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# Analysis Of Farmers Knowledge Attitude And Skills Influence On Soybean Crops In Maros Regency

**Dewi Puspitasari**[1*]
[1]Universitas Batanghari Jambi, Indonesia
[1]dewi.puspita.sari@unm.ac.id

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***Corresponding Author**

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**ABSTRACT**

This study aims to determine the level of knowledge, attitudes, and skills of farmers regarding soybean crops in Tompobulu Village, Tompobulu District, Maros Regency. The population in this study was taken using a simple random sampling method from soybean farmers. The population of soybean farmers was 217 farmers, and 15% were taken as a sample, so the sample taken was 32 soybean farmers. Data analysis used was descriptive quantitative, the data obtained and collected were then analyzed based on predetermined methods and aimed to assess the level of knowledge, attitudes, and skills of farmers. The results showed that the level of knowledge of soybean farmers was in the moderate category, the level of attitude of soybean farmers was in the moderate category, and the level of skills of soybean farmers was in the moderate category. The level of knowledge of farmers regarding soybean plants in Tompobulu Village, Tompobulu District, Maros Regency is included in the moderate category with an average score of 60.5, which means that farmers already know enough about how to farm soybean plants. Irrigation is carried out in the morning and evening without making the soil too muddy or even dry with a score of 1.75 with an average score of 58.3 obtained moderate criteria, this is because there are some farmers who only rely on rain in irrigating their soybean plants.

## INTRODUCTION

Glicyne max (L.) Merril soybeans are the third main food commodity after rice and corn in Indonesia. The demand for soybeans for consumption, animal feed, and industrial raw materials continues to increase from year to year [1]. The nutritional content of soybeans consists of 34.90 grams of protein, 10.10 grams of fat, 227.00 mg of calcium, 585.00 mg of phosphorus, 8.00 mg of iron, 110.00 SI of vitamin A, 1.077 mg of vitamin B, 7.50 grams of water, and 331.00 calories [2] and [3]

Soybeans are a multipurpose crop, serving as a food source, animal feed, and even as a raw material for various manufacturing and processing industries. Consequently, demand for soybeans has increased significantly. Indonesia's demand for soybeans increases annually, in line with population growth and improvements in per capita income. However, because domestic production is insufficient to meet this demand, Indonesia must import soybeans annually [4] and [5].

The current soybean productivity achieved is 1.30 tons/ha or still around 50% of the potential yield of the recommended superior soybean varieties (2.00-3.50 tons/ha), in addition to that, the low level of soybean productivity in each plantation (0.50-1.50 tons/ha) is caused by differences in several factors including planting time, level of plant maintenance, availability of irrigation water and soil fertility [6] and [1].

Therefore, an additional supply of soybeans is needed, which must be imported because domestic production is not yet sufficient to meet this demand (Suryowati, 2013). Soybean cultivation areas are being expanded and productivity is being increased. To achieve this goal, a more in-depth understanding of soybean plants, especially soybean cultivation techniques, is required [7].

## LITERATURE REVIEW

The government's efforts to improve food agriculture can be seen from programs such as Special Efforts (Upsus) to increase food production focused on three main commodities: rice, corn, and soybeans (Pajale), Integrated Crop Management ( PTT) for lowland rice, which aims to increase crop productivity in terms of yield and quality through the application of location-specific technologies, and other programs. Rice, corn, and soybeans are unique strategic commodities in Indonesia. Soybeans play a vital role in the population's diet. Since ancient times, soybeans have been known as a source of vegetable protein for the Indonesian population [8] and [9].

However, the success of this program lies not only with the government but also with the farmers themselves. Farmers' success in managing their farms depends heavily on their abilities, including knowledge, skills, and attitudes. Because farmers' abilities vary, not all farmers employ the same cultivation methods [10] and [11].

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It is an observable fact that farming communities consist of individuals with different social characteristics. Within farming communities, there is differentiation in the level of farmer ability in managing their farming business due to differences in knowledge, skills, attitudes, and so on [10] and [12]. Farmers' low levels of knowledge and skills result in relatively limited ability to absorb information and adopt technology, resulting in low-quality products. This low level of knowledge and skills also results in poor farm management skills [13], [14] and [15].

