

Answer on Question #66408 – Math – Financial Math

Question

A project has the following cash flows

Year 1 2 3 4

Cash flow 30,000 40,000 40,000 90,000

The cost of the project is Ksh150, 000. Determine whether project is acceptable if the cost of capital is 18% using the IRR method

Solution

$$0 = -150000 + \frac{30000}{(1 + IRR)} + \frac{40000}{(1 + IRR)^2} + \frac{40000}{(1 + IRR)^3} + \frac{90000}{(1 + IRR)^4}$$

$$IRR = \frac{R1\% + NPV1 * (R2 - R1)\%}{NPV1 - NPV2}$$

R1=5%

R2=20%

$$NPV1 = \frac{30000}{(1 + 0.05)} + \frac{40000}{(1 + 0.05)^2} + \frac{40000}{(1 + 0.05)^3} + \frac{90000}{(1 + 0.05)^4} = 173499.3$$

$$NPV2 = \frac{30000}{(1 + 0.2)} + \frac{40000}{(1 + 0.2)^2} + \frac{40000}{(1 + 0.2)^3} + \frac{90000}{(1 + 0.2)^4} = 119328.7$$

$$IRR \approx \frac{5\% + 173499.3 * (20\% - 5\%)}{173499.3 - 119328.7} \approx 10\%$$

IRR=10%, cost of capital is greater than IRR, thus project is unacceptable

Answer

No

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