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Study of Determinants of Yellow Corn Farming Income

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A B S T R A C T

This research investigates the income generated from yellow corn farming in Betteng Village, revealing that the average income per hectare amounts to Rp 5,363,889. The study highlights that several factors play a crucial role in determining farmers' earnings. Among these, land area, seed prices, fertilizer costs, labor wages, and pesticide expenses collectively have a significant impact on the income levels. This indicates that changes in any of these variables can substantially influence the profitability of yellow corn cultivation in the area. Furthermore, the analysis shows that land area, fertilizer prices, and labor wages individually exert a significant partial effect on income, underscoring their importance in the farming process. These findings suggest that managing costs related to fertilizers and labor, as well as optimizing land use, could help farmers increase their income.

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INTRODUCTION

The agricultural sector plays a crucial role in Indonesia's economy, serving as a dependable foundation for national growth. Crops such as corn are vital in supporting livelihoods across rural communities. This sector not only sustains food security but also promotes poverty reduction by enhancing farmer welfare and fostering rural development. Overall, agriculture remains a key driver of Indonesia's economic stability and social progress, ensuring a brighter future for many. (BPT Pertanian), 2009). Corn is a widely grown crop in every country, including IndonesiaCorn is the second most important food source after rice. Nearly 70% of corn production is used for human consumption, while the remainder is used for various purposes, including animal feed, market demand, and industrial needs. The demand for corn will continue to increase year after year in line with improving economic standards and the advancement of the animal feed industry. Therefore, efforts are needed to increase production through the utilization of human and natural resources, land availability, potential harvests, and technology. Corn is a crucial agricultural commodity and is closely linked to large-scale industry. (Arief Prahasta, 2009).

Agricultural income is fundamentally connected to the level of production achieved on farms. The more effectively farmers manage their resources—such as capital, land, labor, and skills—the greater their potential for higher earnings. Intensive management involves carefully planning and utilizing these factors to maximize output while controlling costs. When production costs rise due to investments in better technology or inputs, farmers often see an increase in income, provided they use resources efficiently. Optimal use of land, skilled labor, and adequate capital investment can lead to higher crop yields and livestock productivity. Ultimately, a well-managed farm that balances inputs and minimizes waste tends to generate greater income, reflecting the close relationship between resource management, production levels, and financial success in agriculture. (Adiwilaga in Yunus et al., 2018).

Lembang District, situated within Pinrang Regency in South Sulawesi, stands out as a vital hub for corn cultivation. Among its many villages, Betteng Village plays a particularly important role, serving as a prominent producer of high-quality corn. The abundant fields and favorable climate in the area contribute to its reputation for fruitful harvests. This thriving agricultural activity not only sustains local farmers but also significantly boosts the economy of the entire region, highlighting Lembang District's importance in South Sulawesi's agricultural landscape, Betteng Village, has great potential in developing corn production. Despite being located in a mountainous area, farmers in Betteng Village are able to obtain abundant harvests, and almost all residents in the village carry out yellow corn farming as a source of livelihood, to meet their daily needs. Therefore, Lembang District is a fairly productive sub-district in carrying out yellow corn farming, making it one of the three sub-districts with the highest level of yellow corn production in Pinrang Regency.

LITERATURE REVIEW

Farming Concept

Agricultural science is the science that studies how someone manages and coordinates production factors in the form of land and the surrounding environment as Agricultural science is a vital field that focuses on understanding how farmers can best allocate and organize resources to achieve successful crop and livestock production. It involves studying various aspects such as soil management, water use, crop selection, animal husbandry, and technological innovations to enhance productivity. The goal of agricultural science is to help farmers operate efficiently and sustainably, ensuring that they maximize their yields and profits while minimizing waste and environmental impact (Suratiyah,20215 : 8). By applying scientific principles and research, farmers can make informed decisions about planting schedules, resource distribution, and management practices. This discipline also emphasizes the importance of timing and planning to meet market demands within specific timeframes. Ultimately, agricultural science seeks to improve the overall effectiveness of farming operations, contributing to food security, economic growth, and the responsible stewardship of natural resources. (Soekartawi 2013: 14).