## METHOD

This research was conducted in Tompobulu Village, Tompobulu District, Maros Regency, considering that Tompobulu Village is one of the areas developing soybean commodities in Mamuju Regency. This research was conducted from January to March 2026 in Tompobulu Village. The population in this study were soybean farmers in Tompobulu Village, Tompobulu District, Maros Regency. which amounts to 217 farmers. As for Determination of the number of research samples using the simple random sampling method by randomly taking 15 % of 217 farmers. According to [16] the number of samples that can be selected is 15% of the population .

Process Sampling was done randomly without considering the strata in the population, because the formula is based on the statement If less than 100 it is better to take all of them so that the research is a population study. If the number of subjects is large , it can be taken between 10-15% or 20-55% or more. Respondents were taken randomly by drawing lots and selected as many as 32 farmers. The type of data or information that supports each other to be collected and studied, the type of data used in this study uses quantitative ( descriptive) data . Data sources are needed to obtain data or information related to the focus of the research.

## RESULT

### Respondent Identity

Respondents in this study were soybean farmers in Tompobulu Village, Tompobulu District, Maros Regency . Based on data from 32 respondents who carried out activities in soybean farming through a survey of data collection methods with a questionnaire, the following conditions were obtained regarding the respondents' name, age, last education, main job, side job, farming experience, land area, number of family dependents:

- Respondent Age

In general, a farmer's age influences their physical abilities and way of thinking. Young, healthy farmers tend to have greater physical abilities than older farmers. Younger farmers are more adept at absorbing information and adopting new approaches to farming. However, young farmers often lack experience, unlike older, more experienced farmers.

The ages of the respondent farmers vary greatly, so to find out the age level of the respondents, they are classified based on the age level of the respondent farmers, which can be seen in Table 1.

Table 1. Age of Respondent Farmers in Tompobulu Village, Tompobulu District, Maros Regency .

| No | Age (years) | Respondent (Soul) | Percentage (%) |
|---|---|---|---|
| **1** | 29-35 | 6 | 18.75 |
| **2** | 36-42 | 6 | 18.75 |
| **3** | 43-49 | 8 | 25.00 |
| **4** | 50-56 | 4 | 12.50 |
| **5** | 57-63 | 5 | 15.63 |
| **6** | 64-70 | 3 | 9.37 |
| | **Amount** | 32 | 100.00 |

Source: Primary Data After Processing, 2026

The table above shows that the majority of respondent farmers are aged 43–49 years, representing 25.00%, which is within the productive age group. The second most common age group is 29–35 years, followed by 36–42 years, representing 18.75%. The third most common age group is 57–63 years, representing 15.63%, followed by 50–56 years, representing 12.50%, and finally, 64–70 years, representing 9.37%.

This shows that soybean farmers in Tompobulu Village, Tompobulu District, Maros Regency still have strong physiques, a high level of will, enthusiasm and ability to manage their farming businesses.

- Education

Education level is one of the factors or aspects used to assess the progress of a nation in general and a region or village in particular. The higher the level of education of farmers, the higher the level of progress of a region. Education facilitates innovation and new technologies, so it can be said that farmers with a higher level of education manage their farms relatively well compared to those with less education.

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The level of education referred to refers to the formal education the respondent farmers have completed. This level of education is closely related to the farmers' knowledge, understanding, and skills. For more details, see Table 5 below:

Table 2. Education Level of Respondent Farmers in Tompobulu Village, Tompobulu District, Maros Regency .

| No | Level of education | Number (of Souls) | Percentage (%) |
|---|---|---|---|
| **1** | No school | 7 | 21.90 |
| **2** | Elementary School | 15 | 46.90 |
| **3** | Junior High School | 5 | 15.60 |
| **4** | High School | 5 | 15.60 |
| | **Amount** | 32 | 100.00 |

Source: Primary Data After Processing, 2026

Based on the table above, it shows that most of the respondent farmers still have a low level of education, namely only 15 people graduated from elementary school with a percentage of 46.9%, then followed by farmers who did not go to school as many as 7 people with a percentage of 21.9%, who graduated from junior high school as many as 5 people with a percentage of 15.6%, and who graduated from high school as many as 5 people with a percentage of 15.6%. The highest education achieved by farmers is only up to high school. To overcome this, the role of government agencies is needed to encourage the enthusiasm and willingness of farmers to pursue education [13] and [17].

