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EDUCATION LEVEL, INFRASTRUCTURE, AND CAPACITY BUILDING ON THE PERFORMANCE OF AGRICULTURAL EXTENDERS AT THE FOOD SECURITY AND AGRICULTURAL SERVICES

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Abstract

Purpose: To determine the effect of education level, infrastructure and capacity building on the performance of agricultural extension workers at the Food and Agriculture Security Service.

Research Methodology: This type of research is a causal associative research using a quantitative approach with the survey method. The population in this study were 256 agricultural extension workers from the Department of Food Security and Agriculture. The technique used in sampling in this study is by proportionate stratified random sampling using the Slovin formula as many as 72 people.

Results: The magnitude of the influence of the level of education on the performance of agricultural instructors is 57.7%, while the remaining 42.3% is influenced by other factors. The magnitude of the influence of infrastructure on the performance of agricultural instructors is 79.4%, the remaining 20.6% is influenced by other factors. The magnitude of the effect of Capacity Building on the Performance of Agricultural Extension Officers is only 73.7% while the remaining 26.3% is influenced by other factors. The magnitude of the positive influence of the level of education, infrastructure, capacity building on the performance of agricultural instructors is 83.4% while the remaining 16.6% is influenced by other factors.

Limitations: The variables used are limited to Organizational culture, Organizational Commitment, Work Discipline, Employee Performance.

Contribution: The development of science, especially in the field of extension and becomes the starting point for more in-depth research on the performance of agricultural extension workers. It is hoped that this can be taken into consideration for the institutional extension workers and can assist in evaluating the performance of agricultural extension workers. The results of this study can be used as reference material for further research in more depth.

Keywords: *Organizational Culture, Organizational Commitment, Work Discipline, Employee Performance*

1. INTRODUCTION

Human resources are a very decisive factor in driving organizational activities. Human resources are the main assets of the organization that contribute to the achievement of organizational goals. The success of the organization is largely determined by the utilization of human resources, where employees play an active role in setting plans, systems, processes and goals to be achieved. According to Nawawi (2016) the definition of HR is: "Human resources are humans who work within an organization (also called personnel, labor, employees or employees). Human resources are human potential as the driving force of the organization in realizing its existence.

Human resources must always be considered, maintained, maintained and developed by the organization. Several efforts made by an organization to improve employee performance are through the level of education, infrastructure and capacity.

Performance is the result of work in quality and quantity achieved by an employee in carrying out his duties in accordance with the responsibilities given. Performance is the result of work or work performance. However, actually performance has a broader meaning, not only the results of work but including the ongoing work process.

According to Rivai (2018); "Performance (work achievement) is the result of work in quality and quantity achieved by an employee in carrying out his duties in accordance with the responsibilities given to him". Rivai (2018) suggests that the aspects assessed in the performance appraisal can be grouped into: a) Technical ability; b) Conceptual ability; c) interpersonal relationship skills.

The performance of employees at the Kuningan Regency Food and Agriculture Security Service, especially Agricultural Extension officers, continues to be strived for improvement. Because with maximum employee performance will have an impact on the progress of the organization. The performance of agricultural extension workers functions in the success or decline of the organization because the performance of agricultural extension workers can improve the welfare of farmers who have become a program of the Food and Agriculture Security Service of Kuningan Regency. Extension workers who perform well can position themselves as motivators, educators, facilitators and dynamists who have an impact on changing farmers' behavior in farming and have an impact on the good reputation of the organization.

However, in reality the performance of agricultural extension workers encounters many obstacles, this is reflected in the lack of extension workers. This causes the workload of each extension worker to be quite large because the target area

The extension workers are quite extensive and the number of farmer groups assisted by the TBPP THL instructors is still faced with several limitations including: The lack of agricultural extension workers adds to the burden for the extension workers because the target area is quite large and the number of assisted farmer groups is quite large. "Data from the Food and Agriculture Security Service of Kuningan Regency in 2021. The number of target areas is 376 villages, while the Extension Officers are only 256 people". (Profile of the Department of Food and Agriculture Security of Kuningan Regency: 2021)

The performance of the instructor can increase if it is supported by the level of education. Education is the basic capital for everyone to be able to advance or build their country so that it becomes advanced. According to Tirtarahardja (2016): "Education is a conscious effort to prepare students to play an active and positive role in their lives now and in the future". According to Tirtarahardja (2016) education is carried out through the following channels: formal education, informal education and non-formal education.

