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Prodi : Manajemen / sem 3

⇒ Manajemen Keuangan

Jawaban problem halaman 167-168

1. Aliran Kas

$$\begin{aligned}T_0 &= \text{Biaya Investasi} + \text{modal akhir} \\ &= - (10.000 + 2.000) \\ &= - 10.200\end{aligned}$$

$$\begin{aligned}T_1 &= (\text{penjualan} - \text{Biaya operasional}) - \text{modal kerja} \\ &= (7000 - 2000) - 250 \\ &= 5000 - 250 \\ &= 4.750\end{aligned}$$

$$\begin{aligned}T_2 &= (7000 - 2000) - 300 \\ &= 5000 - 300 \\ &= 4.700\end{aligned}$$

$$\begin{aligned}T_3 &= (7000 - 2000) - 200 \\ &= 5000 - 200 \\ &= 4.800\end{aligned}$$

$$\begin{aligned}T_4 &= (7000 - 2000) \\ &= 5000\end{aligned}$$

2. → Model NPV

$$\text{bunga} = 22\%$$

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

$$- 10.200$$

$$= [3.894 + 4.485 + 4.749 + 4988] - 10.200$$

$$= 18.116 - 10.200$$

$$= 7.916$$

Karena nilai NPV positif, maka investasi tersebut berhasil / layak.

↳ metode IRR

$$22\% \times 7.916 = 1742$$

$$25\% \times 7.916 = 1979$$

$$\text{IRR} = \frac{1.742}{1979} \times 25\%$$

$$= 0,22$$

Maka :

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

$$10.200 \rightarrow 18.116$$

Karena hasil metode IRR lebih besar dari investasi awal, maka investasi tersebut layak

3. ↳ proyek A

$$NPV = \left[\frac{3.362.000}{1+(0,10)^1} + \frac{3.362.000}{1+(0,10)^2} + \frac{3.362.000}{1+(0,10)^3} + \right.$$

$$\left. \frac{3.362.000}{1+(0,10)^4} \right] - 10.000.000$$

$$= 10.657.088 - 10.000.000$$

$$= 657.088$$

↳ proyek B

$$NPV = \left[\frac{13.605.000}{(1+0,10)^4} \right] - 10.000.000$$

$$= 9.292.398 - 10.000.000$$

$$= -707.602$$

↳ proyek C

$$NPV = \left[\frac{1.000.000}{1+(0,10)^1} + \frac{3.000.000}{1+(0,10)^2} + \frac{6.000.000}{1+(0,10)^3} + \frac{7.000.000}{1+(0,10)^4} \right] - 10.000.000$$

$$= 12.677.413 - 10.000.000$$

$$= 2.677.413$$

⇒ IRR Proyek A

$$10\% \times 657.088 = 65.709$$

$$13\% \times 657.088 = 85.421$$

$$\text{IRR} = \frac{65.709}{85.421} \times 13\%$$

$$= 0,10$$

$$= 10\%$$

⇒ IRR proyek B

$$10\% \times (-707.602) = -70.760$$

$$13\% \times (-707.602) = -91.988$$

$$\text{IRR} = \frac{-70.760}{-91.988} \times 13\%$$

$$= 0,77 \times 13\%$$

$$= 0,10$$

$$= 10\%$$

IRR proyek C

$$10\% \times 2.677.413 = 267.741$$

$$13\% \times 2.677.413 = 348.064$$

$$\text{IRR} = \frac{267.741}{348.064} \times 13\%$$

$$= 0,10$$

$$= 10\%$$

a) jika menggunakan proyek independen proyek yang diterima layak yaitu proyek

↳ A dan C

b) jika menggunakan proyek mutually exclusive proyek C lebih baik