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Analysis of Madura Tobacco Farming in Various Agroecosystems in Kadur District Kabupaten Pamekasan

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Abstract
This study aims to analyze Madura tobacco farming in Kadur District, Pamekasan Regency, based on the characteristics of farmers, production cost structure, profit level, business efficiency, and profitability in three agroecosystems, namely rice fields, tegals, and mountains. The tobacco varieties analyzed include Prancak 95, Opot, and Melateh Tompang. Data was obtained from respondent farmers in three sample villages, namely Bungbaruh village with rice field tobacco land, Bangkes Village with tegal tobacco, and Pamoroh Village with mountain tobacco land. Using the survey method, it was then analyzed quantitatively descriptively through the calculation of profit (π), Profit Rate, R/C Ratio, and Return on Investment (ROI). The results of the study show that the characteristics of tobacco farmers in Kadur District are dominated by the adult age group with relatively long farming experience, varied formal education, and small to medium land ownership. The cost structure of tobacco farming is dominated by labor costs, with a contribution of 72–82% of the total cost, which reflects that Madura tobacco cultivation is labor-intensive. In terms of production, the Melateh Tompang variety shows the highest level of productivity in all types of land, but it is not always followed by high selling prices. The Prancak 95 variety has the highest and most stable selling price, but produces the lowest profits and profitability. The results of the farming analysis showed that the Opot variety provided the highest profits, profit rate, R/C Ratio, and ROI on rice fields and fields, while the Melateh Tompang variety was most profitable on mountain land. All varieties in all three types of land have an R/C Ratio value above one, so it is still economically feasible. Overall, the Opot and Melateh Tompang varieties have proven to be financially superior to Prancak 95, with a higher level of profitability and better cost efficiency. These findings indicate that the suitability of varieties with agroecosystem conditions is a key factor in increasing income and sustainability of tobacco farming in Kadur District.

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Keywords: Tobacco Farming Business, Profit Rate, R/C Ratio, ROI, Madura Tobacco Varieties, Kadur District

1. Introduction

Tobacco is one of the strategic plantation commodities that has an important role in the economy of the Madura region, especially in Pamekasan Regency. This commodity is not only the main source of income for farmers' households, but also contributes to the absorption of labor, local economic turnover, and the sustainability of agricultural traditions based on local wisdom. Kadur District is known as one of the Madura tobacco production centers with diverse agroecosystem characteristics, covering rice fields, tegals, and mountains, resulting in different farming patterns between regions. (East Java Provincial Plantation Office 2024) [6].

The success of tobacco farming is highly determined by the suitability of varieties to land conditions, the ability of farmers to manage production inputs, and the efficiency of cost use. Farmers in Kadur District generally cultivate several superior varieties of Madura tobacco, including Prancak 95, Opot, and Melateh Tompang. Each variety has different characteristics related to productivity, leaf quality, response to the environment, and market acceptance rate. These differences in characteristics cause variations in production yields, selling prices, and the level of profit obtained by farmers. (Putri, A. D., *et al*. 2015) [10].

In addition to technical factors, the socioeconomic characteristics of farmers, such as age, education level, farming experience, and land area, also play an important role in determining farming decision-making patterns. Farmers with long experience tend to maintain varieties that have been cultivated for a long time and are considered stable, while farmers with better access to information and managerial capacity are comparatively more adaptive in adopting varieties that provide higher profits. Therefore, the analysis of the tobacco farming business cannot be separated from the characteristics of farmers as the main actors of production. (Tarigan *et al*., 2013) [12].

In practice, Madura tobacco farming is known as a labor-intensive business with high labor needs, especially at the maintenance, harvest, and post-harvest stages. The cost structure dominated by labor causes business efficiency to be greatly influenced by the ability of farmers to manage production costs. The difference in cost structure between land types and varieties has direct implications for the level of profit, efficiency, and profitability of tobacco farming businesses.

