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DENDROBIUM ORCHID DECORATIVE PLANT BUSINESS

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ABSTRACT

Horticultural crop, especially orchids, have quite high economic value with good business prospects. Nevertheless, the sales of orchid in Kebun Anggrek Nugroho (Nugroho's Orchid Farm) experienced some fluctuation and tend to drop during COVID-19 pandemic. This condition has impact on business revenue, which will then affect the sustainability. The objectives of this research are: (1) Analyse cost structure of orchid plant growing business; (2) Analyse the income; (3) Analyse the business according to financial criteria. The data source is both primary (observation and interviews) and secondary (literature review). Microsoft Office Excel was used for processing quantitative data. Analytical method that was being used were business cost structure analysis, revenue and income analysis, B/C ratio, Break Even Point (BEP), and Payback Period (PP). The result showed that: (1) Kebun Anggrek Nugroho spent more on variable cost than fixed cost with 97,38% to 2,62% ratio; (2) The operating income earned is IDR 241.873.190 per production period; (3) The B/C ratio obtained is 1,16 which means the business is profitable. The production volume and selling price are greater than BEP value, also indicated that the business is profitable. The PP value is 0,31 meant that a return on capital will be gained within 3 months 22 days.

Keywords: *cost structure; income; business analysis; orchid*

INTRODUCTION

The horticulture subsector consists of commodity such as fruits, vegetables, ornamental plants, and medicinal plants. Among all that, ornamental plants are horticulture commodity that have quite high economic value with bright business prospects and opportunity for development because the price is quite stable and ornamental plants have loyal to fanatical consumer. One type of ornamental plants that is quite widely cultivated and has beautiful flowers is the orchid.

Gunawan (2007) stated that orchid plants have at least two

benefits, namely ecologically and economically. Ecologically, orchids provide main habitat for certain animals, such as ants and termites. Economically, orchids are used as ornamental plants because of the beauty of its flower with alluring colours. This leads people to take the chance of orchid related business. Moreover, orchid related business does not require large area of lands, unlike food crops. Nevertheless, orchid related business requires a more skilled workforce (Diatmika et al., 2016).

The products of *Kebun Anggrek Nugroho* are orchids from genus Dendrobium sp. which is sold in 15 cm pots. The orchids sold in different stages of growth, started from the young plants to the mature ones, both those that have spike, knop, or those that have flowered. The price set is the same for every orchid in pot no matter what stage the orchid grows, which is IDR 30.000 each pot.

Table 1 Orchid Sales in *Kebun Anggrek Nugroho* (October 2021 to September 2022)

Year	Month	Sales (pot)
2021	October	2.870
	November	2.795
	December	2.342
2022	January	2.320
	February	2.775
	March	3.310
	April	3.406
	May	3.764
	June	2.296
	July	2.110
	August	1.853
	September	1.664
Total Sales (pot/year)		**31.505**

Source : *Kebun Anggrek Nugroho* (2022), processed

Orchid sales contain three production period of different orchids. Those periods are July 2021-February 2022 with production volume of 10.000 pots, November 2021-June 2022 with 15.000 pots, and April-November 2022 with 10.000 pots. *Kebun Anggrek Nugroho* begins selling when the plants three months after seed planting phase until eight months when the plants with flowers in full bloom. It is also important to understand cost structure of the business, so that the company able consider the cost allocation to create maximum profit. Therefore, it is necessary to analyse the structure of costs and income to find out the costs that have been incurred and how much income has been achieved.

The purposes of this research are:

a. To analyse cost structure of orchid plant growing business at *Kebun Anggrek Nugroho*;

b. To analyse income of orchid plant growing business at *Kebun Anggrek Nugroho*;
c. To analyse the business according financial criteria, including to B/C Ratio, Break Even Point (BEP), and Payback Period (PP) methods in orchid plant growing business at *Kebun Anggrek Nugroho.*

Theoretical Underpinning

Horticulture is one of the agricultural subsectors that has the potential to make major contribution to economic development and plays an important role as the source of farmers' income, trade, and employment (Wahyudi, 2020:1).

Hartati (2014) in Shidiqy (2019) stated that orchids are very prospective as ornamental plants with high economic value for its flowers' attractive form and colour, also high durability. Not only domestic, the uniqueness of orchid also attracts a lot of ornamental plant enthusiasts overseas. Fandani and Nengahkorja (2018) wrote about high value of orchids that made collectors and businessmen come for this plant because of the diversity of its flowers and its attractiveness to be put as collection.

Novianto (2012) hold about the economic improvement that brought out the needs for aesthetics satisfaction became part of daily life style, and orchids served as one of the most renowned commodities to meet those needs. This condition caused the demand for orchids keep increasing. As the result, production capacity and quality by orchids farmer also need to continuously improved. Production capacity will determine level of income or profit earned by farmer or businessmen.

