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Prodi : Manajemen

Date

1. Aliran Kas

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

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

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

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

$$\begin{aligned} T_4 &= 7000 - 2000 \\ &= 5.000 \end{aligned}$$

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

$$22\% \times 7.916 = 1.742$$

$$25\% \times 7.916 = 1.979$$

$$IRR = \frac{1.742}{1.979} \times 25\%$$

$$= 0,22$$

maka :

$$10.200 \rightarrow \left[\frac{4.750}{1+(0,22)^1} + \frac{4700}{1+(0,22)^2} + \frac{4800}{1+(0,22)^3} + \frac{5000}{1+(0,22)^4} \right]$$

$$10.200 \rightarrow 18.116$$

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

3. Perusahaan A

Npv

$$\begin{aligned} -10\% &= \frac{3.362.000}{(1+(0,1)^1)} + \frac{3.362.000}{(1+(0,1)^2)} + \frac{3.362.000}{(1+(0,1)^3)} + \frac{3.362.000}{(1+(0,1)^4)} - 10.000.000 \\ &= 10.631.485 - 10.000.000 \\ &= 631.485 \end{aligned}$$

$$\begin{aligned} -12\% &= \frac{3.362.000}{(1+(0,12)^1)} + \frac{3.262.000}{(1+(0,12)^2)} + \frac{3.362.000}{(1+(0,12)^3)} + \frac{3.362.000}{(1+(0,12)^4)} - 10.000.000 \\ &= 10.211.616 - 10.000.000 \\ &= 211.616 \end{aligned}$$

$$IRR = \frac{631.485}{211.616} \times 12\% = 35,8\% > 10\% \text{ (maka proyek layak)}$$

Perusahaan B

$$-10\% \text{ Npv} = \frac{13.605.000}{(1+(0,1)^4)} - 10.000.000 = -707.601$$

$$-12\% \text{ Npv} = \frac{13.605.000}{(1+(0,12)^4)} - 10.000.000 = -1353.776$$

$$IRR = \frac{-707.601}{-1353.776} \times 12\% = 0,62 \text{ (Tidak direstui)}$$

Perusahaan C

$$\begin{aligned} 10\% \text{ NPV} &= \frac{1.000.000}{(1+(0,1)^1)} + \frac{3.000.000}{(1+(0,1)^2)} + \frac{6.000.000}{(1+(0,1)^3)} + \frac{7.000.000}{(1+(0,1)^4)} \\ &= 2.677.410 \end{aligned}$$

$$\begin{aligned} 12\% \text{ NPV} &= \frac{1.000.000}{(1+(0,12)^1)} + \frac{3.000.000}{(1+(0,12)^2)} + \frac{6.000.000}{(1+(0,12)^3)} + \frac{7.000.000}{(1+(0,12)^4)} \\ &= 2.003.745 \end{aligned}$$

$$IRR = \frac{2.677.410}{2.003.745} \times 12\% = 16,03\% > 10\% \text{ (layak)}$$

* maka perusahaan A dan C layak karena proyek tersebut menguntungkan.

* jika ke-3 proyek merupakan proyek yang mutually exclusive.

mana yang lebih baik?

maka proyek yang dipilih adalah perusahaan C, karena npv keuntungan terbesar.