Although tobacco is still a leading commodity, farmers are faced with various challenges, such as price fluctuations, differences in leaf quality, and yield uncertainty due to diverse agroecological conditions. Therefore, a comprehensive study is needed on the analysis of the tobacco farming business that not only looks at the production aspect, but also assesses the feasibility and profitability of the business based on measurable economic indicators. The analysis is important as a decision- making basis for farmers, extension workers, and policymakers in determining the most profitable and sustainable varieties and cultivation strategies. Based on these conditions, this study was conducted to analyze Madura tobacco farming in Kadur District, Pamekasan Regency, by comparing the economic performance of three tobacco varieties on three types of land. The results of the study are expected to be able to provide an objective picture of the level of profit, efficiency, and profitability of tobacco farming businesses, as well as be considered in the development of a more efficient and competitive Madura tobacco farming business. (Dillon & Hardaker, 1993) [5].

2. Research Methodology

2.1. Place and Time of Research

This research was carried out in Kadur District, Pamekasan Regency, and for sampling or correspondents, it will be carried out in three villages in Kadur District, namely, in Bungbaruh Village, Bangkes Village, and Pamoroh Village. The implementation time of this research is scheduled from the beginning of the tobacco planting season to harvest, or from May to August 2025.

2.2. Determination of Research Object

The determination of the research object (sample) used in this study uses the purposive sampling method, where the researcher deliberately selects respondents who have certain characteristics that are relevant to the objective. In other words, the researcher selected the sample based on special considerations, rather than randomly. By using purposive sampling, where the sampling of respondents in these three types of tobacco land is 25 people each in each type of tobacco land, or the total number is 75 people

2.3. Data Collection

The data collected in this study are primary data and secondary data. Primary data was obtained through a questionnaire that had been prepared for farmers. The questionnaire given is a statement to be filled in by the respondents about what they experience, feel, and do about the perceived research variables by providing a choice of answers. Secondary data was obtained through searching, collecting, and studying books, journals, the internet, and documents related to research.

3. Results and Discussion

3.1. Characteristics of Respondents and Analysis of Farming Businesses

3.1.1. Respondent Characteristics

According to Sahadewo *et al* (2020) [11], Respondent characteristics are an important aspect of farming research because they reflect the social conditions, experience, and production capacity of farmers that affect behavior and decision-making in farming activities, including in the selection of plant varieties that are Striving. The characteristics of the respondents in this study provide an overview of the social conditions, experiences, and production capacity of Madura tobacco farmers, who are the main sources of data. These characteristics are important to analyze because they can influence the way farmers make decisions, including in determining the tobacco variety they choose. In general, some of the aspects analyzed include age, education level, farming experience, land area, and varieties cultivated. The characteristics of the respondents in this study can be shown below.

Table 1: Respondent Characteristics (Average)

Land Type	Varieties	Age (Years)	Education	Farming Experience (Years)
Rice Fields	Prancak 95	51	SMP	21
	Opot	49	SMP	21
	Malateh Tompang	45	SMP	13
Tegal	Prancak 95	49	SD	18
	Opot	49	SMP	19
	Malateh Tompang	42	SMA	15
Gunung	Prancak 95	45	S1	25
	Opot	46	SMA	16
	Malateh Tompang	45	SMA	20

Source: Primary Data Source, processed (2025)

From this data, it is known that the average age of farmers in tobacco varieties (Prancak 95, Opot, and Malateh Tompang) from three types of land (rice fields, tegals, and mountains) shows that the characteristics of farmers' age play an important role in determining variety preferences and adaptation to land types. Farmers in rice fields are dominated by older age, namely 45 to 51 years old, while farmers who manage agricultural land are in the middle age group, namely 46 to 49 years old, and on mountain land, there are younger farmer groups, such as 42 years old in Opot variety tobacco. According to Hasibuan *et al*. (2023) [9] explained that the choice of land and varieties is not only influenced by economic factors, but also by the cultural values and experiences of previous generations, especially in highland areas. These findings support a pattern seen in mountain tobacco farmers who are more diverse in age and have a close affinity to local cultivation traditions, such as many generations of farmers in their families.

For education-based characteristics for the Prancak 95 tobacco variety land, most of the farmers with a junior high school education, both in rice fields, fields, and mountains, for the Opot tobacco variety, a variation in education level, from elementary to high school, was found, which illustrates that this variety is cultivated by a group of farmers with a more socially heterogeneous background. As for Malateh Tompang, the proportion of farmers with high school and S1 education is more prominent, especially in rice fields and tegals, which shows that this variety tends to be chosen by farmers who have a greater capacity to access cultivation information and farm management.