As one solution to improve the performance of agricultural instructors, the Kuningan Regency Government through the Agricultural Extension Center (BPP) seeks to provide training by participating in information technology (IT) training and socialization of agricultural data and information management by the Indonesian Ministry of Agriculture at BPP Ciawigebang for two days, 24-24 July 25, 2020. (Dedi Nursyams@Republika.Co.Id, Kuningan:2020).

Previous research by Refiswal (2018) concluded: "Formal education and work experience have a positive effect on the performance of extension workers". From the explanation above, performance is influenced by Education Level. The level of education in this case can be used as a measure of the quality of the workforce.

In fact, the level of education of the Agricultural Extension Service of the Food and Agriculture Security Office of Kuningan Regency is still lacking and even lacks motivation. Motivation is a condition that moves or directs a person to carry out a certain action. The success of a person's motivation is strongly influenced by the resources they have (Abdurrahmat, 2016). education level of agricultural instructors at the Food Security and Agriculture Office of Kuningan Regency High school graduates are 145 people (56.64%), De graduates are 26 people (10.16%), S1 graduates are 82 people (32.02%) and Masters are as many as 3 people (1.17%).

Education and Training for Agricultural Extension Officers in Kuningan Regency in 2021 from 256 personnel, who have attended Basic Extension Training as many as 93 people who have not attended as many as 163 people. There are 183 people who have participated in the Competency Test Training and 73 people who have not participated. There are 69 people who have attended the Extension Methodology Training and 187 people who have not attended. There were 120 people who had participated in the Kostratani BPP Training, and 136 people had not. Those who have attended the Agribusiness Entrepreneurship Training are 98 people who have not attended as many as 158 people. 135 people who have followed the Organic Fertilizer Manufacturing Technology Guidance, 121 people who have not participated.

Lack of motivation in improving education because it is still a freelance daily worker status (THL) is not immediately appointed as a civil servant. THL extension center in Kuningan reached 132 people. In West Java there are 7,100 people. As for the whole of Indonesia reached 21,000 people. But the facts on the ground, it is spearheading. The quality of work of THL extension workers is the same as that of Civil Servants (PNS). The THL instructor also has a target area. In fact, 70 percent of the extension workers in the field spread over 15 BP3Ks have THL TBPP Central status. (radarcirebon.com: August 18, 2021).

From this data, it is known that 16 UPTD offices are in good condition. Communication Equipment/Hand Phone from 256 units 249 in Good condition. Transportation equipment of 146 units, 45 in damaged condition and 101 in good condition. Field Work Wear from 256 units, 249 in good condition. IT equipment from 16 UPTD 4 in damaged condition and 12 in good condition. Starterkit / Soil NPK Element Testing Equipment from 16 UPTD in Good condition. Infocus of 16 UPTD 5 in damaged condition and 11 in good condition.

The success of agricultural extension programs is not only influenced by education and infrastructure, but also by the capacity of extension workers in carrying out their duties. The low capacity of extension workers will have an impact on extension activities, especially the main actors and business actors as users of extension services (Listiana et al., 2018).

Individual capacity building includes learning efforts both from the realm of knowledge, attitudes or critical awareness and skills. (Mubarak, 2021). Furthermore, McGinty in Mubarak (2021) mentions that one of the elements in capacity building is: "Building knowledge, including improving skills, facilitating research and development, and learning assistance".

The importance of improving the performance of agricultural extension workers as facilitators of the learning process for farmers and being a motivator for farmers to continue to produce agricultural products. Previous research on the effect of capacity on performance, by Jafri

(2018) resulted in the conclusion: "Factors of the capacity of agricultural instructors affect the performance of agricultural instructors".