According to Yanti et al. (2018), escalation of demand for orchids motivated ornamental plants farmer to keep increasing their production and expand the harvest area. The wider and tighter business competition in the field of ornamental plants, especially orchids, pushed companies to be able to highlight their excellence in order to attract consumers.

RESEARCH METHOD

The research was conducted at *Kebun Anggrek Nugroho,* at South

Tangerang City of Banten Province. The location chosen by purposive sampling. The research lasted for two months, starting from August to September 2022. The type of data used in this research is quantitative data obtained through descriptive analysis covering the business activities of growing orchid plants in the Nugroho Orchid Garden.

Sources of data in research are primary data and secondary data. Primary data was obtained through direct observation in the field and direct interviews with *Kebun Anggrek Nugroho* part. While secondary data is complementary data obtained from various related institutions, literature studies, previous research, as well as data or documents owned by *Kebun Anggrek Nugroho*. Data collection methods used in this research consisted of interviews, observation, and literature study. The quantitative data obtained includes production costs, sales volume, receipts, prices, and other. These data then processed with the help of the Microsoft Office Excel software program. Data analysis was carried out to determine the cost structure, revenue, B/C Ratio, Break Even Point (BEP), and Payback Period (PP) of *Kebun Anggrek Nugroho*.

Cost Structure Analysis: Referring to Suratiyah (2008), the formula for calculating depreciation using the straight-line method is as follows:

$$Depreciation = \frac{Nb - Ns}{n}$$

Note

Nb : Buying price of an asset (IDR)

Ns : Residual value (IDR)

N : Useful Life of an Asset (year)

The total cost of a business consists of fixed costs and variable costs. Fixed costs in the *Kebun Anggrek Nugroho* orchid business are in the form of land and building taxes and depreciation costs. As for variable costs, namely in the form of wages for labour, seeds, pots, planting media, electricity fee, water, and pesticides. Referring to Suratiyah (2015) in Saadudin et al. (2017), the total costs are obtained by the following formula:

$$TBTA = BTTA + BVTA$$

Note

TBTA: Total cost of orchid business (IDR)

BTTA: Total fixed cost (IDR)

BVTA: Total variable cost (IDR)

After identifying the production costs of ornamental orchid plants at the *Kebun Anggrek Nugroho*, the percentage of each cost component is calculated. Referring to Suripatty (2011) to find the percentage of each cost structure using the following formula:

$$SBTA = \frac{BTTA_x \; or \; BVTA_y}{TBTA} \times 100\%$$

Note

SBTA: Percentage of each cost structure of orchid business (%)

$BTTA_x$: Value of each fixed cost x component of orchid business (IDR)

$BVTA_y$: Value of each variable cost x component of orchid business (IDR)

TBTA: Total cost of orchid business (IDR)

Business Income Analysis: Referring to Soekartawi (2002) in Nurjaman et al. (2018) business income analysis is used to determine the level of income earned by the ornamental plant business of the *Kebun Anggrek Nugroho*. Before calculating the amount of business income, it is necessary to calculate business revenue first. The income from the orchid ornamental plant business is all the results obtained from product sales, namely the multiplication of the number of ornamental orchid plants sold by the selling price of the orchid ornamental plants. The way to calculate the amount of revenue obtained is as follows:

$$TPTA = HJTA \times y$$

Note

TPTA: Total revenue of orchid plants business (IDR)

HJTA: Selling price per orchid pot (IDR)

y : Selling volume (pot)

Once the total amount of business revenue is known, then the calculation of income analysis is carried out. Orchid ornamental plant business income is obtained from the difference between the total revenue and the total costs incurred during the production process. The way to calculate the level of income earned is to use the calculation formula as follows:

$$PUTA = TPTA - TBTA$$

Note

PUTA: Income of orchid plants business (IDR)

TPTA: Total revenue of orchid plants business (IDR)

TBTA: Total cost of orchid plants business (IDR)

B/C Ratio Analysis: Referring to Soekartawi (2016), the B/C Ratio is a comparative calculation between the income earned and the total costs incurred. A business can be said to be feasible and provide benefits if the value of the resulting B/C Ratio is greater than zero. The greater the value of the B/C Ratio produced, the greater the benefits derived from the business. The following is the formula used in calculating the B/C Ratio:

$$B/C\ Ratio = \frac{PUTA}{TBTA}$$

Note

PUTA: Income of orchid plants business (IDR)

TBTA: Total cost of orchid plants business (IDR)