According to Sahadewo *et al* (2020) [11], suggests that tobacco's contribution to farmers' household incomes often makes this commodity managed by all levels of education, but higher-educated farmers are generally quicker to adopt the practice of pengelolaan more efficient land. This shows that this variety is widely cultivated by farmers with hereditary practical experience, where technical knowledge is more obtained from field practice than from formal education.

Characteristics of respondents based on the length of business. In the 95 varieties of tobacco in the 95 crore tobacco fields, rice fields, and mountains, have 18 to 25 years of farming experience. This farming experience shows that Prancak 95 is the longest cultivated variety by tobacco farmers in the Kadur sub- district. For the Opot variety, the experience of farming tobacco ranges from 16 years to 21 years, which indicates that the group of farmers who cultivate it has considerable flexibility and adaptation to changes in agroeconomic conditions. Meanwhile, Malateh Tompang has the lowest farming time in some agroecosystems, especially in rice fields (13 years), indicating that this variety is relatively recently adopted or more managed by farmers who are in the transition phase of experience.

These findings are in line with research by A Nurfadliyah *et al* (2025) [1], stating that research in Bulukumba Regency shows that the perception of tobacco farmers is influenced by the mastery of each farmer's cultivation process and techniques, which reflects the practical knowledge gained through their experience in tobacco farming.

The characteristics of the respondents based on land area, according to A Nurfadliyah *et al* (2025) [1], state that farmers who have a larger area of land tend to be more selective in choosing varieties according to the characteristics of the land. Based on the results of this study, farmers growing three varieties of tobacco, there are quite striking variations between ecosystems. The land area ranges from 0.43 to 1.5 ha, which indicates that most farmers are in the category of small to medium farmers, with relatively limited land ownership but still enough to Sustain Intensive tobacco cultivation activities.

In rice fields, the Malateh Tompang variety has the largest land area (0.75 ha), followed by Opot (0.6 ha) and Prancak 95 (0.43 ha). This shows that Malateh Tompang is seen by farmers as a variety that needs more space to achieve optimal yield potential. In the field, Prancak 95 is actually the variety with the largest land area (1.5 ha), showing that this variety has the best yield prospects and adaptation to dry agroecosystems.

In mountainous land, the land area is smaller but still dominated by Prancak 95 (0.69 ha), which illustrates the flexibility of the variety in various types of land. According to Cahyono *et al*. (2022) reported that the difference in land area in tobacco cultivation is closely related to risk management strategies, where farmers tend to expand the planting area on varieties that have been controlled for a long time and have proven to be profitable. Farmers and producers of this supervision prove that land area affects the technical efficiency and profitability of farming businesses.

3.1.2. Characteristics of Farming

Characteristics of Respondents Based on Production Results The results of the study show that three varieties of malateh tompang, opot, and prancak 95 have different levels of productivity in each type of land, both rice fields, tegal, and mountain land. In general, the results of this research can be shown in the table below.

Table 2: Characteristics of Respondents Based on Farming Business

Land Type	Varieties	Number of Respondents (People)	Land Area (Ha)	Production Yield (kg)	Selling Price /Kg (Rp)
Rice Fields	Prancak 95	2	0.43	800	70,000
	Opot	12	0.6	1000	70,000
	Malateh Tompang	11	0.75	1100	60,000
Tegal	Prancak 95	2	1.5	800	75,000
	Opot	16	0.6	1000	70,000
	Malateh Tompang	7	0.7	1000	65,000
Gunung	Prancak 95	7	0.69	1100	80,000
	Opot	4	0.45	1000	65,000
	Malateh Tompang	14	0.55	1000	65,000

Source: Primary Data Source, processed (2025)

According to Astuti *et al*. (2021) [3] stating that land area, fertilizers, labor, and seeds are the factors utama determinants of tobacco production. The results showed that three varieties of tobacco had different levels of productivity on each type of land. In general, Malateh Tompang is the variety with the highest yield in all agroecosystems, namely 1100 kg on rice fields, 1000 kg on tegal land, and 1000 kg on mountain land. This achievement proves that Malateh Tompang has better adaptability and the ability to respond to production inputs more optimally than other varieties.

