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Prodi : Manajemen

1. Aliran Kas

$$\begin{aligned} T_0 &: \text{Biaya Investasi + modal akhir} \\ &: -(10.000 + 200) \\ &: -10.200 \end{aligned}$$

$$\begin{aligned} T_1 &: 7000 - 2000 - 250 \\ &: 4.750 \end{aligned}$$

$$\begin{aligned} T_2 &: 7000 - 2000 - 300 \\ &: 4.700 \end{aligned}$$

$$\begin{aligned} T_3 &: 7000 - 2000 - 200 \\ &: 4.800 \end{aligned}$$

$$\begin{aligned} T_4 &: 7000 - 2000 - 0 \\ &: 5000 \end{aligned}$$

2. Metode NPV

bunga : 22%

$$\begin{aligned} NPV &= \left[\frac{4.750}{1+(0,22)^1} + \frac{4.700}{1+(0,22)^2} + \frac{4.800}{1+(0,22)^3} + \frac{5000}{1+(0,22)^4} \right] - 10.200 \\ &= [3.894 + 4485 + 4749 + 4988] - 10.200 \\ &= 18.116 - 10.200 \\ &= 7.916 \end{aligned}$$

Karena nilai NPV positif maka investasi tersebut berhasil / layak

- Metode IRR

$$22\% \times 7.916 : 1.742$$

$$25\% \times 7.916 : 1.979$$

$$\begin{aligned} IRR &= \frac{1.742}{1.979} \times 25\% \\ &= 0,22 \end{aligned}$$

maka :

$$10.200 \rightarrow \left[\frac{4.750}{1+(0,22)^1} + \frac{4.700}{1+(0,22)^2} + \frac{4.800}{1+(0,22)^3} + \frac{5000}{1+(0,22)^4} \right]$$

$$10.200 \rightarrow 18.116$$

3. Net Present Value

$$\begin{aligned}
 10\% \text{ NPV} &: \frac{3.362.000}{(1+0.1)^1} + \frac{3.362.000}{(1+0.1)^2} + \frac{3.362.000}{(1+0.1)^3} + \frac{3.362.000}{(1+0.1)^4} - 10.000.000 \\
 &= \frac{3.362.000}{1.1} + \frac{3.362.000}{1.21} + \frac{3.362.000}{1.331} + \frac{3.362.000}{1.4641} - 10.000.000 \\
 &= 3.056.363 + 2.770.512 + 2.527.819 + 2.269.291 - 10.000.000 \\
 &= 10.631.985 - 10.000.000 \\
 &= 631.985
 \end{aligned}$$

12% NPV :

$$\begin{aligned}
 12\% \text{ NPV} &: \frac{3.62.000}{(1+0.12)^1} + \frac{3.62.000}{(1+0.12)^2} + \frac{362.000}{(1+0.12)^3} + \frac{362.000}{(1+0.12)^4} - 10.000.000 \\
 &= 3.001.785 + 2.680.163 + 2393.005 + 2.136.601 - 10.000.000 \\
 &= 10.211.616 - 10.000.000 \\
 &= 211.616
 \end{aligned}$$

$$\begin{aligned}
 \text{IRR} &: \frac{631.985}{211.616} \times 12\% \\
 &= 35.8\% > 10\%
 \end{aligned}$$

R: Kas masuk tahun 1, 2, 3 : 0
 tahun ke 4 : 13.605.000

$$\begin{aligned}
 10\% \text{ NPV} &: \frac{13.605.000}{(1+0.1)^5} - 10.000.000 \\
 &= 9.292.398 - 10.000.000 \\
 &= -707.601
 \end{aligned}$$

$$\begin{aligned}
 12\% \text{ NPV} &: \frac{13.605.000}{(1+0.12)^5} - 10.000.000 \\
 &= \frac{13.605.000}{1.5735} \\
 &= 8.646.223 - 10.000.000 \\
 &= -1353.776
 \end{aligned}$$

IRR

$$\begin{aligned}
 \text{IRR} &: -707601 \times 12\% \\
 &= -7.353.776 \times 12\% \\
 &= 0.522
 \end{aligned}$$

$$\begin{aligned}
 &: 0.062\% < 10\% \quad \text{"tidak setuju"}
 \end{aligned}$$

C	Tahun I	Tahun II	Tahun III	Tahun IV
	1.000.000	+ 3.000.000	+ 6.000.000	+ 2.000.000 - 10.000.000
10% NPV	$\frac{1.000.000}{(1+0,1)^1}$	$\frac{3.000.000}{(1+0,1)^2}$	$\frac{6.000.000}{(1+0,1)^3}$	$\frac{2.000.000}{(1+0,1)^4}$
	909.090	+ 2.479.338	+ 4.507.828	+ 1.781.094
	: 12.677.410 - 10.000.000			
	: 2.677.410			

12% NPV	$\frac{100.000}{(1+0,12)^1}$	$\frac{3.000.000}{(1+0,12)^2}$	$\frac{6.000.000}{(1+0,12)^3}$	$\frac{7.000.000}{(1+0,12)^4}$	- 10.000.000
	89.857	+ 2.391.581	+ 4.270.681	+ 4.498.626	
	: 12.003.745 - 10.000.000				
	: 2.003.745				

IRR : $\frac{2.677.410}{2.003.745} = 13,36\% > 10\%$
 ↳ maka disetujui