Break Even Point Analysis (BEP): Break Even Point Analysis (BEP) is used to see at what volume and price level a business experiences a breakeven point or does not make a profit and does not experience a loss. Referring to Suratiyah (2006) in Fyka et al. (2019), there are two types of BEP calculations, namely volume BEP and price BEP, with the assumption that the total production calculated is the total production sold out or the sales volume of orchid plants. The formula used in calculating the volume BEP and price BEP is as follows:

a. Break Even Point Analysis (BEP) Volume

$$BEP\ Volume = \frac{TBTA}{HJTA}$$

b. Break Even Point Analysis (BEP) Price

$$BEP\ Price = \frac{TBTA}{y}$$

Note:

TBTA: Total cost of orchid plants business (IDR)

HJTA: Selling price per orchid pot (IDR/pot)

y : Selling volume (pot)

Payback Period (PP) Analysis: Referring to Jakfar (2012), payback period (PP) analysis is used to measure the time period or find out how fast it takes to return a business investment. Calculation of the payback period can be formulated as follows:

$$Payback\ Period = \frac{BITA}{PUTA} \times 1\ year$$

Note

BITA: investmet cost of orchid plants business

PUTA: Income of orchid plants business (IDR)

RESULT AND DISCUSSION

Cost Structure of Orchid Plants Business: The cost structure at the *Kebun Anggrek Nugroho* showed the expenses incurred from the use of production inputs during the process of running an orchid growing business. Calculations are made based on one production period, namely for 8 months (November 2021 to June 2022). The selection of this time period is adjusted to the fact that most of the ornamental orchid plants are sold out when the plants enter the flowering phase, which is 8 months after being transferred from the seedling phase. Cost classification for orchids is calculated by differentiating the cost components into fixed costs and variable costs.

Investment Cost: Investment costs are costs that are generally incurred at the beginning of business activities. Investment costs generally have a fairly large amount and aim to obtain benefits in the future while running the business. This expenses is used to purchase company assets such as land, buildings, installation of plant racks, support poles, para-nets, water engines, steam engines, and production equipment such as wheelbarrows, hoses, water drums, shears, and so on. All components of the investment cost are depreciated every year with a different economic life for each component invested. The economic life of each component invested is determined based on the level of ability of a component to be used properly and still have a good function to support the operation of the business.

Fixed Cost: Fixed costs are costs incurred by companies in carrying out production activities that are relatively fixed in number, regardless of the amount of production produced. Fixed costs include depreciation costs that need to be taken into account. Fixed costs incurred by *Kebun Anggrek Nugroho* consist of land and building tax and depreciation costs. The depreciation costs consist of depreciation costs for

buildings, installation of plant racks and production equipment. The results of calculating fixed costs for the production of Nugroho Orchid Garden orchids can be seen in Table 2.

As shown in Table 2, the cost incurred by *Kebun Anggrek Nugroho* per production period was IDR 5.445.810. Land and building tax are costs that must be incurred annually by companies for land and buildings used in production activities and are privately owned. The taxes that must be paid annually for a building and land area of 4,000 m2 is IDR 6,629,032. Because only fifth of the total is reviewed, the tax that must be paid by the *Kebun Anggrek Nugroho* per year is IDR 1,325,806. This amount then converted to IDR 883,871 per period November 2021 to June 2022.

The depreciation costs incurred by the *Kebun Anggrek Nugroho* during the period November 2021 to June 2022 are IDR 4,561,939 per production period. The amount of this cost is the total of depreciation costs which consist of depreciation costs for buildings, installation of plant racks, and production equipment. For the installation of orchid plant racks at the *Kebun Anggrek Nugroho*, they are made of mild steel and wire equipped with support poles and para-nets to provide shade for the orchid plants. The plant racks have a length of about 12-22 meters with a width of 1 meter which are arranged in each production area. The difference in the length of the plant rack is due to adjusting the size of the available land.

Meanwhile, the cost of depreciating production equipment at the company includes lamps as a means of lighting; water machines, steam engines, hoses, sprayer nozzles, and water drums for watering, fertilizing and spraying pesticides; wheelbarrows for carrying plants to be purchased and for placing planting media during planting activities and adding planting media; branch shears and buckets for weeding activities on orchids; basket box for the process of transferring seeds from cardboard boxes to each pot before planting; plastic chairs to facilitate planting activities and adding planting media; and gloves as PPE.

Variable Cost: Variable costs are costs incurred by companies in carrying out production activities,

where the size of the variable costs varies in proportion to changes in production volume. The variable costs incurred consist of the cost of buying orchid seeds, planting media, clay pots, fertilizer, pesticides, also the cost of labour, electricity and water, internet quota. The results of the calculation of variable costs in the Nugroho Orchid Garden orchid business can be seen in Table 2.

