IAS Formula Packages

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1 Comm Insure with categorical variable - Floor

If Floor = 0: (base case)

$$\log(CommInsure) = 2.198202 - 0.051394 \times \log(Excess) + 0.3909 \times \log(Content)$$

If Floor = 1:

$$\log(CommInsure) = 2.198202 - \mathbf{0.163845} - 0.051394 \times \log(Excess) + 0.3909 \times \log(Content)$$

If Floor = 2:

$$\log(CommInsure) = 2.198202 - \mathbf{0.191472} - 0.051394 \times \log(Excess) + 0.3909 \times \log(Content)$$

2 Comm Insure with all three categorical variables

2.1 Base Case

If $\text{Floor} = 0, \text{Excess} = 750, \text{Content} = 25000$:

$$\log(CommInsure) = 5.8363$$

2.2 Content Value Varies

If $\text{Floor} = 0, \text{Excess} = 750, \text{Content} = 25000$: (base case)

$$\log(CommInsure) = 5.8363$$

If $\text{Floor} = 0, \text{Excess} = 750, \text{Content} = 20000$:

$$\log(CommInsure) = 5.8363 - \mathbf{0.080519}$$

If $\text{Floor} = 0, \text{Excess} = 750, \text{Content} = 22500$:

$$\log(CommInsure) = 5.8363 - \mathbf{0.039441}$$

If $\text{Floor} = 0, \text{Excess} = 750, \text{Content} = 27500$:

$$\log(CommInsure) = 5.8363 + \mathbf{0.037784}$$

If $\text{Floor} = 0, \text{Excess} = 750, \text{Content} = 30000$:

$$\log(CommInsure) = 5.8363 + \mathbf{0.074194}$$

If $\text{Floor} = 0, \text{Excess} = 750, \text{Content} = 37500$:

$$\log(CommInsure) = 5.8363 + \mathbf{0.163695}$$

2.3 Floor Varies

If $\text{Floor} = 0, \text{Excess} = 750, \text{Content} = 25000$: (base case)

$$\log(CommInsure) = 5.8363$$

If $\text{Floor} = 1, \text{Excess} = 750, \text{Content} = 25000$:

$$\log(CommInsure) = 5.8363 - \mathbf{0.163845}$$

If $\text{Floor} = 2, \text{Excess} = 750, \text{Content} = 25000$:

$$\log(CommInsure) = 5.8363 - \mathbf{0.191472}$$

2.4 Excess Varies

If $\text{Floor} = 0, \text{Excess} = 750, \text{Content} = 25000$: (base case)

$$\log(CommInsure) = 5.8363$$

If $\text{Floor} = 0, \text{Excess} = 100, \text{Content} = 20000$:

$$\log(CommInsure) = 5.8363 + \mathbf{0.046751}$$

If $\text{Floor} = 0, \text{Excess} = 200, \text{Content} = 20000$:

$$\log(CommInsure) = 5.8363 + \mathbf{0.040297}$$

If $\text{Floor} = 0, \text{Excess} = 300, \text{Content} = 20000$:

$$\log(CommInsure) = 5.8363 + \mathbf{0.034136}$$

If $\text{Floor} = 0, \text{Excess} = 500, \text{Content} = 20000$:

$$\log(CommInsure) = 5.8363 + \mathbf{0.021942}$$

If $\text{Floor} = 0, \text{Excess} = 1000, \text{Content} = 20000$:

$$\log(CommInsure) = 5.8363 - \mathbf{0.021877}$$

If $\text{Floor} = 0, \text{Excess} = 2000, \text{Content} = 20000$:

$$\log(CommInsure) = 5.8363 - \mathbf{0.074858}$$

If $\text{Floor} = 0, \text{Excess} = 5000, \text{Content} = 20000$:

$$\log(CommInsure) = 5.8363 - \mathbf{0.151502}$$

3 Suncorp with categorical variable - Floor

If Floor = 0: (base case)

$$\log(Suncorp) = -0.188784 - 0.088020 \times \log(Excess) + 0.612627 \times \log(Content)$$

If Floor = 1:

$$\log(Suncorp) = -0.188784\mathbf{-0.324488} - 0.088020 \times \log(Excess) + 0.612627 \times \log(Content)$$

If Floor = 2:

$$\log(Suncorp) = -0.188784\mathbf{-0.393410} - 0.088020 \times \log(Excess) + 0.612627 \times \log(Content)$$

Note that the intercept could be not useful since the p-value > 0.05 for the hypothesis:

$$H_0 : \beta_0 = 0$$

$$H_1 : \beta_0 \neq 0$$

4 Suncorp with all three categorical variables

4.1 Base Case

If $\text{Floor} = 0, \text{Excess} = 750, \text{Content} = 25000$:

$$\log(Suncorp) = 5.438106$$

4.2 Content Value Varies

If $\text{Floor} = 0, \text{Excess} = 750, \text{Content} = 25000$: (base case)

$$\log(Suncorp) = 5.438106$$

If $\text{Floor} = 0, \text{Excess} = 750, \text{Content} = 20000$:

$$\log(Suncorp) = 5.438106 - \mathbf{0.141457}$$

If $\text{Floor} = 0, \text{Excess} = 750, \text{Content} = 22500$:

$$\log(Suncorp) = 5.438106 - \mathbf{0.065722}$$

If $\text{Floor} = 0, \text{Excess} = 750, \text{Content} = 27500$:

$$\log(Suncorp) = 5.438106 + \mathbf{0.056658}$$

If $\text{Floor} = 0, \text{Excess} = 750, \text{Content} = 30000$:

$$\log(Suncorp) = 5.438106 + \mathbf{0.108911}$$

If $\text{Floor} = 0, \text{Excess} = 750, \text{Content} = 37500$:

$$\log(Suncorp) = 5.438106 + \mathbf{0.245138}$$

4.3 Floor Varies

If $\text{Floor} = 0, \text{Excess} = 750, \text{Content} = 25000$: (base case)

$$\log(Suncorp) = 5.438106$$

If $\text{Floor} = 1, \text{Excess} = 750, \text{Content} = 25000$:

$$\log(Suncorp) = 5.438106 - \mathbf{0.324488}$$

If $\text{Floor} = 2, \text{Excess} = 750, \text{Content} = 25000$:

$$\log(Suncorp) = 5.438106 - \mathbf{0.393410}$$

4.4 Excess Varies

If $\text{Floor} = 0, \text{Excess} = 750, \text{Content} = 25000$: (base case)

$$\log(Suncorp) = 5.438106$$

If $\text{Floor} = 0, \text{Excess} = 200, \text{Content} = 20000$:

$$\log(Suncorp) = 5.438106 + \mathbf{0.105014}$$

If $\text{Floor} = 0, \text{Excess} = 400, \text{Content} = 20000$:

$$\log(Suncorp) = 5.438106 + \mathbf{0.057685}$$

If $\text{Floor} = 0, \text{Excess} = 600, \text{Content} = 20000$:

$$\log(Suncorp) = 5.438106 + \mathbf{0.016212}$$

If $\text{Floor} = 0, \text{Excess} = 1000, \text{Content} = 20000$:

$$\log(Suncorp) = 5.438106 - \mathbf{0.021114}$$

If $\text{Floor} = 0, \text{Excess} = 2000, \text{Content} = 20000$:

$$\log(Suncorp) = 5.438106 - \mathbf{0.098908}$$