Concept of Cost, Revenue and Income

a. Farming Cost Concept

Production costs are all costs or capital paid in cash or not paid in cash during the production process. Cash costs are the costs actually incurred in producing paddy fields, such as purchasing production facilities (seeds, fertilizers, pesticides and so on), agricultural tools and wages for labor from within and outside the family. Non-cash costs are costs that are not incurred directly but are calculated, non-cash costs in this study are wages for labor in the family). (Kasus et al., 2012) Farming costs are generally categorized into fixed and variable expenses.

Fixed costs, such as land rent, equipment, and interest payments, remain constant regardless of how much is produced. These expenses are unavoidable and need to be paid whether the farm yields a lot or a little.

On the other hand, variable costs change directly with the level of production. For example, costs for seeds, fertilizers, labor, and water increase as more crops are cultivated. Understanding these costs helps farmers plan and manage their operations efficiently.

Information :

TC = Total production costs (Rp)
TFC = Fixed costs (Rp)
TC = TFC + TVC
TVC = Variable costs (Rp)

b. Acceptance

According to Soekartawi (2006), cash receipts from a farm business are the value received from the sale of the business's products. In other words, this receipt is the result of multiplying the total number of products or production by the price per unit or selling price. In calculating total receipts or total revenue, the company's total income is obtained by multiplying the number of items sold by the price of those items. The formula is as follows.

$$TR = P \times Q$$

Information :

TR (total Revenue) = Total Revenue
P (price) = Product Price
Q (Quantity) = Number of Products

c. Income

Agricultural income according to Gustiyana (2004) The term in question can refer to two distinct financial measures. Firstly, it may denote gross income, which encompasses the total annual earnings generated from agricultural sales or exchanges, calculated based on the value at harvest time. Alternatively, it can refer to net income, representing the amount remaining after deducting all expenses, costs, and taxes from the total gross income. Both interpretations are important in assessing the financial health and profitability of agricultural operations.. Production costs include actual labor costs and actual production costs. facilities. (Nugraha & Maria, 2021)

Farm income is the net amount remaining after subtracting total costs from gross income, which is the total revenue generated from agricultural commodity production. This figure reflects the actual earnings farmers retain, highlighting the profitability of their operations and serving as a key indicator of agricultural financial health. :

$$\mathbf{PD = TR\text{-}TC}$$

Information:

PD = Income (Rp)
TR = Total Revenue
TC = Total Cost

Yellow Corn Plants

Corn is a familiar crop to many Indonesians, especially those in rural areas. With the advancement of technology, many varieties of corn are now available. Some are also found in mountainous areas at elevations of 1,000-1,800 meters above sea level. Some of the growing conditions for corn include (Nugraha & Maria, 2021).

Growing Conditions for Yellow Corn Plants

Yellow corn originates from tropical regions and can adapt to growing outside of these environments. The growing requirements for corn are as follows:

1. The desired temperature for yellow corn plants is between 21°C and 30°C. The optimum temperature for ideal growth of yellow corn is 23°C to 27°C. The temperature in an area is closely related to the altitude of the place. The higher the area, the lower the air temperature will be. The seed germination process requires a suitable temperature, namely at 30°C.
2. Altitude
   Yellow corn can be grown in lowlands up to areas with elevations of 1,000 to 1,300 meters above sea level. Corn grown in lowlands below 800 meters above sea level can produce well.
3. Land Slope
   Land slope is related to the movement of surface water. In accordance with standard agricultural guidelines, land exhibiting a slope exceeding 8% may be suitable for corn cultivation, provided appropriate erosion control measures are implemented to ensure sustainable farming practices, the possibility of soil erosion is very small. Whereas land that is too flat is susceptible to erosion by rainwater, which can damage the soil structure and cause loss of fertile soil. A sufficient slope helps in removing excess water from the soil. Corn plants prefer soil that is not too moist, because excess water can cause root rot and the plant becomes susceptible to disease. The slope of the land helps in better nutrient absorption by the plant. Land that is too flat tends to experience problems with waterlogging and the possibility of nutrient loss due to excess water. (Efendi, Muhammad 2017)
4. Land
   The soil where corn grows must have sufficient nutrients. The availability of resources greatly influences progress today. greatly supports the plant's growth process until it produces fruit. Corn does not require special soil requirements; almost any type of soil can be cultivated for corn cultivation. However, corn planted in soil with a texture of clay, silty clay, or sandy clay, with a loose, fertile, and humus-rich soil structure, with a soil pH of 5.5-7.5, will produce good yields.
5. Rainfall
   Water is essential for life. It transports nutrients from the soil to the plant's root zone, facilitating nutrient absorption by the roots. Optimal rainfall requirements for yellow corn are 100-200 mm per month. In areas with evenly distributed rainfall and a less distinct dry season, water requirements are adequately met, allowing the corn to grow well.