The weak capacity of agricultural extension workers at the Kuningan Regency Food and Agriculture Security Service is indicated by: 1). Less able to build a network. 2) Lack of respect for the existing community. 3) Lack of information support for the development of work activities (Pre-research interview with the Head of the Food and Agriculture Security Agency of Kuningan Regency, July 2021). Farmers who are at the forefront of agriculture in producing agricultural products in the midst of a pandemic are still able to keep themselves and their families healthy and protected from the Covid-19 pandemic. (Umam: 2021).

For this reason, agricultural extension workers in the current 4.0 era must increase their capacity so that they can become a source of inspiration for advanced, independent and modern farmers with quality, easy, precise and inexpensive extension services.

2. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Agricultural Extension Performance

Understanding Performance according to Wibowo (2017): "It is the implementation of the plans that have been prepared". Sulistiyani & Rosidah (2013) stated: "A person's performance is a combination of abilities, efforts and opportunities that can be assessed from the results of their work". According to Sedarmayanti (2017): "Performance can also be interpreted as work performance, work implementation, work achievement, or work results / work performance / work appearance". According to Rivai (2018); "Performance (work achievement) is the result of work in quality and quantity achieved by an employee in carrying out his duties in accordance with the responsibilities given to him".

The definition of an extension worker in the Big Indonesian Dictionary (KBBI) (2021): “The meaning of the word extensionist is a giver of information. Another meaning of extension is a guide". Agricultural instructor is a person whose job is to provide direction and encouragement to farmers to be more sensitive and able to accept and use technology to increase welfare.

According to SK Menpan Number: 19/KEP/MK WASPAN/5/1999:

The agricultural extensionist position consists of skilled agricultural instructors and expert agricultural instructors. A skilled agricultural instructor is a functional agricultural instructor with skills that in carrying out his work uses certain work procedures and techniques, while an expert agricultural instructor is a functional agricultural instructor with expertise in carrying out his work based on certain scientific disciplines, methodologies and analytical techniques.

It is concluded that agricultural extension workers are people who provide direction, guidance, as well as counseling in the field of agriculture by taking an approach in order to know and understand the abilities of individuals and groups.

Infrastructure

Facilities and infrastructure are things that can facilitate and expedite the implementation of a business that can be in the form of objects. Facilities are all physical objects that can be visualized by the eye or palpable by the five senses and can be easily recognized as part of a building or the building itself (Permenkes RI, 2008). Facilities are all types of equipment, work equipment and facilities that function as main or auxiliary tools in carrying out work, and also in the context of interests related to work organizations.

According to Anindita (2021), there are several scopes of facilities and infrastructure, consisting of: Office supplies, office machines. Facilities are different from infrastructure, according to Anindita (2021): “They can be distinguished based on several perspectives. It can be seen from

its form, ownership, function and based on procurement financing. And the following is a discussion of each one.

Capacity Building

Capacity building is a process to do something, or a series of movements. Multi-level change in individuals, groups, organizations and systems in order to strengthen the adaptability of individuals and organizations.

Aiba (2015): "The word Capacity is often used when we talk about improving someone's ability, when we get certification, attend training or attend education".

Meanwhile, according to Aiba (2015): "(Capacity Development) is an approach that is currently widely used in community development".

Capacity building is a key driver for creating impact. All activities aimed at increasing the skills, knowledge, and networking of individuals or groups are capacity building. Capacity building activities can occur at any stage of the initiative, in planning and research, filmmaking and production, participation, outreach and distribution, and evaluation.

So based on the description above, Education, Facilities and Infrastructure, Capacity Building as an independent variable affects performance as the dependent variable. So to facilitate the research process, it is illustrated in a framework chart which can be seen in the following figure:

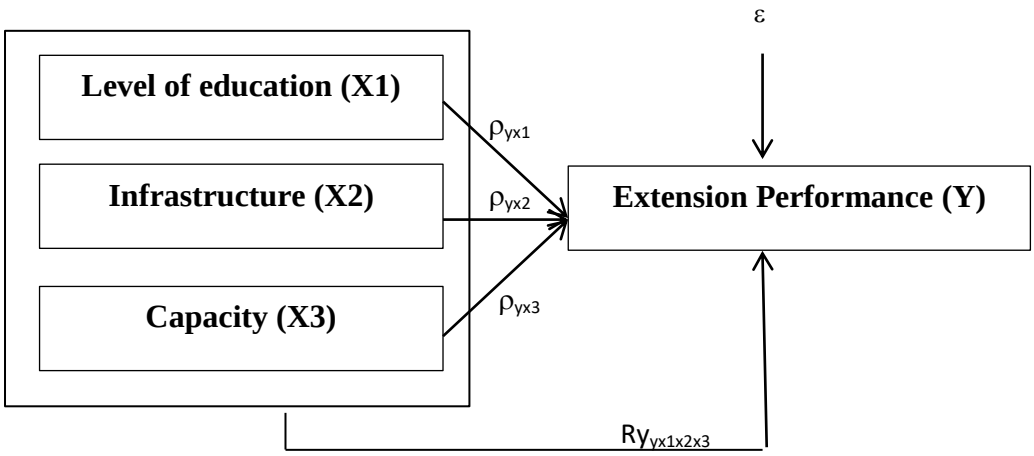

Figure 1. Research Framework

Based on the above framework, the following hypotheses can be proposed in this study:

H1 = It is suspected that there is a positive and significant influence on the performance of agricultural extension workers at the Food and Agriculture Security Service

H2 = It is suspected that there is a positive and significant influence of infrastructure on the performance of agricultural extension workers at the Department of Food and Agriculture Security

H3 = It is suspected that there is a positive and significant effect of Capacity Building on the Performance of the Extension Service of the Food and Agriculture Security Service

H4 = It is suspected that there is a positive and significant influence on the level of education, infrastructure and capacity building simultaneously on the performance of agricultural extension workers at the Department of Food Security and Agriculture

3. RESEARCH METHODOLOGY

This type of research is a causal associative research using a quantitative approach with the survey method. The population in this study were 256 agricultural extension workers from the Department of Food Security and Agriculture. The technique used in sampling in this study is by proportionate stratified random sampling using the Slovin formula as many as 72 people. Measurement using likert scale. Data Analysis Techniques with Data Instrument Tests including Validity and Validity Tests, Reliability Tests. Furthermore, Classical Assumption Test with Data Normality Test with Multicollinearity, Heteroscedasticity Test. Multiple Linear Regression Analysis and Hypothesis Test with T test, determinant test and f test for simultaneous test

4. RESULTS AND DISCUSSIONS

1. Test Instrument Data

a. Validity test

Analysis of the validity of the test using Pearson bivariate (Pearson Moment Product Correlation) in this study, by correlating each item score with a total score.

Table 1. The results of the calculation of the validity of all instrument items variable level of education, infrastructure, capacity building and performance

Code proble	r Count	r Table	Description
TP_1	.746**	0.2335	Valid
TP_2	.774**	0.2335	Valid
TP_3	.769**	0.2335	Valid
TP_4	.714**	0.2335	Valid
TP_5	.659**	0.2335	Valid
TP_6	.759**	0.2335	Valid
TP_7	.330**	0.2335	Valid
TP_8	.759**	0.2335	Valid
SP_1	.684**	0.2335	Valid
SP_2	.780**	0.2335	Valid
SP_3	.750**	0.2335	Valid
SP_4	.748**	0.2335	Valid
SP_5	.756**	0.2335	Valid
SP_6	.651**	0.2335	Valid
SP_7	.731**	0.2335	Valid
SP_8	.731**	0.2335	Valid
PK_1	.797**	0.2335	Valid
PK_2	.812**	0.2335	Valid
PK_3	.509**	0.2335	Valid

PK_4	.431**	0.2335	Valid
PK_5	.815**	0.2335	Valid
PK_6	.809**	0.2335	Valid
PK_7	.724**	0.2335	Valid
PK_8	.735**	0.2335	Valid
KN_1	.795**	0.2335	Valid
KN_2	.636**	0.2335	Valid
KN_3	.553**	0.2335	Valid
KN_4	.696**	0.2335	Valid
KN_5	.721**	0.2335	Valid
KN_6	.781**	0.2335	Valid
KN_7	.795**	0.2335	Valid
KN_8	.636**	0.2335	Valid

