Recommendation for the Project

If I were hired as the CFO of Bebida Sol, I would not recommend pursuing this project. After analyzing the project's free cash flows, the NPV, IRR, Discounted Payback Period, and Profitability Index all suggest that this project would result in a loss for the firm.

1.Relevant Cash Flows for the Project

a. Consultant's Market Study Cost

The cost of the market study is 5 million pesos. Since this cost has already been incurred and recorded in the income statement, it is a **sunk cost** and is not relevant for the capital budgeting analysis. Sunk costs should not influence the decision of whether to proceed with the project.

b. Potential Rental Value of the Unoccupied Annex

The annex, if not used for the project, could be rented out for 60,000 pesos annually. This represents an **opportunity cost**. For the project analysis, this foregone rental income should be treated as a negative cash flow.

c. Interest Charges

Interest expenses are related to financing decisions, not investment decisions. In capital budgeting, interest is not included in the free cash flow calculation as it is accounted for in the discount rate (WACC). Including it again would result in double-counting.

d. Erosion of Existing Soda Sales

The introduction of Hola-Kola may reduce the sales of Bebida Sol's existing

soda products, causing a potential annual decrease in after-tax cash flows by 800,000 pesos. This reduction represents a **negative cash flow** and should be included in the analysis as it reflects an actual loss in the firm's cash flow.

e. Other Relevant Cash Flows

The working capital for the project consists of three key components: inventory, accounts receivable, and accounts payable. The calculations for each are as follows:

Inventory: 600,000 liters at 1.8 pesos per liter, totaling 1,080,000 pesos.

Accounts Receivable: Based on the annual sales and the average collection period, this amounts to 4,438,356 pesos.

Accounts Payable: Determined by the raw materials costs and the average payment period, which totals 1,278,247 pesos.

When these values are combined, the total working capital requirement is: **1,080,000 + 4,438,356 - 1,278,247 = 4,240,110 pesos**.

This means that an initial outflow of 4,240,110 pesos will be needed to cover working capital at the start of the project.

In addition to working capital, the project involves other key cash flows:

Operational Costs: These include expenses for raw materials, direct labor, and energy.

Overhead Costs: 1% of sales.

Fixed Administrative Expenses: 300,000 pesos.

Depreciation: Although the case mentions straight-line depreciation,

companies typically maximize depreciation early on to benefit from tax savings.

Additionally, the project requires an **initial investment of 50 million pesos** for new equipment, which can be sold after five years for 4 million pesos. Since the equipment will be fully depreciated by the end of Year 5, the sale of the equipment will generate a **taxable capital gain** of 4 million pesos.

2. Project's NPV, IRR, Payback Period, and Profitability Index

NPV Calculation

The formula of NPV is $NPV = -C_0 + \sum_{t=1}^{T} \frac{C_t}{(1+r)^t}$.

Using Excel, the NPV is calculated as: "=NPV(H12,D60:H60)+C60", which results in **NPV = -1,716,061 pesos**. This negative NPV indicates that the project will result in a loss for the firm.

IRR Calculation

With the same method, the formula of IRR is $\sum_{t=0}^{T} \frac{C_t}{(1+IRR)^t} = 0$, and we use the Excel function "=IRR(C60:H60)" to calculate IRR. IRR is **16.86%**, which is less than the WACC 18.2%, expressing that this project cannot cover the cost.

Payback Period Calculation

The formula of Payback Period is as follows:

$$\text{Payback Period} = \text{T} - 1 + \frac{\text{Cumulative Sum}_{t-1}}{\text{Cash Flow}_T}$$

While Discounted Payback Period is like the formula of Payback Period, considering the discounting of money. So we use the Excel function "=IFERROR(COUNTIF(D61:H61,"< "&0&" ")+(-INDIRECT(ADDRESS(61,MATCH(TRUE,D61:H61>0,0)+2))/INDIRECT(ADDRE

SS(60,MATCH(TRUE,D61:H61>0,0)+3))), FALSE)" to calculate the Payback Period and find that Payback Period is **3.41**, showing that this project can get the break-even point at the 3.41 year when ignoring the effect of discounting.

Discounted Payback Period Calculation

Similarly, the Discounted Payback Period is calculated considering the time value of money.

We use "=IFERROR(COUNTIF(D64:H64,"< "&0&" ")+(-INDIRECT(ADDRESS(64,MATCH(TRUE,D64:H64>0,0)+2))/INDIRECT(ADDRESS(63,MATCH(TRUE,D64:H64>0,0)+3))), FALSE)" to calculate Discounted Payback Period, which results in **FALSE**. This means the project will never recover its investment when accounting for the effect of discounting.

Profitability Index Calculation

For the Profitability Index, the formula is $PI = \frac{I+NPV}{I}$.

So we calculate PI by "=(-C64+C66)/(-C64)", and the result is **0.97**, which is less than 1. This also indicates that the project cannot make money.

Conclusion

Based on the analysis of relevant cash flows and key financial metrics (NPV, IRR, Payback Period, Discounted Payback Period, and Profitability Index), I would advise Antonio against pursuing the Hola-Kola project. The project shows negative financial outcomes across all critical evaluation metrics, signaling that it would result in a loss for Bebida Sol.