Yellow Corn Production Factors

Soekartawi (1990) divides the factors that influence production into two groups, including:

1. Biological factors that influence agriculture encompass various elements such as land fertility, which determines soil productivity, as well as the selection of seed and crop varieties suited to specific environmental conditions.
2. Socioeconomic factors, such as production costs, prices, labor, education level, income level, risk and uncertainty, and institutions. credit availability and so on.

So, production factors are very important and influential because without them, the production process would not exist. The definition of these factors is as follows (Ikram et al., 2018):

Land

Land is a place where plants grow. Land, as a productive asset, is part of the organization of a farming household. Land and natural resources here refer to all natural resources that are not derived from human activities and can be bought or sold. Land is a very important production factor in farming in developing countries. Agricultural land area is a measure of the size of the land, expressed in hectares. In addition to land area, land value is also taken into account (Soekartawi, 2002). For example, limited land ownership leads to less efficient farming unless it is well-managed. Land size is related to efficient land use, which in turn impacts increased production. Larger land holdings lead to greater production unless a farm is well-run, with sound administration and appropriate technology.

Seed

Corn seeds serve as the fundamental starting point for cultivating healthy, productive corn plants. When these initial seeds are carefully selected and of high quality, they have a greater chance of developing into strong, robust plants capable of producing high yields. Using superior seeds not only enhances crop quality but also ensures better resistance to pests and diseases, ultimately maximizing overall productivity and contributing to a successful harvest. (Purwono and Hartanto, 2007).

Corn seeds can theoretically be defined as the seeds of the corn plant used for planting corn. Corn seeds are generally divided into two types: superior corn seeds and local corn seeds. Superior corn seeds are those that possess characteristics superior to those of similar varieties. Currently, there are only a few varieties of superior corn seeds available in Indonesia. Hybrid corn, whose seeds are the first offspring of a cross between two or more lines with heterozygous, homogeneous individual characteristics, is the only variety. Local corn, or composite corn, is corn whose seeds are obtained from the previous harvest and used in the following planting season.

Labor

Labor is the capacity of workers to work, not in terms of productive skills, but rather their response to economic opportunities and their willingness to adapt to economic change. This labor factor plays a role in quality because accommodating a large workforce requires a wide range of job opportunities. Labor in a farming business plays a significant role in supporting activities. Suratiyah (2008) highlights the vital importance of labor, encompassing both male and female workers, in achieving optimal agricultural production. He argues that sufficient and timely labor is essential for the successful planting, tending, and harvesting of crops. When labor shortages occur, they can cause significant delays in farming activities, ultimately reducing yields and affecting the overall productivity of agricultural systems, both from family and non-family, animal labor, and machine labor.

Fertilizer

Fertilizer is a nutrient or substance that is given or added to plants to promote their growth. Plants need fertilizer to supplement nutrients to maintain the nutrient content in the soil and to improve or supplement deficient or even missing nutrients in the soil to support plant growth. Fertilizer is a material added to a growing medium or plant to meet the plant's nutrient needs, enabling it to produce well. Fertilizer materials can be organic or inorganic (mineral). Plants need fertilizer to supplement nutrients to maintain the nutrient content in the soil and to improve or supplement deficient or even absent plant nutrients. From fertilizer related to the physical properties of the soil, namely improving the soil structure to make it loose soil

Pesticide

Pesticides are substances, including chemicals, microorganisms, or viruses, designed to eliminate pests such as insects, fungi, weeds, and other harmful organisms.