- Farming Experience

Farming success depends on experience. The longer a farmer manages their business, the more experience they gain compared to those with less experience. A breakdown of average farmer experience can be seen in Table 3.

Table 3. Farming Experience in Tompobulu Village, Tompobulu District, Maros Regency .

| No | Farming Experience (years) | Number (of Souls) | Percentage (%) |
|---|---|---|---|
| **1** | 5–22 | 10 | 31.20 |
| **2** | 23–39 | 13 | 40.60 |
| **3** | 40–57 | 9 | 28.20 |
| | **Amount** | 32 | 100.00 |

Source: Primary Data After Processing, 2026

Based on Table 3, it shows that 10 people have farming experience within the period of 5-22 years with a percentage of 31.2%, 9 people 40-57 years with a percentage of 28.2%, and 13 people 23-39 years with a percentage of 40.6%. Judging from the results of Table 6, it shows that the farmers with the longest farming experience are 23-39 years. Farming experience is closely related to the desire to improve farmers' skills in developing their farming businesses, because the longer the respondent farmer has been farming, the greater their knowledge and skills in applying technology, so that the communication channels used by extension workers can be well received by farmers [10] and [18].

- Family Dependencies

The number of dependents in a farmer's family tends to influence farm operations, as a relatively large family provides a source of labor. The status of respondents' dependents in the farmer's family can be seen in Table 4 below.

Table 4. Number of Family Dependents in Tompobulu Village, Tompobulu District, Maros Regency .

| No | Number of Family Dependents (People) | Number (of Souls) | Percentage (%) |
|---|---|---|---|
| **1** | 1-3 | 16 | 50.00 |
| **2** | 4-6 | 15 | 46.80 |
| **3** | 7 | 1 | 3.20 |
| | **Amount** | 32 | 100.00 |

Source: Primary Data After Processing, 2026

Based on Table 5, it shows that the number of dependents in the respondent farmer's family ranges from 1-3 people, amounting to 16 people with a percentage of 50.0%, 4-6 people, amounting to 15 people with a percentage of 46.8%, and 7 people, amounting to 1 person with a percentage of 3.2%. Judging from the results above, it shows that the farmer respondents who have the most dependents are the number of dependents of 1-3 people, amounting to 16 people with a percentage of 50.0%. This situation greatly affects the level of family welfare and for increasing production to meet their needs. In addition, the number of dependents also shows the amount of labor in the family that can help in the family farming business [8] and [19].

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- Farm Land Area

Land, where farming activities take place, is one of the production factors in farming. The area of land cultivated by each farmer varies, with farmers with larger plots tending to achieve higher yields than those with smaller plots. To determine the area of land cultivated by respondent farmers, see Table 5 below.

Table 5. Area of Farming Land of Farmers in Tompobulu Village, Tompobulu District, Maros Regency .

| No | Land Area (Ha) | Number (of Souls) | Percentage (%) |
|---|---|---|---|
| **1** | 0.21-0.33 | 12 | 37.50 |
| **2** | 0.34-0.46 | 14 | 43.70 |
| **3** | 0.47-0.58 | 6 | 18.80 |
| | **Amount** | 32 | 100.00 |

Source: Primary Data After Processing, 2026

Based on Table 6, it can be seen that the number of farmers who own land areas between 0.21-0.33 ha is 12 people with a percentage of 37.50%, 0.34-0.46 ha is 14 people with a percentage of 43.70%, and land areas with a size of 0.47-0.58 ha are 6 people with a percentage of 18.80%. This situation indicates that most of the farming land areas owned by respondent farmers are relatively narrow or small [20].

