Gage R&R Study Lower Jaw

Mesiodistal widths 37 to 47

TESIS 37 TO 47 LOWER
Gage R&R Study - XBar/R Method

Variance Components

Source	VarComp	%Contribution (of VarComp)
Total Gage R&R	0.136835	25.20
Repeatability	0.045446	8.37
Reproducibility	0.091389	16.83
Part-To-Part	0.406229	74.80
Total Variation	0.543064	100.00

Gage Evaluation

Source	StdDev (SD)	Study Var (6 × SD)	%Study Var (%SV)
Total Gage R&R	0.369912	2.21947	50.20
Repeatability	0.213181	1.27909	28.93
Reproducibility	0.302305	1.81383	41.02
Part-To-Part	0.637361	3.82417	86.49
Total Variation	0.736929	4.42157	100.00

Number of Distinct Categories = 2

Gage R&R (Xbar/R) for iso37

Gage R&R (Xbar/R) for iso37

Gage name:
Date of study:

Reported by:
Tolerance:
Misc:

R Chart by Experto

Experto 1   Experto 2   Experto 3

UCL=0.786

R=0.241

LCL=0

Sample Range

Modelo

Xbar Chart by Experto

Experto 1   Experto 2   Experto 3

UCL=10.418
X̿=9.966
LCL=9.513

Sample Mean

Modelo

Gage R&R (Xbar/R) for iso37

Gage name:
Date of study:

Reported by:
Tolerance:
Misc:

iso37 by Modelo

Modelo
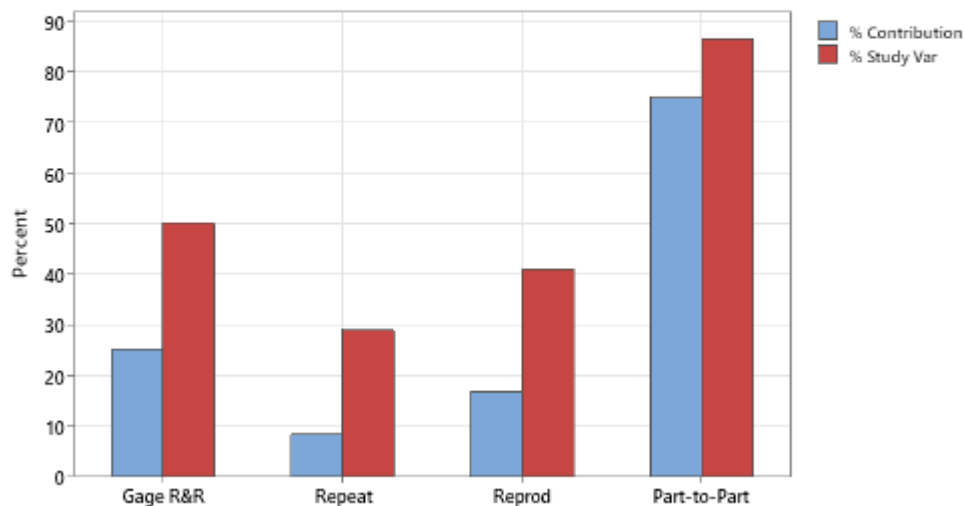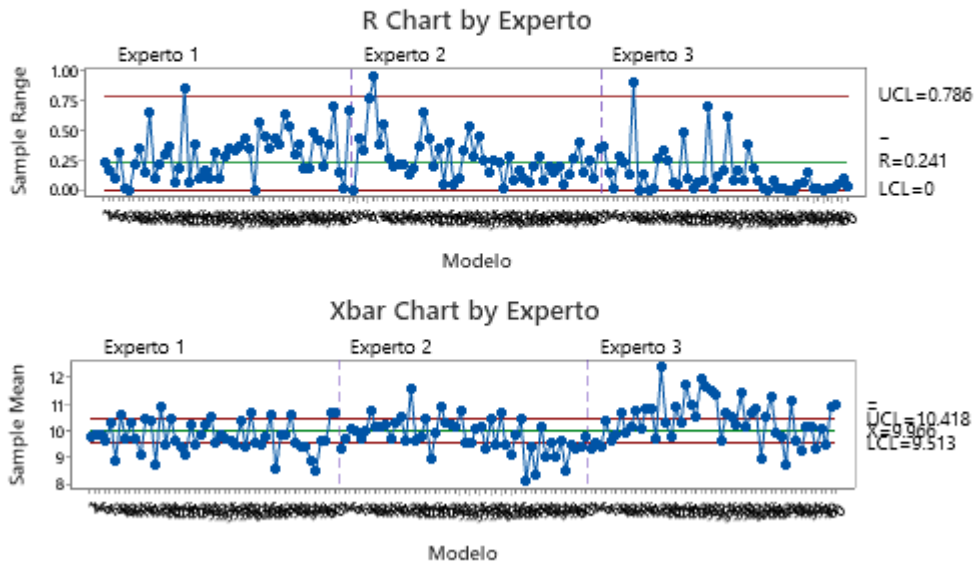
Gage R&R (Xbar/R) for iso37