According to Battese and Coelli (1995) [4], Technical efficiency is an important factor that determines the output level of tobacco production, because the more efficient farmers are in managing production inputs, the greater the output that can be produced at the same input level. This is in line with the results of the study that adaptive varieties such as Malateh Tompang tend to produce higher yields at optimal input conditions, for opot varieties, medium production shows medium production, namely 1000 kg in rice fields and fields, 900 kg in mountain land. This indicates that Opot is quite responsive to the condition of the land, although not as strong as Malateh Tompang. Prancak 95 has the lowest and most stable production yield (800 kg on all types of land). This may indicate that Prancak 95 is more stable, but less responsive to variations in agroecological conditions and production input intensity.

According to Fajar and Maulidah (2021) [7] stated that the stable and consistent quality of tobacco tends to be valued higher in the market because it can meet the needs of the cigarette industry specifications, thus affecting the income of farmers in producing areas such as Madura. Some research on tobacco price dynamics shows that the price of tobacco is greatly influenced by the characteristics of quality and market demand**,** although price fluctuations still occur due to climatic factors and distribution chains. This is evidenced from the results of the above study showing that the price of Prancak 95 is consistently higher than other varieties in all types of rice fields This tendency shows that Prancak 95 has stable leaf quality, so it gains higher trust from buyers and existing cigarette manufacturer warehouses.

The quality of Prancak 95 leaves is often associated with the specificity of the aroma, thickness, and color of the leaves that are in accordance with Madura tobacco standards.

Opot Varieties Opot Prices are more stable in the middle range: This variety has a fairly strong market, but is more sensitive to agroecological conditions, especially in mountainous lands that produce lower leaf quality. The stagnant price shows that Opot has its own market segment, but not as high as Prancak 95. But of the many Opot, they have a stake in the production of rice fields and tegals. Lower prices indicate that these varieties are generally seen as less competitive in quality, although productivity in some locations is higher. This condition often appears in varieties that have a high dependence on certain land conditions, so that the quality of the leaves is less stable.

The lower price of Malateh Tompang indicates that this variety is generally seen as less competitive in quality, although productivity in some locations is higher. This condition often appears in varieties that have a high dependence on certain land conditions, so the quality of the leaves is not good.

3.2. Analysis of Tobacco Farming Efforts

3.2.1. Calculating the Cost of Tobacco Production

Production costs are a major component in the analysis of tobacco farming because they directly determine the level of profit and business feasibility. The magnitude of production costs reflects the intensity of input use and the efficiency of farm management by farmers. The calculation of the analysis of the cost of production of tobacco plants for each variety of rice field tobacco, tegal tobacco, and mountain tobacco can be translated into the table below.

Table 3: Tobacco Plant Production Cost per (Ha)

Land	Varieties	Fixed Cost (%)		Means of Production (%)		Workforce (%)		Miscellaneous Charges (%)		Total (%)
Rice Fields	Prancak 95	2,500,000	4.86	7,535,000	14.63	40,200,000	78.08	1,250,000	2.43	100
	Opot	2,500,000	5.13	7,860,000	16.14	36,850,000	75.65	1,500,000	3.08	100
	Malateh Tompang	2,500,000	4.92	7,370,000	14.51	39,170,000	77.12	1,750,000	3.45	100
Tegal	Prancak 95	2,500,000	4.79	9,625,000	18.46	35,820,000	68.69	4,200,000	8.06	100
	Opot	2,500,000	4.80	9,965,000	19.15	36,820,000	70.76	2,750,000	5.29	100
	Malateh Tompang	2,500,000	5.05	8,305,000	16.77	36,320,000	73.34	2,400,000	4.84	100
Gunung	Prancak 95	2,500,000	4.82	7,762,500	14.95	39,155,000	75.42	2,500,000	4.81	100
	Opot	2,500,000	5.07	8,055,000	16.35	36,320,000	73.71	2,400,000	4.87	100
	Malateh Tompang	2,500,000	5.04	7,762,500	16.77	39,155,000	73.34	2,500,000	4.85	100

Source: Primary Data Source, processed (2025)

According to Adya Restina Prameswari *et al* (2023) [2], Labor is the dominant factor that affects farming's income. This statement is evident from the results of the study show that the largest cost component in Madura's tobacco production comes from labor costs, with a contribution of 72–82% across all varieties and locations. The dominance of labor costs illustrates that Madura tobacco cultivation is a labor-intensive commodity, especially in the maintenance, picking, fishing, and drying phases. This condition is in line with the characteristics of Madura tobacco, which requires intensive handling to produce high-quality leaf.

