

# Influence of Work Motivation and Use of Information Technology on Sleman Yogyakarta Farmers Performance

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**Keyword:** Work Motivation, Information Technology Utilization, Farmers' Performance

**Abstract:** Food security programs based on food independence and sovereignty supported by integrated food availability, distribution, and consumption subsystems are one of the government's efforts to strengthen national food security. Farmers, as the main actors in supplying food supplies, are interesting subjects to study. This study aims to reconfirm the influence between work motivation and the use of information technology on individual performance based on previous research with different research objects. The population in this study were all farmers registered as members of farmer groups in each region. The sampling technique is the accidental sampling method and obtained 102 farmer respondents who filled out the questionnaire. The results state that this study supports previous findings, which state that 1) work motivation has a positive influence on farmers' performance, 2) the use of information technology has a positive effect on farmers' performance. By building self-motivation through rewards that are expected to be adjusted to personal goals so that the performance of individuals will increase due to the motivation for personal goals that they want to obtain. While the use of technology increases individual performance by looking at the more dominant frequency of using information technology compared to other technology utilization indicators.

## 1 INTRODUCTION

In efforts to strengthen food security, the Ministry of Agriculture will focus on increasing the production of strategic staple foods for rice, corn, soybeans, sugar (sugar cane) and beef buffalo, and other agricultural commodities, on meeting domestic food needs. The stabilization of food security must be based on food independence and sovereignty supported by integrated food availability, distribution, and consumption subsystems (Renstra BKP, 2019). The agricultural sector is the main sector in meeting human needs, both domestically and abroad. In Indonesia, the role of agriculture is not only a fulfillment of consumer needs but also as a contributor to the country's economic income because Indonesia is an agricultural country whose main economic factor in agriculture. Based on data from the Ministry of Agriculture (Ministry of Agriculture), in the past three years, rice production has continued to increase, but in terms of productivity, it has declined. While corn production rose due to increased harvested area, while the level of productivity fell.

The decline in rice productivity in the last three years can be seen in table 1:

Table 1. Decreased rice productivity

Year of	Productivity	Decrease in
2015	5.34 tons per hectare	
2016	5.24 tons per hectare	10 tons per hectare
2018	5.16 tons per hectare	8 tons per hectare

The food security program is directed at the independence of the community/farmers based on local resources so that they are very concerned about the level of welfare of farmers (Darwanto, 2005). The agriculture sector is still the mainstay in Sleman Regency; it can be seen from the high.

The number of people in this region who are still dependent on agriculture for their livelihoods, besides the agricultural sector, is also the biggest contributor to the Gross Regional Domestic Product (PDRB) in Sleman. However, in its implementation, several problems exist so that the food security program does not run optimally. The problem was stated in the BKP Restra (2019) on the fourth point. Namely, food

agribusiness that has not been optimal has greatly affected the level of welfare of farmers. These problems are closely related to the quality and quantity of farmers' yields. Product quality and quantity is an indicator of individual performance measurement (Moehariono, 2009)

Individual performance of certain behaviors is mainly determined by the intention of someone who has a certain motivation to perform the behavior, individual attitudes and the influence of the social environment on the desired behavior must be positive in order for changes to occur expected, this is supported by the theory of hope put forward by Victor Vroom (Robbins & Judge, 2008). Behavior change is very influential on the extent of individual performance so that each individual is required to be able to implement a culture of high- performance behavior (Armstrong, 2006). Changes in behavior because technology has resulted in higher quality individual performance in an organization. These findings have been highlighted by (Abusharbeh & Nazzal, 2018; Bao & Nizam, 2015; Andriana, 2015; Wahyudi et al., 2018) which states that work motivation has an influence on individual performance, other findings put forward by (Igbaria & Tan, 1997; Hasiholan, 2005, Lindawati & Salamah, 2012) also stated that the use of information technology has a positive influence on individual performance.

Therefore, this study aims to reconfirm the influence between work motivation and the use of information technology on individual performance based on previous research with different research objects, namely farmers in Sleman, Yogyakarta. This is because changes in farmer's behavior are one of the factors that cause problems that hamper the pace of food security programs.