Based on Table 2, the amount of variable costs incurred by the *Kebun Anggrek Nugroho* is IDR 202,681,000 per production period. The highest variable cost component is occupied by the purchase cost of orchid seeds which are the main input needed in production activities. The costs incurred by the *Kebun Anggrek Nugroho* for the purchase of 15,000 orchid seeds amounted to IDR 150,000,000 per production period. The seeds used are imported from Thailand, so there is a risk that the seeds will arrive withered, rotten, or dead due to the long quarantine and shipping process, but this rarely happens. If the seeds received are wilted, rotten, or dead, the company will make a complaint to the supplier, and will be given compensation in the form of seeds or a refund. In this regard, it can be interpreted that the risk of seeds is under control so that all of these seeds can be grown and sold.

Internet quota fees are the lowest variable cost component with a total fee of IDR 50,000 per month with 15 GB internet quota. Because only fifth of the total is reviewed, the internet quota fee that is issued is IDR 10,000 per month which is converted to IDR 80,000 per period. The internet quota fee is used to support promotional activities, communicate with consumers, and input orders with suppliers through the *Whatsapp* application.

Total Cost and Cost Structure: Total cost is the sum of cost incurred by the company, which consists of fixed costs and variable costs. Then the results of calculating these costs are explained in the detailed business cost structure of each component of the costs incurred by the company in carrying out its production activities. With the total cost and cost structure, the company can easily find out and measure the total amount of costs incurred and how profitable the business is being

run. In addition, the cost structure can also be used as a reference for companies in identifying ways to minimize the cost components incurred in order to maximize business profits.

The fixed costs incurred consist of two cost components, namely the land and building tax and the depreciation fee. While the variable costs consist of eight cost components, namely the cost of buying orchid seeds, planting media, clay pots, fertilizer, pesticides, also the cost of labour, electricity and water, internet quota. The results of the detailed calculation of the total cost and cost structure of the production activities of the *Kebun Anggrek Nugroho* can be seen in Table 2.

Based on Table 2, it can be seen that in carrying out business operations, variable costs have a much higher percentage rate than fixed costs. The low percentage level of fixed costs is due to the only cost components incurred in the form of tax and depreciation costs. *Kebun Anggrek Nugroho* uses privately owned land, therefore the costs incurred are not as big as the cost for renting land. *Kebun Anggrek Nugroho* also does not provide delivery services for orchids, so the company does not need vehicle to support its operational activities.

Table 2. Total cost and cost structure spent by *Kebun Anggrek Nugroho* (November 2021 - June 2022)

No	Component	Value (IDR)	(%)
Fixed Cost			
1	Land and building tax	883.871	0,42
2	Depreciation	4.561.939	2,19
Total Fixed Cost		*5.445.810*	*2,62*
Variable Cost			
1	Orchid seeds	150.000.000	72,07
2	Planting media	4.750.000	2,28
3	Clay pots	16.500.000	7,93
4	Fertilizer	975.000	0,47
5	Pesticides	2.376.000	1,14
6	Labour	27.200.000	13,07
7	Electricity and water	800.000	0,38
8	Internet quota	80.000	0,04
Total Variable Cost		*202.681.000*	*97,38*
Total Cost		**208.126.810**	**100**

Source: Primary data, processed

The cost component that has the largest percentage in orchid production activities is the cost of buying orchid seeds, which is IDR 150,000,000 (72.07%). The high percentage level is due to the fact that orchid seeds are the main input or raw material for business activities. The effort that can be done by the *Kebun Anggrek Nugroho* in reducing the cost

is by using splitting orchid seeds obtained from orchid breeders. However, there are differences in the quality of the products produced from the two seeds, such as the leaves and stem diameter of the orchid plants using splitting seeds, which are not as dense and as large as the orchid plants using imported seeds. Based on the differences in the quality of the products produced, it is necessary to separate them and place them in different plant rack installations.

In addition to using splitting seeds to reduce the cost of buying orchid seeds, *Kebun Anggrek Nugroho* can also reduce the cost of buying clay pots. Table 2 shows that the cost of purchasing clay pots is the third largest cost component, namely IDR 16,500,000 (7.93%). This cost can be reduced by reusing pots that are not brought by consumers when purchasing orchid. *Kebun Anggrek Nugroho* only needs to burn the pots that have been used for cultivation before. Burning the pot aims to remove the moss attached to the pot so that the pot looks like new again, as well as to remove germs caused by the moss adhering to the pot so that the orchid plants do not rot easily and are attacked by pests and diseases. The pot burning process takes approximately one full day, which is done manually using wood and tree branches that are obtained free of charge from teak trees that are on the owner's land outside the orchid planting area.

Based on the results of the explanation above regarding efforts to reduce the amount of production costs incurred by *Kebun Anggrek Nugroho*, it is hoped that the two points above, namely using splitting orchid seeds and reusing burnt pots, can reduce production costs incurred. If the company can minimize production costs, this will certainly affect the level of revenue and income that will be obtained by the *Kebun Anggrek Nugroho*.

