoa cultivation techniques after the mentoring. The increase in farmers' knowledge of cocoa cultivation techniques after the mentoring was 82.5%. According to Budiarto et al. (2023), there was an

increase in knowledge after community empowerment activities. The table shows an increase in farmers' adoption of Good Agricultural Practices (GAP) after the mentoring, amounting to 74.96%. According to Budiarto et al. (2024), there were changes after the training activities, namely increased knowledge and increased community skills and capacities.

Correlation of Characteristics with Knowledge Level

Improving farmer knowledge is an evaluation in mentoring. Farmer characteristics are a factor in the acquisition of knowledge. The results of the correlation analysis of knowledge level with farmer characteristics are shown in Table 3.

Table 3 Correlation of Characteristics with Knowledge Level

Farmer Characteristic	Level of Knowledge	
	Correlation Coefficient	Signicant Value
Age	-0.471119	0.000145
Level of Education	0.322054	0.012094
Long of Farming	-0.322690	0.012
Land Area	0.002	0.987

In Table 3, regarding the correlation between farmer characteristics and knowledge level, the variable land area has no significant effect on knowledge level, with a value of 0.987, greater than α=0.05. This is consistent with research by Setiyowati et al. (2022), which states that larger land holdings do not necessarily increase farmer knowledge. Variables that have a significant relationship are age, education, and years of farming experience. The age variable, with a coefficient of 0.471, indicates a moderate relationship with a negative trend, meaning that higher age leads to lower knowledge, or vice versa.

The education variable has a low relationship with a positive trend, meaning that higher education leads to higher knowledge. According to Mandang and Laoh (2020), a farmer's level of formal education influences their level of knowledge and insight in applying that knowledge. The variable of years of farming has a weak, negative correlation, meaning that the longer the farming period, the lower the level of knowledge, and vice versa.

The fact at the research site is that the older and longer the farmer has been farming, the lower the level of knowledge they have acquired. In fact, the assisted farmers already have experience in training and mentoring. The majority of respondents have a low level of education, meaning that the knowledge gained through formal education is still insufficient, necessitating training and mentoring. Indicators of productive age, formal education, and cocoa farm size, as characteristics of cocoa farmers in dryland farming management, have a weak influence on competency levels (Rayyudin, 2010)

Correlation of Characteristics with Adoption Rate

The GAP adoption rate in behavioral change is an aspect of farmers' skills and attitudes in applying acquired knowledge. The results of the correlation analysis of adoption rate with farmer characteristics can be seen in Table 4.

Table 4 Correlation of Characteristics with Adoption Rate

Farmer Characteristic	Level of Adoption	
	Correlation Coefficient	Signicant Value
Age	-0.578015	0.000001
Level of Education	0.415773	0.000954
Long of Farming	-0.824654	$5.57x10^{-12}$
Land Area	0.022235	0.866086

In Table 4, the variable land area in the relationship between characteristics and adoption rate does not have a significant relationship because the significance value of 0.866 is greater than α=0.05. The land area owned is inherited from parents, not due to the success of their farming efforts. Farmers have equal opportunities to try innovations regardless of land area. Age, education, and years of farming experience have a significant relationship because the significance value is less than α=0.05. Age has a moderate relationship with farmer adoption. The direction of the relationship between age and adoption rate is negative, meaning that higher age leads to lower adoption rates, and vice versa.

Education has a positive relationship with adoption rate and also has a moderate relationship, meaning that higher education leads to higher adoption rates. The variable of years of farming experience has a negative and very strong relationship with adoption rates. This means that the longer the farming experience, the higher the adoption rate, and vice versa. In coclusion, older farmers tend to have a very conservative attitude towards technological innovation, while younger farmers have the opposite tendency.

In the study area, age and years of farming experience were among the factors determining adoption rates. Younger farmers with less experience tended to adopt more. The majority of respondent farmers were older and experienced in farming, so they had more considerations when implementing adoption, due to their extensive experience in mentoring and training. According to Agatha and Wulandari (2018), farmers with more experience were more selective in accepting new innovations and made more informed decisions. According to Rayuddin (2010), productive age has a very big influence in supporting cocoa

farming activities, because increasing age over time becomes an obstacle for farmers to develop their potential (competence) in managing their farming business well.