## 2 LITERATURE REVIEW

### 2.1 Individual Performance

According to Miner (1990), performance is how a person is expected to function and behave in accordance with the tasks assigned to him. Every expectation of how one must behave in carrying out the task means showing a role in the organization. An organization, both government and private organizations in achieving the goals set, must be through means in the form of an organization that is driven by a group of people who play an active role (actors) to achieve the goals of the institution or organization concerned (Prawirosentono, 1999).

Performance (performance) is an achievement of certain job requirements that ultimately can be reflected in the output produced. Performance is one of the measurement tools for achieving organizational goals. Performance can be seen as 'thing is done.' Hasibuan (2002) also defines performance (work performance) as a result of work in quality and quantity achieved by an employee in carrying out their duties in accordance with the responsibilities given to him (Moehariono, 2009).

### 2.2 Work

Motivation, according to Robbins & Judge (2008), is a process that explains the intensity, direction, and perseverance of an individual to achieve his goals. Motivation, according to Hasibuan (2009), is the provision of driving data that creates the excitement of one's work, so that they want to cooperate, work effectively and be integrated with all their efforts to achieve satisfaction. Meanwhile, according to Mathis & Jackson (2002) revealed that motivation is a desire in someone who causes the person to act. Robbins & Judge (2008) said that the theory of the process of motivation tries to answer how to strengthen, direct, maintain, and stop individual behavior. One theory of the process is the theory of hope. The theory of hope was put forward by Victor Vroom, who bases his theory on three important concepts, namely: 1) Hope (expectancy) is an opportunity given to occur due to behavior. 2) Value (valence) is the result of certain behaviors that have a certain value or dignity (power or value motivating) for each particular individual. 3) Linkage (instrumentality) is the perception of the individual that the results of the first level will be related to the results of the second level.

H1: Work motivation has a positive influence on the performance of farmers.

### 2.3 Utilization of Information Technology

The rapid development of information systems and information technology makes it a competitive weapon that must be owned by companies in Winning the competition. The application of information systems and information technology can be said to be successful if it can improve employee performance, which in turn can improve company performance. With the implementation of information systems and information technology, companies need to prepare human resources (HR) (Lindawati & Salamah, 2012). Thompson et al. (1991) define the use of technology as the benefits expected by users of information

systems in carrying out their duties where the measurement is based on the intensity of utilization, frequency of utilization, and the number of applications or software used. Technology is seen as a tool used by individuals in carrying out their duties. Technology is a tool, technique, or way that can help humans in doing work so that work becomes lighter, faster, better, or more results (Haryani, 2001). In relation to the utilization of information technology, there are two basic theories, namely Theory of Reasoned Action (TRA) developed by Fishbein & Ajzen (1975) and Theory of Attitudes and Behavior developed by Triandis (1971). Theory of attitudes and behavior developed by Triandis (1971) states that behavior is determined by what people want to do (attitude), what they think they will do (social rules), what they are used to do (habits) and with the consequences of the behavior they expect. According to Lucas & Spitzer in Jin (2003), information systems and information technology can be used effectively one of them by contributing to performance.

H2: The use of information technology has a positive influence on the performance of farmers

### 3 RESEARCH METHODS

The object in this study is farmers in Sleman, Yogyakarta. The population of this research is all farmers who are members of farmer groups in each region in one Sleman district. The sampling technique is the accidental sampling method; this technique is implemented by inviting farmers from several groups in Sleman at a Forum Group Discussion, farmers who come to the event will be used as research samples. This technique is carried out to facilitate research activities because this research is still under development. The total number of farmers who attended the event was 106 farmers, so the sample in this study was 102, so that the number met the criteria for the sample in the SEM study of at least 100 people (Ghozali, 2006). Data collection techniques using a Likert scale questionnaire with intervals 1-4, 1, namely strongly disagree, 2 disagree, 3 agree, and 4 strongly agree (Widiyoko, 2016). The statistical technique used is Partial Least Squares to show the results of the validity and reliability test and hypothesis testing. The questionnaire was sourced from each variable as follows:

- a. Work motivation, there are 3 indicators of work motivation measurement, namely the business relationship with performance, business relationship with rewards, and relationship of

rewards with personal goals (Lamborn, 1991; Robbins & Judge, 2008).