Revenue Analysis: Business revenue is the result of multiplying the total sales of ornamental orchid plants with the selling price. The revenue obtained by *Kebun Anggrek Nugroho* only comes from the sale of *Dendrobium sp.* orchids, with details of the sales shown in Table 3.

Table 3. Total orchid plants sales in *Kebun Anggrek Nugroho* (November 2021 - June 2022)

Year	Month	Sales (pot)
2021	November	-
	Desember	-
2022	Januari	1.025
	Februari	2.520
	Maret	3.310
	April	3.406
	Mei	3.764
	Juni	975
Total Sales (pot/period)		**15.000**

Source: Primary data, processed

Table 3 showed that the total sales of orchid plants in one production period were 15,000 pots. It was assumed to be all sold out, equivalent to the production volume of 15,000 pots. This is based on the fact that the company uses quality seeds and there is a guarantee of compensation for the seeds, so that it can be said that all the seeds can be grown until the orchid plants are sold.

Based on Table 3, it can be seen that consumers do not only buy orchids during the flowering phase, but there are also consumers who buy orchids during the earlier phase, that is, when the plants are three months old after the seed transfer phase. This shows that there are differences in consumer preferences in purchasing orchids at the *Kebun Anggrek Nugroho*, which can generally be divided into 3 stages, namely the level of young orchids, budding orchids, and flowering orchids.

Young orchid was being sold from January to April 2022, while budding orchids stages happened from April to May 2022 and flowering stage on May-to June 2022. The calculation of revenue *Kebun Anggrek Nugroho* in one production period can be seen in Table 4.

Table 4. Business revenue of *Kebun Anggrek Nugroho* (November 2021 - June 2022)

Description	Sales Vol (pot)	Selling Price (IDR/ pot)	Revenue (IDR/ period)
Orchid *Dendrobium sp.*	15.000	30.000	450.000.000

Source: Primary data, processed

Based on Table 4, *Kebun Anggrek Nugroho's* total revenue from the orchid plant business is IDR 450,000,000 per production period, with a total sales volume of 15,000 pots and a selling price of IDR 30,000 each pot. The selling price increased in January 2022, from the previous IDR 28,000 per pot to IDR 30,000 per pot. The increase was caused by the increase in cost of pesticides, so the company decided to also increase the selling price of the orchid plants by IDR 2,000 per pot. Sales of orchid plants at *Kebun Anggrek Nugroho*

fluctuate every month. These fluctuations are usually influenced by the season and celebrations of holidays, as shown in Table 5 that the highest sales will be in May 2022 which coincides with the holy month of Ramadan and Eid al-Fitr celebration.

Income Analysis: Operating income is the gap between the total revenue received by *Kebun Anggrek Nugroho* and the total costs incurred in producing orchids. The results of calculating the operating income of *Kebun Anggrek Nugroho* can be seen in Table 5.

Table 5. Operating income of *Kebun Anggrek Nugroho* (November 2021 - June 2022)

Component	Value (IDR)
Total revenue (IDR)	450.000.000
Total cost (IDR)	208.126.810
Operating Income	**241.873.190**

Source: Primary data, processed

Based on Table 5, it can be seen that the operating income of orchid plants obtained by *Kebun Anggrek Nugroho* is IDR 241,873,190 per production period. The results of operating income in Table 5 show that the results obtained have a positive value, which means that the orchid business run by *Kebun Anggrek Nugroho* is profitable. The percentage of profit earned in one production period is 116% of the total production cost. The percentage of profits obtained is even more than double the production costs. The income earned is used as a source of funds to finance the ongoing orchid production activities and to meet investment needs.

The results of this study are in line with the results of Sitinjak (2021), which states that the operating income obtained from the sale of Dendrobium orchids at the Nagori Tiga Dolok Orchid Business is IDR 51,677,684 per year with the sale of 3,200 pots of orchids and a selling price of IDR 68,000 per pot or with a profit percentage of 31% of the total production costs. Dendrobium orchids in the Nagori Tiga Dolok Orchid Business have a selling price that is two times higher than the selling price of the *Kebun Anggrek Nugroho.* Even with a selling price of IDR 68,000/pot, Dendrobium orchids are the type of orchid with the best sales compared to the other three types of orchids cultivated in the Nagori Tiga Dolok Orchid Business.

The results of Fadhilah (2014) showed that the income earned by Mitra Permata Anggrek Farmers Group is IDR 41,595,315 per year, with a total sale of 8,640 pots of orchid plants and with selling prices that vary from IDR 10,000 to IDR 30,000 per pot. The difference in selling prices is influenced by the quality of the product and consumer groups. Meanwhile, the *Kebun Anggrek Nugroho* sets the same selling price for all orchid plants and all consumer groups. Whereas, the difference in selling prices for orchids will allow the company's income to increase.