Table 2. Reliability calculation results

Variable	Reliability	Description	Category
Level of education	0,833	Reliable	High
Infrastructure	0,869	Reliable	High
Capacity Upgrade	0,859	Reliable	High
Agricultural Extension Performance	0,846	Reliable	High

2. Classical Assumption Test

a. Data Normality Test

Table 3. the results of the normality test

One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		72
Normal Parameters[a,b]	Mean	.0000000
	Std. Deviation	1.63810612
Most Extreme Differences	Absolute	.068
	Positive	.058
	Negative	-.068
Test Statistic		.068
Asymp. Sig. (2-tailed)		.200[c,d]

a. Test distribution is Normal.
b. Calculated from data.
c. Lilliefors Significance Correction.
d. This is a lower bound of the true significance.

From the results of the table above, it shows that the results of the normality test on this research variable are said to have residual values that are normally distributed because the significance value is 0.200 > 0.05. Thus, the results of the normality test show that the data for the three variables are normally distributed.

b. Multicollinearity Test

The value commonly used to indicate the presence of multicollinearity is the tolerance value > 0.10 or the same as the VIF value < 10 (Ghozali Imam, 2013: 105).

Table 4. Multicollinearity Test Results

Model		Sig.	Collinearity Statistics Tolerance	VIF
1	(Constant)	.744		
	Level of education	.032	.367	2.724
	Infrastructure	.001	.156	6.407
	Capacity Building	.001	.240	4.171

From the results of the data in the table above, it is known that each variable has a VIF value < 10 and a tolerance value > 0.10. This means that there is no multicollinearity problem in the regression model, so this variable meets the requirements of regression analysis.

c. Heteroscedasticity Test

Table 5. Heteroscedasticity Test Results

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.311	1.254		1.045	.300
	Level of education	.105	.054	.375	1.950	.055
	Infrastructure	-.063	.071	-.265	-.899	.372
	Capacity	-.043	.062	-.164	-.687	.494

a. Dependent Variable: ab_res

3. Multiple Linear Regression Analysis

The data used are usually on an interval or ratio scale. Multiple linear regression equation as follows:

$$Y = a + b_1X_1 + b_2X_2 + \ldots + b_nX_n + E \quad \ldots\ldots(1)$$

Table 5. Multiple Linear Regression Test Results

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		

1	(Constant)	.684	2.084		.328	.744
	Level of education	.196	.090	.178	2.186	.032
	Infrastructure	.404	.117	.430	3.444	.001
	Capacity	.378	.104	.368	3.650	.001

a. Dependent Variable: Kinerja

To find out the regression equation can be seen from table 5 above. Based on the table shows the multiple linear regression equation:

$$\boldsymbol{Y = 0,684 + 0196x1 + 0,404x2 + 0,378x3 + \varepsilon}$$

The equation states that each addition of X1, X2 and X3 by 1 will increase Y by 0.196 and 0.404 and 0.378, meaning that each increase in Education Level, Infrastructure and Capacity Increase by 1, will increase the Performance of Agricultural Instructors by 0.196 and 0.404 and 0.378.

4. Hypothesis test

a. t test

1) The Effect of Education Level (X1) on Agricultural Instructor Performance (Y)

Table 6. Hypothesis Testing (t)

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	.684	2.084		.328	.744
	Level of education	.196	.090	.178	2.186	.032
	Infrastructure	.404	.117	.430	3.444	.001
	Capacity_Building	.378	.104	.368	3.650	.001

a. Dependent Variable: Kinerja

The magnitude of the influence of the level of education on the performance of agricultural instructors is 57.7%, while the remaining 42.3% is influenced by other factors. The magnitude of the influence of infrastructure on the performance of agricultural instructors is 79.4%, the remaining 20.6% is influenced by other factors. The magnitude of the effect of Capacity Building on the Performance of Agricultural Extension Officers is only 73.7% while the remaining 26.3% is influenced by other factors. The magnitude of the positive influence of the level of education, infrastructure, capacity building on the performance of agricultural instructors is 83.4% while the remaining 16.6% is influenced by other factors.

b. F Uji test

The Influence of Education Level, Infrastructure, Capacity Building on Agricultural Extension Performance