In rice fields, labor reached the highest number, which was 82.07% in the Prancak 95 variety. Rice fields require more frequent maintenance activities, such as irrigation, weeding, and repeated fertilization, so the need for labor increases. In contrast, the cost of means of production is in the range of 15–17%, indicating that material inputs such as fertilizers, pesticides, and seeds do not dominate the cost structure.

In Tegal Tobacco, the portion of production facilities is higher than that of rice fields and mountains, reaching 19–20%. This is due to drier land conditions, so farmers need to add fertilizers and pesticides to maintain plant growth. But labor remains the largest component. Miscellaneous costs, such as transportation and labor consumption, reached up to 8.46%, higher than the other two locations.

Meanwhile, in mountain tobacco, the cost structure tends to be stable with the contribution of production facilities of 15–17% and labor of 77–79%. The character of rocky soil and steep slopes makes cultivation activities not as intense as in rice fields, but still requires quite a lot of labor, especially during harvest and post-harvest.

3.2.2. Calculating the Profits of Tobacco Farming

The calculation of tobacco farming profits is carried out to find out the amount of net profit obtained by farmers in one planting season. This profit is the difference between the total revenue obtained from the sale of tobacco and the total production costs incurred during the cultivation process until post-harvest. The profit calculation can be seen in the table below.

Table 4: Analysis of Tobacco Farming Business per (Ha)

Types of Tobacco	Varieties	Total Cost (Rp)	Yiel d (kg)	Price (Rp/kg)	Admission (Rp)	Net Profit (Rp)	Profit Rate (%)	R/C Ratio	ROI (100%)
Rice Fields	Prancak 95	48,985,000	800	70,000	56,000,000	7,015,000	14.32	1.14	14.32
	Opot	46,210,000	900	70,000	63,000,000	16,790,000	36.33	1.36	36.33
	Melateh Tompang	48,290,000	1,000	60,000	60,000,000	11,710,000	24.24	1.24	24.25
Tegal	Prancak 95	49,645,000	800	75,000	60,000,000	10,355,000	20.86	1.21	20.86
	Opot	49,535,000	1,000	70,000	70,000,000	20,465,000	41.30	1.41	41.31
	Melateh Tompang	47,025,000	1,000	65,000	65,000,000	17,975,000	38.23	1.38	38.22
Gunung	Prancak 95	49,417,500	800	80,000	64,000,000	14,582,500	29.52	1.30	29.51
	Opot	46,775,000	900	70,000	63,000,000	16,225,000	34.69	1.35	34.69
	Melateh Tompang	47,025,000	1,000	65,000	65,000,000	17,975,000	38.22	1.38	38.22

Source: Primary Data Source, processed (2025)

The way to legalize a tobacco farming business can be carried out in the following calculation stages.

To calculate the equation of the cost and profit of farming can be written with the following formula:

$$\pi = TR - TC$$

Description:

π = Profit (Rp)

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

Based on the results of the calculation of income, production costs, and net profit in the three sample villages (Bungbaruh, Bangkes, and Pamoroh), it can be seen that there is a variation in profits between the types of tobacco varieties that are cultivated. In paddy tobacco, the Opot variety provides the highest profit with a net profit of IDR 16,790,000, followed by the Melateh Tompang variety of IDR 11,710,000, while the Prancak 95 variety only produces IDR 7,015,000. These findings show that the Opot variety is more efficient in generating greater profits than the other two varieties in the Kadur district.

For tegal tobacco, the Opot variety also showed the highest profit of IDR 20,465,000, followed by the Melateh Tompang variety with a profit of IDR 17,975,000, and the Prancak 95 variety of IDR 10,355,000. This indicates that Opot is consistently superior in providing greater profits, with a significant profit difference compared to Prancak 95.

For mountain tobacco, the largest net profit was obtained from the Melateh Tompang and Opot varieties, with a value of IDR 17,975,000 and IDR 16,225,000, respectively, while the Prancak 95 variety only produced IDR 14,582,500. This condition shows that although Prancak 95 has a relatively high income, its production cost structure is larger, thus reducing the profit level.

