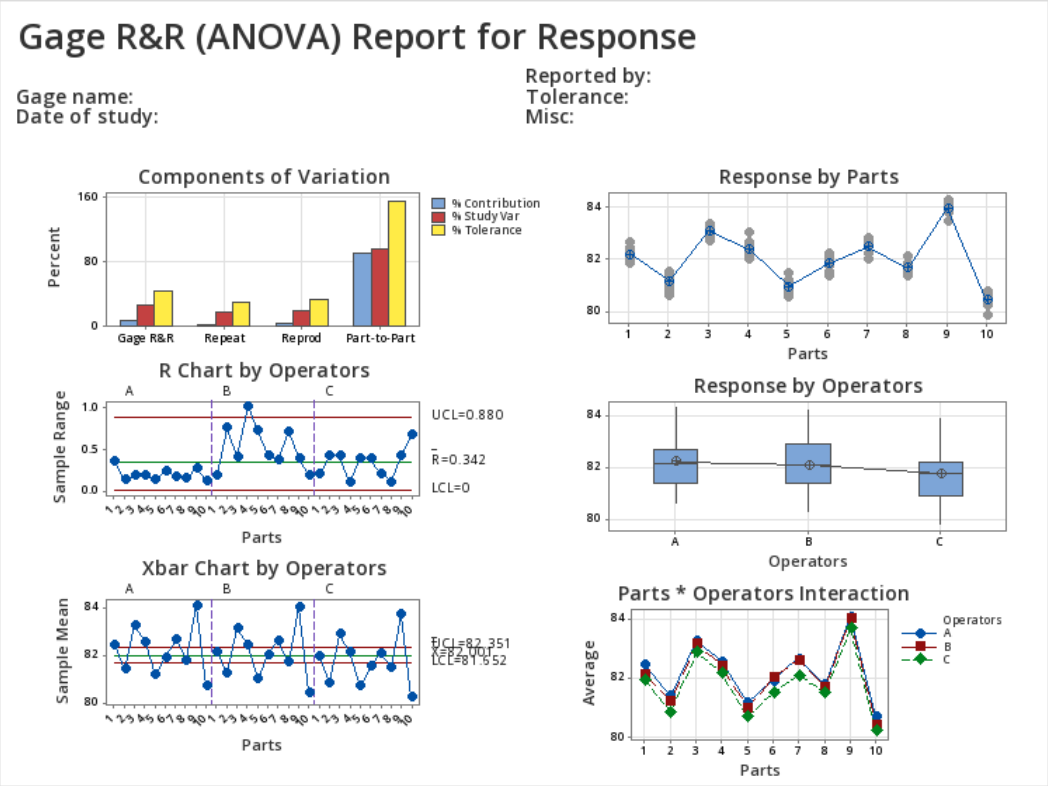
Gage R&R - Brake Caliper Torsion



Variance Components

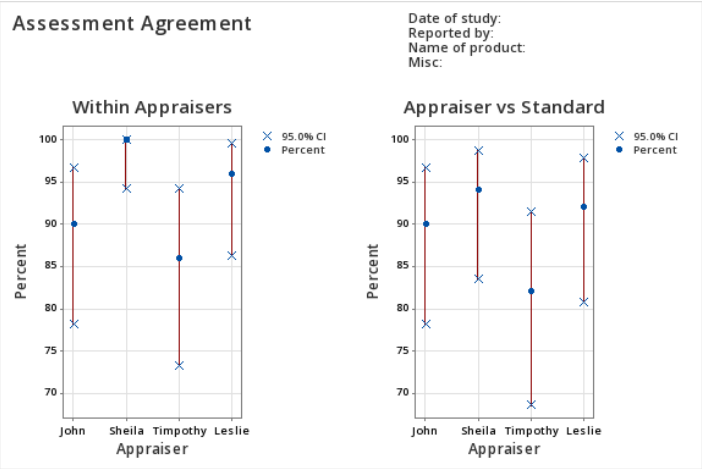
Source	VarComp	%Contribution (of VarComp)
Total Gage R&R	**0.09143**	**7.76**
Repeatability	**0.03997**	**3.39**
Reproducibility	**0.05146**	**4.37**
Operators	0.05146	4.37
Part-To-Part	**1.08645**	**92.24**
Total Variation	**1.17788**	**100.00**

Gage Evaluation

Source	StdDev (SD)	Study Var (6 × SD)	%Study Var (%SV)	%Tolerance (SV/Toler)
Total Gage R&R	**0.30237**	**1.81423**	**27.86**	**45.32**
Repeatability	**0.19993**	**1.19960**	**18.42**	**29.97**
Reproducibility	**0.22684**	**1.36103**	**20.90**	**34.00**
Operators	0.22684	1.36103	20.90	34.00
Part-To-Part	**1.04233**	**6.25396**	**96.04**	**156.24**
Total Variation	**1.08530**	**6.51180**	**100.00**	**162.68**

- The measurement system shows **most of the variation is due to actual part differences**, which is a positive indicator of measurement quality
- There is **no significant interaction** between operators and parts, suggesting consistent performance across assessors
- **Repeatability and reproducibility are within acceptable limits**, indicating the test method is generally reliable
- However, a **slight operator effect** was observed, which may require further training or standardization
- Importantly, the **number of distinct categories is below the recommended threshold (less than 5)**. This limits the ability of the measurement system to distinguish between subtle part differences.

Attribute Agreement Analysis - Airbag Defect Inspection



Assessment Agreement

# Inspected	# Matched	Percent	95% CI	
50	37	74.00	(59.66,	85.37)

 # Matched: All appraisers' assessments agree with the known standard.

Fleiss' Kappa Statistics

Response	Kappa	SE Kappa	Z	P(vs > 0)
1	0.977897	0.0500000	19.5579	0.0000
2	0.849068	0.0500000	16.9814	0.0000
3	0.814992	0.0500000	16.2998	0.0000
4	0.944580	0.0500000	18.8916	0.0000
5	0.983756	0.0500000	19.6751	0.0000
Overall	0.912082	0.0251705	36.2362	0.0000

- All appraisers showed **acceptable repeatability** with **Kappa >= 0.7**
- Each appraiser's accuracy compared to the standard was **sufficient (Kappa > 0.7) but not ideal** for critical systems
- Appraisers were generally consistent with one another suggesting the **measurement process is reproducible**
- Overall **Kappa was >0.70**, indicating the **system is acceptable**