

Ideale 5x5-Matrix (1):

Range Compression:

- $\text{Range}_1 = 0,4$
- $\text{Range}_2 = 0,64 - 0,24 = 0,4$
- $\text{Range}_3 = 1 - 0,48 = 0,52$

$$\rightarrow \text{Avg Range} = (0,4 + 0,4 + 0,52) : 3 = 0,44$$

$$\rightarrow \text{Score}_{\text{Range}} = 1 - \frac{0,44}{1} = \underline{\underline{0,56}}$$

Risikowertüberschneidungen:

$$\begin{aligned} I_1 &= [0, 0,4] \\ I_2 &= [0,24, 0,64] \\ I_3 &= [0,48, 1] \end{aligned}$$

- $j=1$:
 - $x=1$: $\text{Overlap}_{1,2} = 0,4 - 0,24 = 0,16$
 - $x=2$: $\text{Overlap}_{1,3} = 0$

- $j=2$:
 - $x=1$: $\text{Overlap}_{2,3} = 0,64 - 0,48 = 0,16$

$$\rightarrow \text{Total Overlap} = 0,32$$

$$\rightarrow \text{Max Overlap} = 4$$

$$\rightarrow \text{Score}_{\text{Overlap}} = 1 - \frac{0,32}{4} = \underline{\underline{0,92}}$$

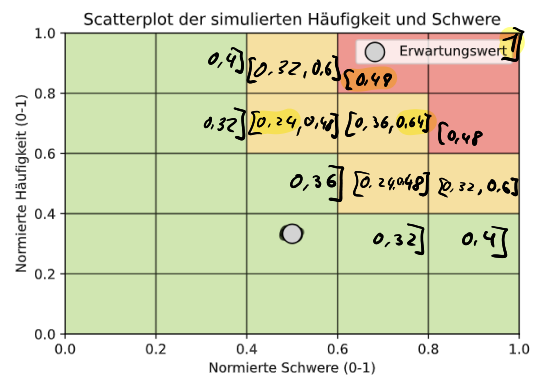
Quantifying errors:

$$\begin{aligned} 1 - \text{Score}_{\text{quant Error}} &= \frac{8 \cdot (1) + 8 \cdot (2)}{16 \cdot 4} \\ &= \frac{24}{64} = \frac{6}{16} = \frac{3}{8} = 0,375 \end{aligned}$$

$$\Rightarrow \text{Score}_{\text{quant error}} = 1 - 0,375 = \underline{\underline{0,625}}$$

Benchmark Score:

$$\Rightarrow \text{Benchmark Score} = \frac{0,56 + 0,92 + 0,625}{3} = \underline{\underline{0,7017}}$$



Ideale 5x5-Matrix (2):

Range Compression:

- $\text{Range}_1 = 0,6$
- $\text{Range}_2 = 0,8 - 0,36 = 0,44$
- $\text{Range}_3 = 1 - 0,64 = 0,36$

$$\rightarrow \text{Avg Range} = (0,6 + 0,44 + 0,36) : 3 = 0,4667$$

$$\rightarrow \text{Score}_{\text{Range}} = 1 - \frac{0,4667}{1} = \underline{\underline{0,5333}}$$

Risikowertüberschneidungen:

$$\begin{aligned} I_1 &= [0, 0,6] \\ I_2 &= [0,36, 0,8] \\ I_3 &= [0,64, 1] \end{aligned}$$

- $j=1$:
 - $x=1$: $\text{Overlap}_{1,2} = 0,6 - 0,36 = 0,24$
 - $x=2$: $\text{Overlap}_{1,3} = 0$

- $j=2$:
 - $x=1$: $\text{Overlap}_{2,3} = 0,8 - 0,64 = 0,16$

$$\rightarrow \text{Total Overlap} = 0,24 + 0,16 = 0,4$$

$$\rightarrow \text{Max Overlap} = 4$$

$$\rightarrow \text{Score}_{\text{overlap}} = 1 - \frac{0,4}{4} = \underline{\underline{0,9}}$$