- Farmers' Knowledge Level

Farmers' knowledge of soybean cultivation in Tompobulu Village, Tompobulu District, Maros Regency was measured by answering several questions. The measurement of farmers' knowledge can be seen in Table 6.

Table 6. Level of Knowledge of Farmers in Tompobulu Village, Tompobulu District, Maros Regency .

| No | Description | Amount Score | Average Score | Criteria |
|---|---|---|---|---|
| **1** | Know how to cultivate soybean plants | 2.59 | 86.3 | Tall |
| **2** | Media helps in learning about soybean cultivation | 1.56 | 52 | Currently |
| **3** | Harvesting is done using certain tools | 1.94 | 64.6 | Currently |
| **4** | Choose seeds that are whole and have high germination power. | 1.72 | 57.3 | Currently |
| **5** | Knowing the development of soybean commodity prices | 1.28 | 42.6 | Currently |
| | **Amount** | **9.09** | **302.8** | |
| | **Average** | **1.81** | **60.5** | **Currently** |

Source: Primary Data After Processing, 2026

Based on the table above, it shows that the level of knowledge of farmers in Tompobulu Village, Tompobulu District, Maros Regency is included in the medium criteria. First, knowledge of how to cultivate soybean plants with a total score of 2.59 with an average score of 86.3 is obtained as a high criterion, this is because farmers have often participated in extension activities carried out by extension workers and also because there are some farmers who have cultivated soybeans in other places before [21] and [22].

## DISCUSSION

Second, the media helps in learning about soybean cultivation with a total score of 1.56 with an average score of 52 obtained as a medium criterion, this is because most farmers do not utilize electronic media properly, do not know how to use the internet and rarely look at agricultural brochures. Third, harvesting is done using certain tools with a total score of 1.94 with an average score of 64.6 obtained as a medium criterion, this is because farmers do not have certain tools or machines in the harvesting process [23].

Fourth, selecting intact seeds and having high germination power with a total score of 1.72 with an average score of 57.3 obtained moderate criteria, this is because there are still some farmers who do not sort the soybean seeds to be planted. And fifth, knowing the development of soybean commodity prices with a total score of 1.28 with an average score of 42.6 obtained moderate criteria, this is because farmers do not know how to use the media as a means of information [24].

- Farmers' Attitude Level

Farmers' attitudes toward soybean farming in Tompobulu Village, Tompobulu District, Maros Regency were measured through several questions. The measurement of farmers' knowledge can be seen in Table 7.

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Table 7. Level of Attitude of Farmers in Tompobulu Village, Tompobulu District, Maros Regency .

| No | Description | Amount Score | Average Score | Criteria |
|---|---|---|---|---|
| **1** | Clearing weeds and grass | 2.53 | 84.3 | Tall |
| **2** | Choose a seed variety that has a harvest age that suits the existing land conditions. | 2.13 | 71 | Tall |
| **3** | Interested in continuing to grow soybeans | 1.53 | 51 | Currently |
| **4** | Fertilizer is given by spreading it evenly. | 2.19 | 73 | Tall |
| **5** | Planting is done by making planting holes using a digger to a depth of 1.5-2 cm. Each hole is filled with 3-5 seeds. | 1.34 | 44.6 | Currently |
| | **Amount** | **9.72** | **323.9** | |
| | **Average** | **1.94** | **64.7** | **Currently** |

Source: Primary Data After Processing, 2026

Based on the table above, it shows that the level of farmer attitudes in Tompobulu Village, Tompobulu District, Maros Regency is included in the medium criteria. Cleaning weeds and gulama with a total score of 2.53 with an average score of 84.3 is obtained as a high criterion, this is because farmers have used certain tools in the cleaning process and also good soil processing before planting is done to reduce the level of weed emergence. Second, choosing seed varieties that have a harvest age suitable for existing land conditions with a total score of 2.13 with an average score of 71 is obtained as a high criterion, this is because farmers follow instructions from extension workers to plant seed varieties that have been confirmed to be suitable for their land conditions [25] and [26].