They play a crucial role in modern agriculture by protecting crops from damage caused by these pests, thereby reducing potential crop losses. The application of pesticides helps farmers maintain healthy plants and ensure higher yields, contributing to food security. Alongside the use of advanced crop varieties and fertilizers, pesticides form an integral part of integrated pest management strategies. Their proper and judicious use enables farmers to improve crop quality and quantity, supporting sustainable agricultural practices and ensuring a stable food supply for growing populations.

1. Preventing or eliminating pests and diseases is essential for maintaining healthy, productive plants and crops.
2. Eradicating weeds.
3. Kills leaves and prevents unwanted growth.
4. Regulating or stimulating the growth of plants or plant parts, excluding fertilizers,
5. Eradicating or preventing external pests in pets and livestock.

METHODOLOGY

Sampling Determination Techniques

The population of yellow corn farmers in Lembang District, Pinrang Regency is 203 farmers. This study used a simple random sampling method, namely a method of determining samples that is carried out randomly A representative sample comprising 15% of the yellow corn farmers was carefully selected from the total of 203 farmers residing in Betteng Village, located within the Lembang District of Pinrang. This sampling aimed to gather meaningful insights while ensuring a manageable and accurate reflection of the local farming community's practices and experiences. 203 x 15% = 30 samples taken from the research location.

Data Source Types

The research will utilize various innovative methods to achieve comprehensive results.:

a. Primary data refers to information gathered firsthand from corn farmers via questionnaires, providing firsthand insights into their practices, challenges, and agricultural experiences..
b. Secondary data is data obtained through library research and from relevant institutions or agencies in the preparation of this research. This secondary data can include relevant research journals, books, and publications from government agencies, including the Department of Agriculture.

The Data Collection

Techniques employed in this research encompass surveys, interviews, observations, and document analysis.:

a. Observation
   Observation is direct observation using the sense of sight, where the researcher does not directly participate in the situation being studied. Observations are conducted to gather information regarding farmers' developments on their farms.
b. Interview
   Interviews are a process of interaction and communication in collecting data by asking respondents directly, where in this research it is used to obtain information data about education level, income, farming management techniques, farming experience, etc.
c. Documentation
   Documentation is the process of collecting data by streaming or taking information from records, documentation, and administration. that is appropriate to the problem.

Analysis Techniques Data

This study utilizes a comprehensive approach by applying multiple regression analysis through the Ordinary Least Squares (OLS) method to examine the various factors that influence the income levels of yellow corn farmers in Betteng Village, located within Lembang District of Pinrang Regency. By analyzing data collected from local farmers, the research aims to identify key variables such as land size, fertilizer usage, access to markets, and farming experience that significantly impact income. The findings will provide valuable insights for policymakers and agricultural stakeholders seeking to improve the economic well-being of yellow corn farmers in the region.:

RESEARCH RESULT

Analysis of Yellow Corn Farming Income

Table 1. Analysis of Costs and Income of Yellow Corn Farming During One Planting Season in Lembang District, Pinrang Regency

No.	Description	Total Production Amount (Average/MT)	Unit price (Rp/Kg)	Mark Average/hectare (Rp)
1.	**Production (Kg)**	2,882	3,373	**9,720,986**
2.	**Production cost**			
	- Variable costs			
	Seed	12,083	99,567	**1,203,097**
	Fertilizer			
	- Phonska	611,000	130,000	**545,536**
	- Urea	640,000	102,667	**571,429**
	Pesticide			
	- Supreme	59,400	24,333	**53,036**
	- Turmadan	84,500	29,833	**75,446**
	- Calaris	178,000	103,167	**158,929**
	- Garamoxone	99,333	41,667	**88,532**
	- bitop	111,667	31,333	**99,525**
	Labor wages	1,275,667		**1,138,988**
	Total variable costs	**4,412,400**		**3,939,643**
	- Fixed Costs			
	Farmer group contributions	8,000	-	**7,143**
	Depreciation of equipment	68,078	-	**60,784**
	Land Tax	26,500	-	**23,661**
	Total Fixed Costs	**102,587**		**91,588**
3.	**Total cost**			
	- Variable costs	4,412,400	-	**3,939,643**
	- Fixed costs	102,578	-	**91,587**

