

**Question #79****Answer: D**

$$\begin{aligned}\bar{A}_x &= E[v^{T_x}] = E[v^{T_x} | NS] \times \text{Prob}(NS) + E[v^{T_x} | S] \times \text{Prob}(S) \\ &= \left( \frac{0.03}{0.03 + 0.08} \right) \times 0.70 + \left( \frac{0.6}{0.06 + 0.08} \right) \times 0.30 \\ &= 0.3195\end{aligned}$$

Similarly,  ${}^2\bar{A}_x = \left( \frac{0.03}{0.03 + 0.16} \right) \times 0.70 + \left( \frac{0.06}{0.06 + 0.16} \right) \times 0.30 = 0.1923.$

$$\text{Var} \left( \bar{a}_{T(x)} \right) = \frac{{}^2\bar{A}_x - \bar{A}_x^2}{\delta^2} = \frac{0.1923 - 0.3195^2}{0.08^2} = 14.1.$$