Third, interested in continuing to plant soybeans with a total score of 1.53 with an average score of 51 is obtained as a medium criterion, this is because there are some farmers who have experienced crop failures which make them no longer dare to take risks. Fourth, fertilizer application is done by spreading it evenly with a score of 2.19 with an average score of 73 obtained high criteria, this is because farmers feel it is very easy to do by spreading it and saves their time. And fifth, planting is done by making planting holes using a dibble with a depth of 1.5-2 cm. each hole is filled with 3-5 seeds with a score of 1.34 with an average score of 44.6 obtained medium criteria, this is because some farmers do not measure how many cm into the planting hole they only estimate the depth of the planting hole to be used [27].

**Farmer Skill Level**

Farmers' skills in soybean farming in Tompobulu Village, Tompobulu District, Maros Regency were measured using several questions. The measurement of farmers' knowledge can be seen in Table 8.

Table 8. Skill Level of Farmers in Tompobulu Village, Tompobulu District, Maros Regency .

| No | Description | Amount Score | Average Score | Criteria |
|---|---|---|---|---|
| **1** | To reduce soil evaporation in the field, you can use mulch in the form of dry straw, spread between the rows of planting areas with a thickness of between 3-5 cm. | 1.16 | 38.6 | Currently |
| **2** | Weeding is carried out when the plants are around 20-30 days old after planting. | 1.63 | 54.3 | Currently |
| **3** | Harvesting is done when the pods are evenly brownish yellow, and many have dried and fallen off, and the stems have dried out. | 2.78 | 92.6 | Tall |
| **4** | Watering is done in the morning and evening without making the soil too muddy or even dry. | 1.75 | 58.3 | Currently |
| **5** | The fertilizers used are TSP, KCL and Urea | 1.38 | 46 | Currently |
| | **Amount** | **8.7** | **289.8** | |
| | **Average** | **1.74** | **57.9** | **Currently** |

Source: Primary Data After Processing, 2026

Based on the table above, it shows that the skill level of farmers in Tompobulu Village, Tompobulu District, Maros Regency is included in the medium criteria. To reduce soil evaporation in the land, mulch in the form of dry straw can be used, spread between rows of planting areas with a thickness of between 3-5 cm, with a score of 1.16 with an average score of 38.6 obtained medium criteria, this is because some farmers do not know or do not know how to mulch properly. Weeding is carried out when the plants are around 20-30 days after planting, with a total score of 1.63 with an average score of 54.3 obtained medium criteria, this is because farmers do not weed at the age of 20-30 days after planting [28].

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Harvesting is carried out when the pods are evenly brownish yellow, and many have dried and fallen off, and the stems have dried, with a score of 2.78 with an average score of 92.6 obtained high criteria, this is because farmers already know or are skilled in harvesting. Irrigation is carried out in the morning and evening without making the soil too muddy or even dry with a score of 1.75 with an average score of 58.3 obtained moderate criteria, this is because there are some farmers who only rely on rain in irrigating their soybean plants. And the fertilizers used are TSP, KCL and Urea with a score of 1.38 with an average score of 46 obtained moderate criteria, this is because each farmer uses different types of fertilizers and doses [29].

## CONCLUSION

Based on the results and discussion of the research, it can be concluded that: **1)** The level of knowledge of farmers regarding soybean plants in Tompobulu Village, Tompobulu District, Maros Regency is included in the moderate category with an average score of 60.5, which means that farmers already know enough about how to farm soybean plants, 2) The level of attitude of farmers towards soybean plants in Tompobulu Village, Tompobulu District, Maros Regency is included in the moderate category with an average score of 64.7, which means that soybean farmers are quite open to the information provided and accept input on developments in soybean cultivation methods, 3) The level of skills of farmers regarding soybean plants in Tompobulu Village, Tompobulu District, Maros Regency is included in the moderate category with an average score of 57.9, which means that farmers are quite skilled because farmers already have sufficient experience in farming.

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