	Total Production Cost	**4,514,987**	**4,031,231**
5.	**Income**	**6,007,556**	**5,363,889**

Factors that Influence Yellow Corn Farming Income

Table 2. Presents Detailed Data on Experimental Results

	Coefficients income (Rp/Million)	**Standard Error**	**t-Stat**	**P-Value**
Intercept	10.56813637	1.606118304	6,579924	**0.0000**
X1 (Land Area)	3.749609071	0.514572117	7.246849	**0.0000**
X2 (Seed Price)	-0.002867436	0.003989166	-0.718806	**0.4792**
X3 (Fertilizer price)	-0.010299649	0.003198258	-3,220393	**0.0037**
X4 (Pesticide price)	-0.000661106	0.00370187	-0.178587	**0.8598**
X5 (Value of labor)	-0.007978439	0.002759514	-2.891248	**0.0080**

R-squared	: 0.810
Adj R-squared	: 0.771
F-count	: 7,206
Sig.F	: 0.0000
T-table	: 2,059
F-table	: 2,620

From table 2, the regression coefficients and constants obtained can be seen, so the regression model equation is as follows:

Y: 10,568 + 3,749X1– 0.0028X2– 0.010X3– 0.0006X4-0.0079X5– (2.53 e-15)

Y = income
*X*1 = land area (Rp)
*X*2 = Seed Price (Rp)
*X*3 = Labor Value (Rp)
*X*4 = Pesticide Price (Rp)
*X*5 = Fertilizer Price (Rp)
e = Residual value (Error Term)

DISCUSSION

Analysis of Yellow Corn Farming Income

Farming income is one of the farming analyses to determine the extent to which the business run by farmers experiences profits or losses where the farming run does not experience profits or losses. In connection with the problems raised in this study, an income analysis was conducted. Where after obtaining data through interviews and filling out questionnaires, the data obtained were then collected and processed after being analyzed to determine the amount of income obtained by Lembang District, Pinrang Regency. Farming income the average income per planting season in Lembang District, Pinrang Regency, typically amounts to a modest yet vital sum, reflecting the hardworking farmers' efforts to sustain their livelihoods and contribute to the local economy.

According to Table 1, the average yellow corn production per hectare stands at 2,882 kilograms, highlighting the typical yield farmers can expect under current growing conditions. This figure provides valuable insight into regional agricultural productivity and efficiency levels. the amount of production costs such as the average amount of variable costs incurred is Rp.4,412,400 with an average amount / hectare of Rp.3,939,643 / Ha and the average amount of fixed costs incurred by farmers is Rp.102,587 with an average amount / hectare of Rp.91,588 / Ha. so, the total average production costs incurred by farmers in one planting season are the average amount of variable costs plus the average fixed costs of Rp. 4,514,987 with an average amount / hectare of Rp. 4,031,230 / Ha so as to obtain the average amount of income in one planting season of Rp. 6,007,556 with an average amount/hectare of Rp. 5,363,889/Ha.

Factors that Influence Yellow Corn Farming Income

This study utilizes multiple linear regression analysis through Ordinary Least Squares (OLS) to explore the relationships between various factors and farm income. Specifically, it examines how land area, seed costs, fertilizer expenses, pesticide expenditures, and labor wages individually and collectively impact the income generated from farming activities. By analyzing these variables simultaneously, the research aims to identify significant predictors and measure their relative influence on farm profitability. The results, which are summarized at the end of the analysis, provide valuable insights into the key drivers affecting agricultural income.