According to Nur Halifa *et al* (2007), it is established that tobacco productivity is greatly influenced by the suitability of varieties to land conditions, especially in mountain and rice field tobacco systems. This is also in accordance with the results of this study. In general, the results of this analysis show that the Opot and Melateh Tompang varieties are more profitable than Prancak 95. The profit advantage in both varieties can be the main consideration for farmers in determining the choice of varieties to be cultivated. In addition, the difference in profits between villages also shows the existence of other external factors, such as land suitability, cultivation techniques, and efficiency in the use of production inputs that affect the final results of farming.

3.2.3. Calculating the Profit Rate

To find out the profit level from calculating the Profit Rate, it can be calculated with the formula

Profit Rate (%) = $\frac{\text{Keuntungan}}{\text{Biaya Produksi}} x\ 100\%$

- Net Profit = Total Revenue – Total Production Cost
- Total Revenue (TR) = Selling price × Number of products produced
- Total Production Cost (TC) = Sum of fixed costs and variable costs

Tobacco Field

$$\text{Profit Rate (\%) Varietas Prancak 95} = \frac{7{,}015{,}000}{48{,}985{,}000} x\ 100\% = 14.32\ \%$$

$$\text{Profit Rate (\%) varietas Opot} = \frac{16{,}790{,}000}{46{,}210{,}000} x\ 100\% = 36.33\ \%$$

$$\text{Profit Rate (\%) varietas Melateh Tompang} = \frac{11{,}710{,}000}{48{,}290{,}000} x\ 100\% = 24.25\ \%$$

Tobacco Field

$$\text{Profit Rate (\%) Varietas Prancak 95} = \frac{10.355.000}{49.645.000} x\ 100\% = 20.86\ \%$$

$$\text{Profit Rate (\%) varietas Opot} = \frac{20.465{,}000}{49.535.000} x\ 100\% = 41.31\ \%$$

$$\text{Profit Rate (\%) varietas Melateh Tompang} = \frac{17.975.000}{47.025.000} x\ 100\% = 38.22\ \%$$

Mountain tobacco

$$\text{Profit Rate (\%) Varietas Prancak 95} = \frac{14.582.500}{49.417.500} x\ 100\% = 29.51\ \%$$

$$\text{Profit Rate (\%) varietas Opot} = \frac{16.225{,}000}{46.775.000} x\ 100\% = 34.68\ \%$$

$$\text{Profit Rate (\%) varietas Melateh Tompang} = \frac{17.975.000}{47.025.000} x\ 100\% = 38.224\ \%$$

According to Adya Restina Prameswari (2023) [2], the difference in the profit level of tobacco farming is influenced by variations in land quality, farmers' experience, and the level of use of production inputs. Varieties that are able to produce more uniform leaf quality and meet market standards tend to obtain higher selling prices, thus providing greater profits for farmers. This also supports the results of this study, based on existing data can be explained in the field of tobacco varieties. Opot is the most profitable variety of tobacco. The net profit obtained reached Rp. 16,790,000 with a profit rate of 36.33%. This figure is higher than Melateh Tompang Rp. 11,710,000 with a Profit Rate of 24.25%, for the variety Prancak 95 only makes Rp. 7,015,000 with a Profit Rate of 14.32%. This shows that farmers in Bungbaruh benefit more by choosing Opot, because production costs are relatively efficient and sales yields are higher.

The Profit Rate in Bangkes village, the Opot variety is again the highest with a profit of IDR 20,465,000 or a profit rate of 41.31%, followed by Melateh Tompang with IDR 17,975,000 with a profit rate of 38.22%, while for the Prancak 95 variety it is only IDR 10,355,000 with a Profit Rate of 20.86%. The data above shows that Opot and Melateh Tompang are the choice of varieties that are more profitable than Prancak 95.

For mountain tobacco, the results are slightly different. The Melateh Tompang variety is actually the most superior, with a profit of IDR 17,975,000 with a Profit Rate of 38.22%, while the Opot variety still gives the second highest profit of IDR 16,225,000 with a Profit Rate of 34.69%. The Prancak 95 variety in this village shows better performance than other villages, but it is still at the bottom among the Melateh tompang and OPot varieties, with a profit of IDR 14,5825,000 with a Profit Rate percentage of 29.51%. This indicates that the suitability of the variety with the local environmental conditions plays a big role in determining the level of profit.