Furthermore, to determine the joint effect of Education Level (X1) Infrastructure (X2) and Capacity Building (X3) on Agricultural Instructor Performance (Y), tested by F test, the test results can be seen in the table below:

Table 7. F . Test Results

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	960.132	3	320.044	114.229	.000[b]
	Residual	190.521	68	2.802		
	Total	1150.653	71			

a. Dependent Variable: Extension Performance

b. Predictors: (Constant), Level of education, Infrastructure, Capacity

Based on the table of the results of the ANOVA test or F test, Fcount is 114.229 with a significance level of 0.000. This means that the variable level of education (X1) Infrastructure (X2) and Capacity Building (X3) have a joint (simultaneous) effect on the performance of agricultural instructors (Y). The results of the F test have a p-value of 0.000 <0.05 which means it is significant, while fcount is 128.865 > from t table 2.738 which means it is significant.

5. Coefficient of Determination

Table 8. Coefficient of determination

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.913[a]	.834	.827	1.674

a. Predictors: (Constant), Level of education, Infrastructure, Capacity

From the table above, it can be seen that R Square is 0.834, this means that 83.4% of Agricultural Extension Performance is influenced by Education Level, Infrastructure, Capacity Building, while the remaining 16.6% is influenced by other factors.

5. CONCLUSION

Organizations should motivate agricultural extension workers who have not attended formal education at the undergraduate level to implement them immediately. Organizations should provide good quality infrastructure to support work. Organizations should provide opportunities for agricultural extension workers to further develop themselves through training activities. The organization should motivate agricultural extension workers to continuously improve their performance.

Agricultural extension workers who have not had a bachelor's degree education should implement them immediately. Agricultural extension workers should be able to use the existing infrastructure so that the work can be realized effectively and efficiently. Agricultural extension workers should actively participate in training activities related to agricultural extension materials. Agricultural instructors must continue to improve their performance through the level of education, infrastructure and capacity building.

After processing and analyzing the data obtained from the answers to the questionnaire distributed to the respondents regarding the effect of Education Level, Infrastructure, Capacity Building on the Performance of Agricultural Extension Officers and obtained the following description:

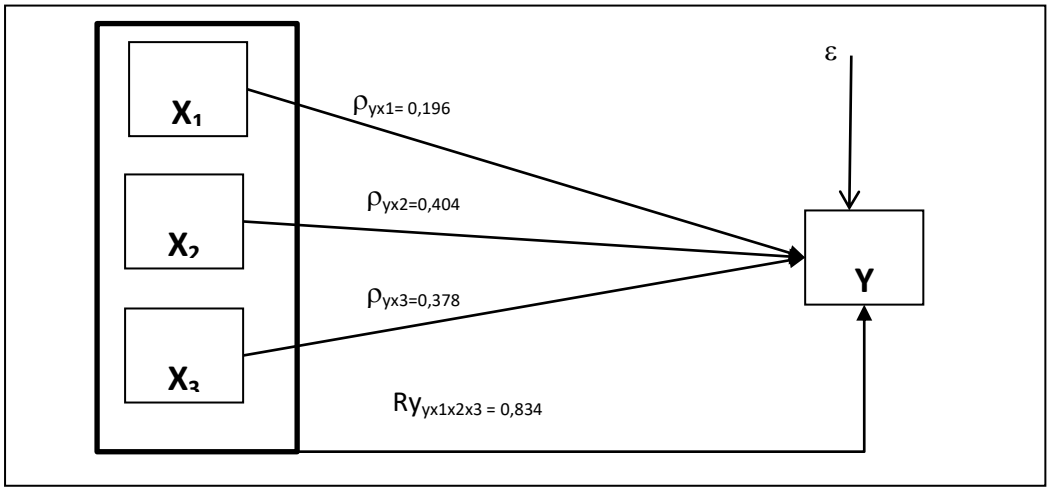

Figure 2. Diagram of the Effect of Research Variables

LIMITATION AND STUDY FORWARD

The variables used are limited to Organizational culture, Organizational Commitment, Work Discipline, Employee Performance. Future research can add research variables related to customer engagement and service.

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