Earned Value Analysis Numerical →

Q Compute Estimate At completion (EAC) and variance at completion (VAC) if both SPI and CPI influence the project work when given variables are-

Budget At Completion (BAC) = $22,000
Earned Value (EV) = $13,000
Planned Value (PV) = $14,000
Actual Cost (AC) = $15,000

Sol $SPI = \frac{EV}{PV}$, $CPI = \frac{EV}{AC}$

$$EAC = AC + \frac{[(BAC - EV)]}{CPI \times SPI}$$

$$VAC = BAC - EAC$$

$SPI = \frac{13000}{14000} = 0.93$ Since SPI is less than 1 which indicates that project is behind schedule.

$CPI = \frac{EV}{AC} = \frac{13000}{15000} = 0.87$ Since CPI is less than 1 which indicates that project is over budget.

$EAC = 15000 + \left(\frac{22000 - 13000}{.87 \times .93}\right) = \$26,123$

$VAC = BAC - EAC$

$= 22000 - 26123 = -\$4123$ Ans

Means this project is experiencing a budget overrun of 4123 $.

Q. for the following project calculate SV, CV, SPI and CPI at the end of 2nd month.

Month	1	2	3	4
Planned Value	Rs 11,10,000	Rs 6,00,000	Rs 25,00,000	Rs 8,00,000
Earned value	Rs 10,00,000	Rs 7,50,000		
Actual Cost	Rs 12,50,000	Rs 5,00,000		

Sol Calculate Cumulative Data

Month	1	2	3	4
Planned value	11,10,000	6,00,000	25,00,000	8,00,000
(PV) cumulative	11,10,000	17,10,000		
Earned value	10,00,000	7,50,000		
(EV) cumulative	10,00,000	17,50,000		
Actual Cost	12,50,000	5,00,000		
(AC) cumulative	12,50,000	17,50,000		

Schedule Variance (SV) = EV − PV

= 17,50,000 − 17,10,000

= 40,000 Rs

Cost Variance (CV) = EV − AC

= 17,50,000 − 17,50,000

= 0 Rs

$$SPI = \frac{EV}{PV} = \frac{17,50,000}{17,10,000} = 1.023391\overline{8}.$$

$$CPI = \frac{EV}{AC} = \frac{17,50,000}{17,50,000} = 1 \text{ Ans}$$