The above overview can be concluded that of the three types of tobacco studied, it is clear that the Opot variety excels in rice fields and tegal fields, with stable advantages, and for the Melateh Tompang variety, it is better in mountain tobacco and remains competitive in tegal tobacco. Although still generating profits, it remains consistently in the lowest position of the three types of land.

3.2.4. Calculating the Feasibility of Tobacco Farming

The feasibility analysis of the Madura tobacco business in Kadur sub-district uses the R/C Ratio Analysis, which is achieved by comparing farming revenues with the total cost of tobacco farming, which is expressed with the following equation:

$$R/C\ Ratio = \frac{TR}{TC}$$

Description:
R/C = Acceptance Price
TR = Total Receipts
TC = Total Cost

The calculation of R/C Ratio (Revenue-Cost Ratio) is used to determine the level of efficiency of tobacco farming in various varieties grown in three types of research tobacco, namely rice field tobacco, tegal tobacco and mountain tobacco In general, the R/C Ratio value for all varieties in the three villages shows a number above 1, which means that tobacco farming is still feasible to be cultivated because every

cost incurred can provide greater revenue.

In rice tobacco, the Opot variety obtained the highest R/C Ratio of 1.36, followed by Melateh Tompang of 1.24, while the Prancak 95 variety only reached 1.14. This shows that the Opot variety is more efficient in the use of production costs, so that it provides relatively greater profits.

In hard tobacco, the same pattern is also seen. The Opot variety produced the highest R/C Ratio of 1.41, followed by Melateh Tompang at 1.38, and Prancak 95 with a value of 1.21. These results reinforce previous findings that the Opot variety consistently has better efficiency than other varieties. Meanwhile, in mountain tobacco, the Melateh Tompang variety showed the highest R/C Ratio of 1.38, slightly superior to the Opot variety of 1.35, and the Prancak 95 variety with a value of 1.30. This condition shows that in the Pamoroh area, Melateh Tompang can compete closely with Opot in terms of farming efficiency.

According to A Nurfadliyah *et al* (2025) [1] said that although tobacco prices tend to fluctuate, Madura tobacco farming still shows stable financial efficiency. This condition is influenced by the ability of farmers to adjust the use of production inputs and relatively high technical efficiency, so that farming profits can still be maintained, this is in line with the results of the research Overall, the results of the analysis show that the Opot tend to be a variety with the best economic performance in two villages (Bungbaruh and Bangkes), while the Melateh Tompang Superior in Tobacco Mountain. As for the varieties, Prancak 95. Although it still provides advantages, the relatively low R/C Ratio value shows that this variety is less efficient than the other two varieties.

3.2.5. Calculating the Profitability of a Tobacco Farming Business

The Profitability Analysis of Farming Businesses in Pamekasan Regency can be measured using *Return On Investment* (ROI). The formula *for Return On Investment* (ROI) is as follows (Soeharto, 2001).

$$Return\ Of\ Investment \text{ (ROI)} = \frac{\text{Keuntungan}}{\text{Biaya Produksi}} \ x\ 100\%$$

Description:

- If the *Return On Investment* (ROI) is >50%, then the profitability level in tobacco farming is high, or the profit level is high.
- If the *Return* On *Investment* (ROI) is <50%, then the profitability level in tobacco farming is low, or the profit level is low.

Profitability analysis or Return on Investment (ROI) is used to measure the rate of return on profit to the total costs incurred in tobacco farming. The higher the ROI value, the greater the profit obtained compared to the production costs incurred. The results of the calculation of the profitability of farming businesses in the Kadur sub- district can be seen in the graph below.