- b. Utilization of Technology, there are 3 indicators that have been adopted by Thompson et al. (1991; 1994), namely intensity, frequency, and diversity.
- c. Individual performance, there are 2 indicators of individual measurement, namely the quantity and quality of products (Moeherson, 2009).

## 4 RESULTS

### 4.1 Characteristics of Respondents

The following characteristics of respondents by age, sex, marital status, some dependents, length of time as farmers and education can be seen in table 2:

Table 2. Respondent

Characteristics	Respondents	Frequency	Percentage
Age	15-30	6	6.12
	30-40	24	24.48
	> 40	72	73.44
Gender	Men	81	82.62
	Women	21	21.42
Marital Status	Married	94	95.88
	Not Married	5	5.1
	Not Married	3	3.06
Number of Dependents	0	10	10.2
	1	11	11.22
	2	20	20.4
	> 3	61	62.22
Farming Time	> 10	25	25.5
	10 - 20	38	38.76
	20-30	19	19.38
	> 30	20	20.4
Education	SD	26	26.52
	SLTP	21	21.42
	SLTA	52	53.04
	Others	3	3.06

From the table above, it can be seen that the majority of respondents have an age of over 40 years of 73.44% of the total study respondents. This shows that the existing farmers are classified as old. In terms of gender, male respondents dominate 82.62% of the total respondents; this is natural and has become common because farming is a profession dominated by men. Many respondents also already have families, in the amount of 95.88% of the total respondents, and the majority have more than 3 children in the amount of 62.22. Experience in farming can be seen from the length of time he worked as a farmer, seen from table 4.1. The majority of respondents became farmers around 10- 20 years which amounted to 38.76% and the second position was occupied by respondents with long ten years of farming <10 years which amounted to 25.5% so that from this data it can be seen that the respondents were relatively short-lived as farmers. The level of education of farmers is dominated by upper secondary level schools, and its equivalent is 53.04%. This shows the level of farmers' education is quite good.

## 4.2 Test Instrument Research

### 4.2.1 Validity Test

To conduct the validity test in this study used 2 measurements, namely the Convergent Validity and Discriminant Validity tests. Based on the instrument testing that has been done, the convergent validity test results of each variable can be seen in Table 3, as follows:

Table 3. Convergent Validity Test Table

	Convergent Validity
X11 <- Motivation	0.816
X12 <- Motivation	0.835
X13 <- Motivation	0.768
X21 <- Use of IT	0.933
X22 <- Utilization of IT	0.916
X23 <- Utilization of IT	0.876
Y11 <- performance of Farmers	0.640
Y110 <- performance of Farmers	0.695
Y12 <- performance of Farmers	0.713
Y15 <- performance of Farmers	0.808
Y17 <- performance of Farmers	0.771
Y18 <- Farmer Performance	0.736
Y19 <- Farmer Performance	0.691

Based on table 3, the convergent validity value of each indicator has fulfilled the requirements that are above 0.7, 2 items in the farmer performance variable have values between 5-7 but are still maintained because they have a value of 0.5- 0.6, this is still accepted in research that is still under development (Chin, 1998). The following test results discriminant validity can be seen in Table 4:

Table 4. Cross Loading

	Work Motivation	Information Technology Utilization	Performance Farmers
X11	0.816	0.109	0.342
X12	0.835	0.245	0.364
X13	0.768	0.376	0.37
X21	0.3	0.933	0.34
X22	0.256	0.916	0.257
X23	0.273	0.876	0.274
Y11	0.219	0.016	0.64
Y11 0	0.221	0.396	0.695
Y12	0.182	0.173	0.713
Y15	0.492	0.303	0.808
Y17	0.37	0.045	0.771
Y18	0.269	0.173	0.736
Y19	0,339	0.342	0.691

Based on the cross-loading in Table 3.5 shows that each indicator is higher correlated with each construct is compared with other constructs, so it is said to have good discriminant validity.