Orchid Business Analysis: Business analysis is carried out to determine the level of efficiency of the orchid business run by the *Kebun Anggrek Nugroho*. The analytical method used in business analysis consists of analysis of B/C Ratio, Break Even Point (BEP), and Payback Period (PP).

B/C Ratio Analysis: B/C Ratio analysis is used to see a comparison between the level of profit or income earned by the *Kebun Anggrek Nugroho* and the total costs incurred in the orchid plant business activities. The calculation of the B/C ratio analysis for the business of the *Kebun Anggrek Nugroho* in one production period can be seen in Table 6.

Table 6. B/C Ratio analysis of *Kebun Anggrek Nugroho* (November 2021 - June 2022)

Component	Value (IDR)
Operating income (IDR)	241.873.190
Total cost (IDR)	208.126.810
B/C *Ratio*	**1,16**

Source: Primary data, processed

Based on Table 6, it can be seen that the B/C Ratio value obtained from the orchid business at the *Kebun Anggrek Nugroho* has reached more than zero. These results are in accordance with the theory put forward by Soekartawi (2016) that a business can be said to be feasible if the B/C ratio is greater than zero. Referring to the quote, it can be said that the business of Orchid Planting at *Kebun Anggrek Nugroho* is feasible to cultivate and develop. The B/C Ratio value obtained is 1.16, which means that for every IDR 1,000,000 of the total production costs incurred, the *Kebun Anggrek Nugroho* will receive benefits or profits of IDR 1,160,000. So, it can also be interpreted that by spending affordable production costs, companies can generate large profits.

The results of this study are in line with the results of Fadhilah's (2014), which showed that the value of the B/C ratio obtained by the Mitra Permata Anggrek Farmers Group was 0.28. Even though the B/C ratio obtained by Fadhilah (2014) is greater than zero, the value is still lower when compared to the B/C ratio value for the orchid business of the *Kebun Anggrek Nugroho*. This is because the production costs incurred by the Mitra Permata Anggrek Farmer Group are quite large due to property rental costs, transportation costs, and packaging costs. In contrast to the Mitra Permata Anggrek Farmers Group, the production costs incurred by *Kebun Anggrek Nugroho* are quite affordable because there are no property rental costs, transportation costs, nor packaging costs.

The results of Sabil (2019) show that the B/C ratio value obtained from the Vanda Douglas orchid farming in Pamulang district is equal to 0.23. This value is still smaller when compared to the *Kebun Anggrek Nugroho*. This is because the production costs incurred by farmers are quite large, especially in land tax and transportation, while the income earned is not too large due to differences in selling prices in consumer groups. These selling prices vary along with the availability of orchids and the amount of market demand, starting from IDR 50,000 to IDR 150,000 per bundle. In addition, the Vanda Douglas orchid also requires a longer growth period and requires a large area of land compared to the Dendrobium orchid, because the Vanda Douglas orchid does not use a pot as a medium, but is planted directly in the ground.

Break Even Point (BEP) Analysis: Break Even Point Analysis (BEP) is a breakeven point where the business of the *Kebun Anggrek Nugroho* does not make a profit nor suffers a loss, or the profit earned is zero. The calculation of the BEP in this study is divided into two, namely BEP volume and BEP price. The calculation of the BEP analysis for the business of the *Kebun Anggrek Nugroho* in one production period can be seen in Table 7.

Table 7. BEP analysis of *Kebun Anggrek Nug-roho* (November 2021 - June 2022)

Component	Value
Total cost (IDR)	208.126.810
Sales volume (Pot)	15.000
Selling price (IDR)	30.000
BEP Volume (Pot)	**6.938**
BEP price (IDR/Pot)	**13.875**

Source: Primary data, processed

Based on Table 7, it can be seen that the orchid plant business at *Kebun Anggrek Nugroho* obtained a volume BEP value of 6,938 pots and a BEP price of IDR 13,875. Under these conditions the business of *Kebun Anggrek Nugroho* experienced a breakeven point, neither making a profit nor experiencing a loss. This shows that *Kebun Anggrek Nugroho* must produce and sell at least 6,938 pots of orchids per production period and with a selling price of not less than IDR 13,875 per pot so that *Kebun Anggrek Nugroho* does not suffer losses.

When compared with the actual situation of the orchid plant business at *Kebun Anggrek Nugroho*, 15,000 pots of orchid plants were sold in one production period. This meant that the total sales were greater than the BEP volume calculation results. This shows that the business of orchid plants at *Kebun Anggrek Nugroho* makes profit, based on the difference between the sales volume of orchid plants and the BEP volume calculation results, namely 8,062 pots.