Based on the regression model equation results, we can conclude that the key factors significantly influence the outcome variable.:

a. The constant value = 10.568 shows that the amount of income from yellow corn farming on the variables of land area (X1), seed price (X2), labor value (X3), pesticide price (X4) and fertilizer price (X5) if it is equal to zero or remains constant/does not change then the income from yellow corn farming increases by 10.568
b. Land area (X1) (The regression coefficient of 3.749 suggests that for every additional hectare of land, there is an approximate increase of 3.749 units in the dependent variable. This positive relationship highlights the significant impact that expanding land area has on the outcome being measured, emphasizing the importance of land size in the analysis.
c. Seed Price (X2A regression coefficient of -0.0028 suggests that for every unit increase in seed prices, there is an associated decrease in income by Rp 0.0028. This negative relationship indicates that higher seed prices tend to reduce income levels, highlighting the sensitivity of income to changes in seed costs within the studied context.
d. Fertilizer Price (X3) In a standard style, a regression coefficient of -0.010 indicates that as fertilizer prices increase, there is a slight decrease in crop yield, suggesting an inverse relationship between the two variables.

e. Pesticide Price (X4) A regression coefficient of -0.0006 suggests that for every one-unit increase in pesticide prices, there is an associated decrease of approximately 0.0006 units in the dependent variable, highlighting a slight negative relationship between the two factors.
f. The value of labor (X5) has a regression coefficient of -0.0079, indicating a negative (-) relationship between the value of labor and income, meaning that for every increase in labor wages, income decreases by Rp. 0.0079 because the higher the value of labor, the lower the income earned.

Simultaneous Statistical Significance Test (with F Test)

The F-test results clearly indicate that multiple factors significantly influence the income generated from yellow corn farming in Betteng Village, Lembang District, Pinrang Regency. Specifically, land area, seed price, labor wages, pesticide prices, and fertilizer prices collectively contribute to variations in farmers' earnings. The statistical analysis revealed a highly significant F-value of 0.0000, with a p-value less than 0.05, confirming the overall importance of these variables. Furthermore, the calculated F-value of 20.595 surpasses the critical F-value, demonstrating that the combined effect of these factors is not due to random chance but has a meaningful impact on income levels. This finding underscores the necessity for farmers and stakeholders to pay close attention to these key variables when planning and managing yellow corn cultivation. By optimizing land use, seed selection, and input costs, farmers can potentially improve their income and ensure more sustainable and profitable farming practices in the region. Susianti et.all (2013) which concluded that the results of the linear regression of the F test on independent variables, namely land area (LL), seed price (HrgBNH), fertilizer price (HrgPP), pesticide price (HrgPTS), labor wages (UTK), farmer age (UP), farmer education (PP), and output/corn price (HrgJG) simultaneously (together) affect the income of sweet corn farming businesses.

A *Partial Statistical Analysis Reveals Key Insights*.

A t-test analysis indicated that several factors notably influence the income of corn farmers. Specifically, land area, seed price, labor wages, pesticide price, and fertilizer price all showed partial significance in determining earnings. These variables individually contribute to variations in income, highlighting the importance of resource management and cost considerations for farmers aiming to optimize their profitability.:

a. Land area variable (X1)
   Based on the data analysis, since the t-count exceeds the critical t-value listed in the table and the p-value is below 0.05, we can confidently reject the null hypothesis. This suggests that there is a statistically significant difference or effect present in the data, supporting our research hypothesis. significantly influences the income of yellow corn farming. This shows that farmers who have large cultivated land will be able to guarantee a large level of income. Where the larger the cultivated land, the higher the income will be, so in this study Land size significantly influences farmers' income levels. This research finding aligns with

previous studies. of Farizi's research (2018), where land area has a real effect and has a positive relationship with the farmer's net income with a 95 percent confidence level.

b. Seed price variable (X2)
Based on data analysisThe research revealed that seed price does not have a significant influence on the income generated from yellow corn cultivation. This finding contrasts with the results of Susianti et al. (2013), who demonstrated that seed prices play a crucial role in determining farm income levels. While previous studies suggested a strong correlation between seed costs and profitability, the current study indicates that other factors may be more critical in affecting yellow corn income. This insight underscores the complexity of agricultural economics and the need for further investigation into the variables influencing farm profitability.