### 4.2.2 Reliability Test

The test uses composite reliability values. The Rule of Tumb that is usually used to assess construct reliability is that the Composite Reliability value must be greater than 0.7 (Ghozali & Latan, 2013). The following results of the reliability testing in table 5:

Table 5. Reliability Test

	Cronbach's Alpha	Description
Farmer Performance	0.853	Reliable / Reliable
Work Motivation	0.731	Reliable / Reliable
Utilization of Information Technology	0.895	Reliable / Reliable

### 4.2.3 Variables Research Hypothesis Test Hypothesis

Testing in this study uses the Partial Least Square (PLS) statistical test with SMART PLS 3.0 software

to analyze the relationship between the data needed and the relationship between exogenous variables and endogenous variables. The following hypotheses test results can be seen in table 6:

Table 6. Hypothesis Test Results

	Original Sample (O)	T Statistics (O / STDEV)	P values	Information
Work motivation -> Farmer Performance	0.382	3,894	0,0000	Significant
Use of information Technology -> Performance Farmers	0.207	2.225	0.027	Significant

From table 6, it can be seen that the relationship between work motivation and individual performance shows an estimated coefficient of 0.382, a calculated t value of 3,894, and a probability value of 0,000. Probability value indicates less than 0.05, so it can be concluded that

there is a significant effect between work motivation (X1) and Individual Performance (Y). Judging from the estimated coefficient values indicate that the direction of the relationship between work motivation and individual performance is positive; therefore, it can be concluded that hypothesis 1 that states the work motivation of farmers has a positive influence on farmer performance is proven. The relationship between the use of information technology on individual performance shows an estimated coefficient value of 0.207, a calculated value of t.225, and a probability value of 0.027. Probability value indicates less than 0.05, so it can be concluded that there is a significant influence between the use of information technology (X2) with Individual Performance (Y). Judging from the estimated coefficient values indicates that the direction of the relationship between the use of information technology with individual performance is positive; therefore, it can be concluded that hypothesis 2, which states the use of information technology, has a positive influence on the performance of farmers is proven.

## 5 DISCUSSION

From the results of hypothesis testing that has been done shows that the work motivation of farmers has a positive influence on the performance of farmers so that hypothesis 1 is accepted. These findings support the research conducted by (Abusharbeh & Nazzal, 2018; Bao & Nizam, 2015; Andriana, 2015; Wahyudi

et al., 2018). By referring to the theory of hope which assumes that humans will take action to achieve the goals they deem valuable and they see that what they do will help them achieve these goals, therefore with the expectations held by individuals, each individual strives to achieve or fulfill These expectations will later aim to improve individual performance (Suripto, 2015). The results also showed that farmers showed the highest motivation indicator is by building self-motivation through rewards that are expected and in accordance with personal goals so that the performance of individuals will increase due to the motivation for personal goals that have been wanted.

From the results of hypothesis testing that has been done shows that the use of information technology has a positive influence on the performance of farmers so that hypothesis 2 is accepted. These findings support the research conducted by (Igbaria & Tan, 1997; Hasiholan, 2005; Lindawati & Salamah, 2012). Basically, utilizing information technology can increase the speed, accuracy, and efficiency of exchanging large amounts of information so that the role of utilizing information technology is very important for improving individual performance (Igbaria & Tan, 1997). The results of this study also indicate that the use of technology increases individual performance by looking at the more dominant frequency of using information technology compared to other technology utilization indicators. This shows that the use of information technology means that farmers already have experiences that have a good impact on their performance so that farmers will continue to use information technology repeatedly.

## 6 CONCLUSION

Based on the results of the study as described in the previous chapter, two conclusions can be drawn; namely, first, work motivation has a positive influence on farmers' performance. It means that if the work motivation is high, the farmer's performance will also increase; on the contrary, if the work motivation is low, the farmer's performance will also decrease. The highest motivation indicator is to build self-motivation through the expected appreciation and in accordance with personal goals so that the individual's performance will increase due to the motivation of personal goals that you want to obtain. Second, the use of information technology has a positive influence on the performance of farmers. This means that if the use of information technology is high, then the performance of farmers will also increase; on the contrary, if the information technology is low, then the performance of farmers will also decrease. Utilization of technology increases individual performance by looking at the more dominant frequency of using information technology compared to other technology utilization indicators.

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