As for the selling price of orchids set by *Kebun Anggrek Nugroho* is IDR 30,000 per pot, while the BEP price calculation results show that the minimum price that must be set by the company is IDR 13,875 per pot. This showed that the price set by *Kebun Anggrek Nugroho* is greater than the price BEP calculation results. In other words, the orchid plant business provides a profit equal to the price difference set by the company with the price BEP calculation results, which is IDR 16,125 per pot.

Based on the results of a comparison between the acquisition of the BEP value and the actual situation, it can be seen that the profit obtained by *Kebun Anggrek Nugroho* is two times the BEP value. There are several factors that influence this, including the use of quality seeds and the guarantee of compensation for the seeds, so that all seeds can be raised and sold as a whole in proportion to the volume of production. The process of cultivating orchids at

Kebun Anggrek Nugroho is also handled directly by employees who have worked since the company's started operating, so that the skills they have in growing orchid plants are quite reliable. *Kebun Anggrek Nugroho* also has regular customers who buy orchids every month, generally as resellers. The company's efforts to maintain the trust of consumers are by giving bonuses to consumers who regularly buy orchids in large quantities.

Payback Period (PP) Analysis: The payback period (PP) analysis is used to find out how quickly the return on capital that has been issued by *Kebun Anggrek Nugroho* for production activities. PP is calculated by dividing the investment value by the income value, then multiplied by one year. The investment value in this study was generated from the total cost of production facilities used by *Kebun Anggrek Nugroho* in carrying out the business of growing orchids of the genus *Dendrobium sp*. The amount of operating income listed in Table 14 is the conversion result obtained from the 12/8 multiplied by operating income per production period, so that one year's operating income is Rp. 362,809,785. Calculation of PP analysis on the orchid business of *Kebun Anggrek Nugroho* can be seen in Table 8.

Table 8. PP analysis of *Kebun Anggrek Nugroho* (November 2021 - June 2022)

Component	Value
Investment value (IDR/year)	113.531.000
Operating income (IDR/year)	362.809.785
***Payback Period* (PP)**	**0,31 or 3 months 22 days**

Source: Primary data, processed

Based on Table 8, it can be seen that the PP value obtained by *Kebun Anggrek Nugroho* orchid business is 0.31. The PP value indicates that *Kebun Anggrek Nugroho* orchid business will experience a return on capital within 3 months and 22 days. The PP results obtained by *Kebun Anggrek Nugroho* had smaller results when compared to Sabil (2019), namely with the acquisition of a PP value of 5.3. Meanwhile, the results of Fadhilah (2014) showed that the PP value obtained by Mitra Permata Anggrek Farmers Group was 2.91. This value is still greater than the PP value of *Kebun Anggrek Nugroho*.

The greater the PP value generated, the longer the time needed for a business to make a return on

investment. In this regard, the Vanda Douglas orchid farming and the Mitra Permata Farmer Group's Potted Orchid Business will require a longer period of time compared to *Kebun Anggrek Nugroho* in making a return on investment.

CONCLUSION

Based on the description of the discussion in this study, the following conclusions can be drawn:

a. Analysis of the cost structure of the orchid growing business at *Kebun Anggrek Nugroho* shows that variable costs have a higher percentage level than fixed costs, in a ratio of 97.38% for variable costs to 2.62% for fixed costs. The biggest cost component in orchid production activities is the cost of buying orchid seeds (72.07%), meanwhile the smallest cost component is internet quota fees (0.04%).
b. Analysis of business income earned by *Kebun Anggrek Nugroho* are as follows:
    i. The revenue from the orchid growing business received by *Kebun Anggrek Nugroho* in one production period amounted to IDR 450,000,000, with a total sales volume of 15,000 pots and a selling price of IDR 30,000 per each pot.
    ii. The operating income earned by *Kebun Anggrek Nugroho* from the orchid growing business is IDR 241,873,190 per production period.
c. The calculation result of the analysis of the of orchid plants business at *Kebun Anggrek Nugroho,* are as follows:
    i. B/C Ratio of 1,6 indicating that the business at *Kebun Anggrek Nugroho* is feasible.
    ii. BEP volume value is 6.938 pots and BEP price value is IDR 13.875. The sales volume and the selling price at *Kebun Anggrek Nugroho* are already higher than the results of the calculation of the BEP value, so it can be interpreted that the business at *Kebun Anggrek Nugroho* is profitable.
    iii. PP value obtained was 0.31, which means that *Kebun Anggrek Nugroho* will achieve a return on capital within three months and 22 days.

REFERENCES

Badan Pusat Statistik. 2022. *Produksi Tanaman Florikultura (Hias) 2021*. Jakarta.

Badan Pusat Statistik Kota Tangerang Selatan. 2022. *Kota Tangerang Selatan Dalam Angka 2022*. Tangerang Selatan.