c. Fertilizer Price Variable (X3)
According to recent data analysis, there is a clear and significant relationship between fertilizer prices and the income of yellow corn farms. As fertilizer costs fluctuate, they directly impact the overall profitability of these farms. When fertilizer prices rise, farmers often face increased expenses, which can squeeze profit margins if not managed carefully. Conversely, when prices are more favorable, farmers may be encouraged to apply more fertilizer to maximize yields, but this can lead to overuse. Excessive application of fertilizer beyond recommended levels has been linked to detrimental effects on soil health, including nutrient imbalance and degradation of soil structure. Such deterioration ultimately hampers the soil's natural fertility, making it less productive over time. This decline in soil quality can lead to lower crop yields and, consequently, reduced farm income. Therefore, it is crucial for farmers to carefully balance fertilizer use adhering to recommended levels—and consider fertilizer prices in their budgeting strategies. Sustainable practices that optimize fertilizer application can help maintain soil health and ensure long-term profitability for yellow corn farmers.

d. Pesticide price variable (X4)
The analysis reveals that pesticide prices do not have a significant impact on the income generated from yellow corn cultivation. This finding is consistent with previous research, which emphasizes the critical role that pesticides play in effective pest management and crop protection. Farmers often rely on pesticides to control pests that threaten their yields, making these chemicals an integral part of modern agricultural practices. However, there is also growing awareness of the environmental and health risks linked to excessive pesticide use, including contamination of soil and water, harm to non-target species, and potential health issues for farm workers and consumers. Despite the high costs associated with pesticides, their price fluctuations do not appear to directly influence the profitability of yellow corn farming in the studied context. This suggests that other factors, such as pest pressure, crop management strategies, or

market conditions, may have a more pronounced effect on farmers' income levels.

e. Labor Value Variable (X5)
   According to the data analysis, the fertilizer price variable is statistically significant, evidenced by a t-count of -2.891 and a p-value of 0.008. This indicates that changes in fertilizer prices have a meaningful impact on the overall model, highlighting the importance of considering fertilizer costs in related agricultural or economic evaluations.
   Lack of human resources and quality in managing yellow corn farming. This aligns with previous research by Christofel D. Nababan, which explains that the available labor force must be commensurate with the available land, and the quality of the workforce must be such that they possess the expertise and skills to manage the land properly and correctly.

Determinant Coefficient Test (R2)

The coefficient of determination, denoted as R^2, is a statistical measure used to assess how well a set of independent variables explains the variability of a dependent variable. In this case, the R^2 value of 0.81 signifies that the combined influence of land area, seed price, labor wages, pesticide price, and fertilizer price accounts for 81% of the variation observed in corn income. This high percentage suggests that these factors are significant determinants of income levels in corn production. Conversely, the remaining 19% of variation is attributable to other factors not incorporated in the model, which may include weather conditions, pest infestations, technological advancements, or market fluctuations. Overall, an R^2 of 0.81 indicates a strong relationship between the variables considered and corn income, highlighting the importance of land and input prices in agricultural profitability. This understanding can guide farmers and policymakers to focus on these key factors to enhance income stability and growth.

CONCLUSIONS AND RECOMMENDATIONS

Research using multiple linear regression in Lembang District, Pinrang Regency, identified key factors influencing agricultural productivity, highlighting the significant roles of soil quality, rainfall patterns, and farming techniques in shaping successful crop yields.:

a. Yellow corn farmers typically earn an average net income of approximately Rp. 5,363,889 per hectare. Notably, a significant 81% of this income is influenced by various factors, including weather conditions, access to quality seeds, and effective pest management. These elements play a crucial role in determining the profitability and sustainability of yellow corn cultivation for farmers..
b. In a typical analytical framework, multiple factors collectively impact the primary outcome variable. Specifically, land area, seed price, labor wages, pesticide price, and fertilizer price each play a significant role in determining the binding variable. Moreover, land area, fertilizer price, and labor wages are particularly influential, exerting a notable effect on the outcome. Understanding these relationships is crucial for optimizing

resource allocation and improving overall productivity, as adjustments in these key factors can lead to substantial changes in the final results.

Income influenced by land area to optimize land processing to increase production frequency of extension, irrigation access, use of mechanization (tractors/combine harvesters), and level of OPT (Plant Pest Organism) attacks.

ADVANCED RESEARCH

1. The effectiveness of floor price policies on protecting farmers' incomes.
2. Comparison of income determinants between rice fields and dry land (fields).

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