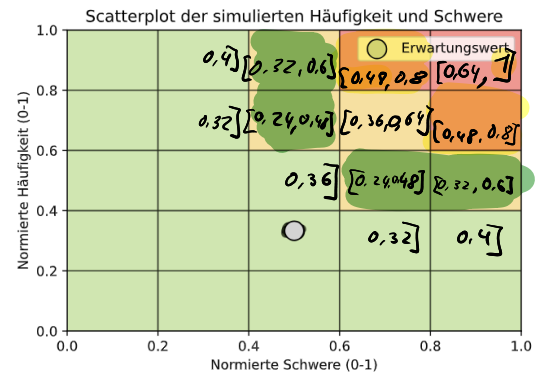
Quantifying Errors:

$$\begin{aligned} 1 - \text{Score}_{\text{quant error}} &= \frac{12 \cdot (1) + 4 \cdot (2)}{16 \cdot 4} \\ &= \frac{20}{64} = \frac{5}{16} = 0,3125 \end{aligned}$$

$$\Rightarrow \text{Score}_{\text{quant error}} = 1 - 0,3125 = \underline{\underline{0,6875}}$$

Benchmark Score

$$\Rightarrow \text{Benchmark Score} = \frac{0,5333 + 0,9 + 0,6875}{3} = \underline{\underline{0,7069}}$$



Risikomatrix DIN EN 50126:

Range Compression:

- $\text{Range}_1 = 0,1667 - 0 = 0,1667$
- $\text{Range}_2 = 0,3333$
- $\text{Range}_3 = 0,75$
- $\text{Range}_4 = 1 - 0,2083 = 0,7917$

$$\rightarrow \text{Avg Range} = \frac{1}{4} \cdot (0,1667 + 0,3333 + 0,75 + 0,7917) = 0,5104$$

$$\rightarrow \text{Score}_{\text{Range}} = 1 - \frac{0,5104}{1} = \underline{\underline{0,4896}}$$

→ evt. hier die Verteilung mit einbeziehen (d.h. 2x 0.5 Range besser als 0.9 und 0.1)

Risikowertüberschneidungen:

$$\begin{aligned} I_1 &= [0, 0,1667] \\ I_2 &= [0, 0,3333] \\ I_3 &= [0, 0,75] \\ I_4 &= [0,2083, 1] \end{aligned}$$

- $j=1$:
 - $x=1$: $\text{Overlap}_{1,2} = 0,1667$
 - $x=2$: $\text{Overlap}_{1,3} = 0,1667$
 - $x=3$: $\text{Overlap}_{1,4} = 0$
- $j=2$:
 - $x=1$: $\text{Overlap}_{2,3} = 0,3333$
 - $x=2$: $\text{Overlap}_{2,4} = 0,3333 - 0,2083 = 0,125$
- $j=3$:
 - $x=1$: $\text{Overlap}_{3,4} = 0,75 - 0,2083 = 0,5417$

$$\rightarrow \text{Total Overlap} = ((0,1667 + 2 \cdot 0,1667) + (0,3333 + 2 \cdot 0,125) + (0,5417)) = 1,6251$$

$$\rightarrow \text{Max Overlap: } 70$$

$$\rightarrow \text{Score}_{\text{Overlap}} = 1 - \frac{1,6251}{70} = \underline{\underline{0,8375}}$$

→ evt. weniger wichten?

Quantifying errors:

$$\begin{aligned} 1 - \text{Score}_{\text{quantError}} &= \frac{1+2+2+2+3+2+3+2+2+2+2+2+3+2+1}{15 \cdot 4} \\ &= \frac{31}{60} = 0,5167 \end{aligned}$$

$$\Rightarrow \text{Score}_{\text{quantError}} = 1 - 0,5167 = \underline{\underline{0,4833}}$$

Benchmark Score:

$$\Rightarrow \text{Benchmark Score} = \frac{0,4896 + 0,8375 + 0,4833}{3} = \underline{\underline{0,6035}}$$