Badan Pusat Statistik Provinsi Banten. 2022. *Provinsi Banten Dalam Angka 2022*. Banten.

Fadhilah, Y. (2014). Analisis Kelayakan Usaha Anggrek Pot Mita Permata Anggrek di Kelurahan Pasir Mulya Kota Bogor. [Bachelor's thesis, IPB University]. IPB Repository. http://repository.ipb.ac.id/handle/123456789/74303

Fandani, H. S., & NengahKorja, S. N. M. I. (2018). Keanekaragaman Jenis Anggrek pada Beberapa Penangkaran di Desa Ampera dan Desa Karunia Kecamatan Palolo Kabupaten Sigi. *Jurnal Warta Rimba E-ISSN*, *2579*, 6287.

Fyka, S. A., Limi, M. A., Zani, M., & Salamah, S. (2019). Analisis Potensi dan Kelayakan Usahatani Sistem Integrasi Padi Ternak (Studi Kasus di Desa Silea Jaya Kecamatan Buke Kabupaten Konawe Selatan). *Jurnal Ilmu Dan Teknologi Peternakan Tropis*, *6*(3), 375-381.

Gunawan, L. W. (2007). *Budidaya Tanaman Anggrek Edisi Revisi* (p. 3). Jakarta: Penebar Swadaya.

Jakfar, K. (2012). *Studi Kelayakan Bisnis Edisi Revisi* (p. 101). Jakarta: Kencana.

Nurjaman, T., Soetoro, S., & Yusuf, M. N. (2018). Analisis Biaya, Penerimaan, Pendapatan, dan R/c USAhatani Kacang Tanah (Arachis Hypogaea L) (suatu Kasus di Desa Cintakarya Kecamatan Parigi Kabupaten Pangandaran). *Jurnal Ilmiah Mahasiswa Agroinfo Galuh*, *4*(1), 585-590. DOI: http://dx.doi.org/10.25157/jimag.v4i1.1602

Novianto. (2012). Prospek Pengembangan Usaha Anggrek Berbasis Sumberdaya Lokal. In *Seminar Nasional Anggrek* (pp. 12). Jakarta, Indonesia: Badan Penelitian Tanaman Hias, Puslitbang Hortikultura-Balitbang Pertanian.

Saadudin, D., Rusman, Y., & Pardani, C. (2017). Analisis Biaya, Pendapatan Dan R/C Usahatani Jahe (Zingiber officinale). *Jurnal Ilmiah Mahasiswa Agroinfo Galuh*, *3*(1), 85-90. DOI: http://dx.doi.org/10.25157/jimag.v3i1.216

Sabil, R. A. (2019). Analisis Biaya dan Pendapatan Usahatani Anggrek Vanda Douglas di Kecamatan Pamulang, Kota Tangerang Selatan, Banten (Bachelor's thesis, UIN Syarif Hidayatullah Jakarta). UIN JKT Repository. https://repository.uinjkt.ac.id/

dspace/handle/123456789/58394

Shidiqy, H. A., Wahidah, B. F., & Hayati, N. (2019). Karakterisasi Morfologi Anggrek (Orchidaceae) di Hutan Kecamatan Ngaliyan Semarang. *Al-Hayat: Journal of Biology and Applied Biology*, *1*(2), 94-98. DOI: 10.21580/ah.v1i2.3761

Sitinjak, W. (2021). Analisis Kelayakan Usaha dan Model Pemasaran Tanaman Anggrek Tiga Dolok (Studi Kasus Usaha Anggrek Nagori Tiga Dolok, Kec. Panribuan, Kab. Simalungun). *Menara Ilmu*, 15(2); 110-115. DOI : https://doi.org/10.31869/mi.v15i2.2598

Soekartawi. (2016). *Analisis Usahatani* (p. 88). Jakarta: UI Press

Suratiyah, K. (2008). *Ilmu Usahatani* (p.35). Jakarta: Penebar Swadaya

Suripatty, M. P. (2011). Analisis struktur biaya produksi dan kontribusi pendapatan komoditi kakao (*Theobroma Cacao L*.) di Desa Latu. *Jurnal Agroforestri*, *6*(2), 135-141.

Wahyudi, T. (2020). *Pengelolaan Komoditas Hortikultura Unggulan Berbasis Lingkungan* (p. 1). Nusa Tenggara Barat: Forum Pemuda Aswaja.

Yanti, L. P. N., Suamba, I. K., & Dewi, I. A. L. (2018). Perkembangan Usaha Agribisnis Bunga Anggrek *Vanda* Potong pada Kembang Batur Anggrek *Collection* di Desa Sanur Kaja Denpasar. *Jurnal Agribisnis dan Agrowisata (Journal of Agribusiness and Agritourism)*, 7(1); 101-111.