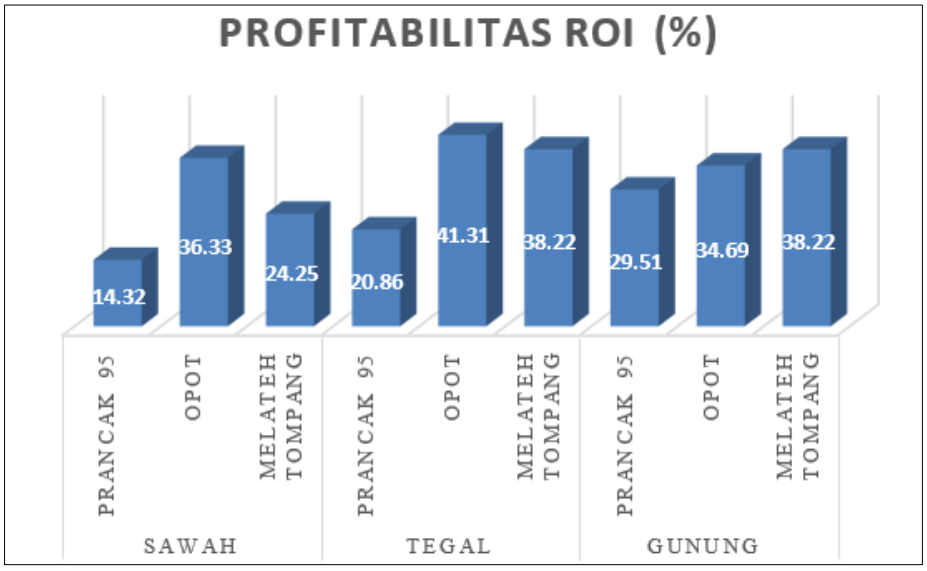

Fig 1: Profitability Graph of Tobacco Varieties Farming in Kadur District

In paddy tobacco, the highest level of profitability was obtained from the Opot variety of 36%, followed by the Melateh Tompang variety with a value of 24%, while the Prancak 95 variety only reached 14%. This shows that the Opot variety is financially superior to the other two varieties, while Prancak 95 provides a relatively low profit.

In Tegal Tobacco, the Opot variety again showed the highest Return on Investment (ROI) value of 41%, followed by the Melateh Tompang variety at 38%, and the Prancak 95 variety with 21%. These results show that Opot consistently provides greater profits than the costs incurred, and its advantages are quite significant compared to the Prancak 95 variety.

Meanwhile, in Mountain Tobacco, the highest Return on Investment (ROI) value was obtained from the Melateh Tompang variety of 38%, slightly higher than the Opot variety with 35%, while the Prancak 95 variety produced an ROI of 30%. Thus, in this region, Melateh Tompang is relatively superior in providing a return on capital compared to the other two varieties.

According to, the largest cost component comes from labor. The dominance of labor costs has direct implications for the total cost structure and is a determining factor in the level of profit and Return on Investment (ROI) of tobacco farming, especially in labor-intensive commodities such as Madura

tobacco. Several studies on tobacco farming in Madura also noted that the largest cost component is labor; The contribution of high labor costs reduces total costs and determines the level of profit/ROI of farming. Therefore, varieties that demand more efficient labor (e.g., maintenance periods, easy harvesting) tend to produce higher ROI this is in line with the results of this study, because, as sA general analysis, the result of the analysis, Return on Investment (ROI), shows that the variety Opot and Melateh Tompang has higher profitability compared to the variety Prancak 95. The consistency of the high ROI value in the two varieties indicates that farmers are advised to cultivate Opot and Melateh Tompang because they can provide a better rate of return on capital.

4. Conclusions and Suggestions

4.1. Conclusion

The results of this study show that the Opot variety has the advantageous value of the malateh tompang and Prancak 5 varieties. This variety records the highest profit rate (34–41%) and the highest R/C Ratio (1.34–1.41), making it the most efficient and profitable variety. The Melateh Tompang variety occupies the second position with a profit rate of 24–38% and an R/C Ratio of 1.24–
1.38. Even though it is under Opot, this variety still provides good and consistent profits. The Prancak 95 variety has the lowest profitability with a profit rate of 14–29% and an R/C Ratio of 1.14–1.29, making it less efficient than the other two varieties. Overall, the order of profitability is consistent across all varieties, namely Opot is larger than Melateh Tompang and larger than Prancak 95. All varieties are worth cultivating (R/C Ratio > 1), but Opot is the most recommended variety for Madura tobacco farmers

4.2. Suggestions

Farmers need to carry out production cost management strategies, for example, by using more efficient fertilizers and pesticides and applying modern cultivation techniques, so that net profits can be more optimal, and farmers not only consider selling prices and leaf quality, but also pay attention to the resilience of varieties to reduce the risk of losses due to pest and disease attacks.

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