CONCLUSION

Based on the Spearman rank correlation, there is a correlation between knowledge level and knowledge level. Age has a moderate relationship with knowledge level. Education has a strong relationship with knowledge level. Years of farming have a low relationship with knowledge level. Farmer characteristics, age, education, and years of farming have a significant relationship with knowledge level. Land area has no significant relationship with knowledge level, with a low relationship with knowledge level.

Based on the Spearman rank correlation, there is a correlation between adoption level and adoption level. Age has a strong relationship with adoption level. Education has a moderate relationship with adoption level. Years of farming have a very strong relationship with adoption level. Farmer characteristics, age, education, and years of farming have a significant relationship with adoption level. Land area has no significant relationship with adoption level, with a very low relationship with adoption level.

REFERENCES

Agatha, M. K., & Wulandari, E. (2018). *Analisis Faktor-Faktor yang Mempengaruhi Produksi Kentang di Kelompok Tani Mitra Sawargi Desa Barusari Kecamatan Pasirwangi Kabupaten Garut*. *Jurnal Ilmiah Mahasiswa Agroinfo Galuh*, 4(3), 772–778.

[BPS] *Badan Pusat Statistik*. 2022. *Statistik Kakao Indonesia* 2022. [accessed 2023 Des 23]. Tersedia pada: https://www.bps.go.id.

Budiarto, T., Ayun, L., & Nurulhaq, M. I. (2023). *Pemberdayaan Petani pada Pengolahan Pascapanen Kopi Arabika Proses Full Wash (Coffea arabica* L.*) di Desa Kalisat Kidul, Kecamatan Kalibening, Kabupaten Banjarnegara*. *Jurnal Resolusi Konflik, CSR dan Pemberdayaan (CARE)*, 8(1), 11-20.

Budiarto, T., Fitriani, S., Aditama, G. S., Fajarwati, A. B., Sabrina, A., Sulaeman, R., ... dan Dewi, R. K. (2024). *Pemberdayaan Perempuan Dalam Ketahanan Pangan Pada Masa Resiliensi di Kelurahan Katulampa Bogor. Martabe: Jurnal Pengabdian Kepada Masyarakat*, 7(1), 271-277.

Directorate General of Agriculture. 2022. *Statistik Perkebunan Unggulan Indonesia 2020-2022 Kakao*. Jakarta (ID): Ministry of Agriculture.

Elfadina, E. A., Rasmikayati, E., & Saefudin, B. R. (2019). *Analisis luas dan status penguasaan lahan petani mangga dikaitkan dengan perilaku agribisnisnya di Kecamatan Cikedung Kabupaten Indramayu. Jurnal Ilmiah Mahasiswa Agroinfo Galuh*, 6(1), 69-79. https://doi.org/10.25157/jimag.v6i1.1376

Hasibuan, N. H., dan Nasution, F. (2020). *Motivasi petani dalam penerapan pemupukan tanaman kakao (Theobroma cacao* L.*) di Kecamatan Biru-Biru Kabupaten Deli Serdang. Agrica Ekstensia*, 14(2), 126-136.

Liandra DT. 2015. *Tingkat Partisipasi Petani Dalam Program Pengembangan Usaha Agribisnis Perdesaan Di Desa Sidosari Kabupaten Lampung Selatan* [*skripsi*]. Bogor (ID): IPB University.

Mandang, M., Sondakh, M. F. L., & Laoh, O. E. H. (2020). *Karakteristik Petani Berlahan Sempit Di Desa Tolok Kecamatan Tompaso. Agri-Sosioekonomi*, https://doi.org/10.35791/agrsosek.16.1.2020.27131

Minister of Agriculture Regulation Number 48/Permentan/OT.140/4/2014 concerning Good Agriculture Practices on Cocoa. Jakarta: Ministry of Agriculture

Rayuddin (2010). *Pengembangan Kompetensi Agribisnis Petani Kakao Di Kabupaten Konawe Provinsi Sulawesi Tenggara* [*Disertasi*]. Bogor (ID): IPB University

Setiyowati, T., Fatchiya, A., & Amanah, S. (2022). *Pengaruh Karakteristik Petani terhadap Pengetahuan Inovasi Budidaya Cengkeh di Kabupaten Halmahera Timur. Jurnal Penyuluhan*, 18(02), 208-218. https://doi.org/10.25015/18202239038