Gage name:
Date of study:

Reported by:
Tolerance:
Misc:

iso37 by Experto
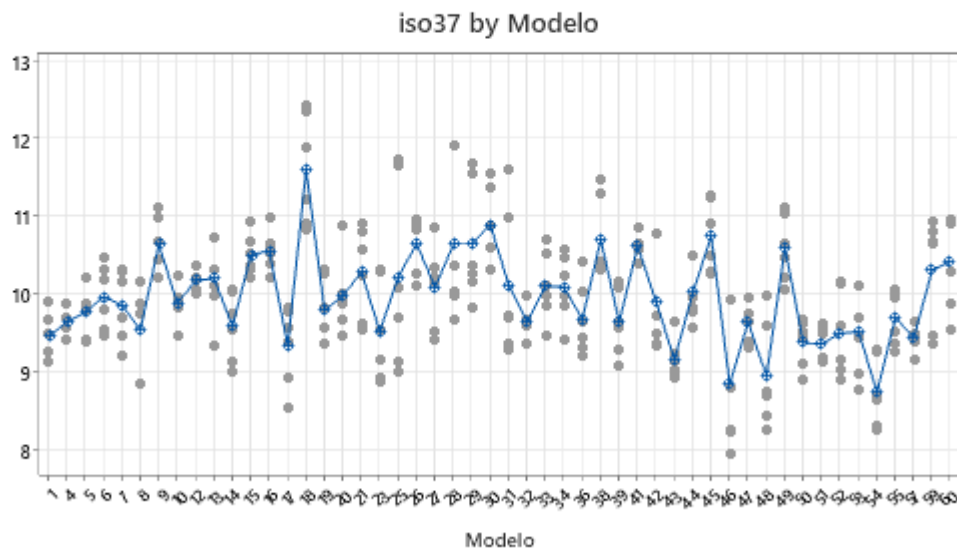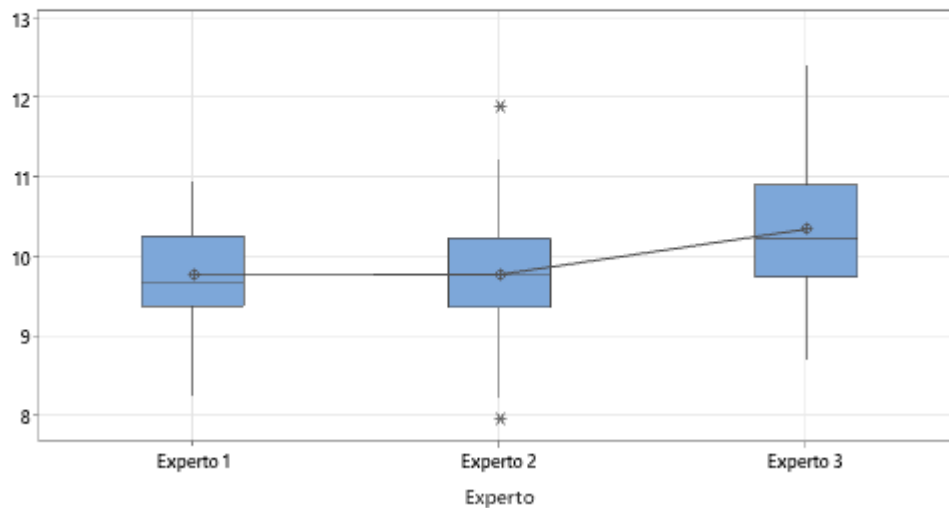

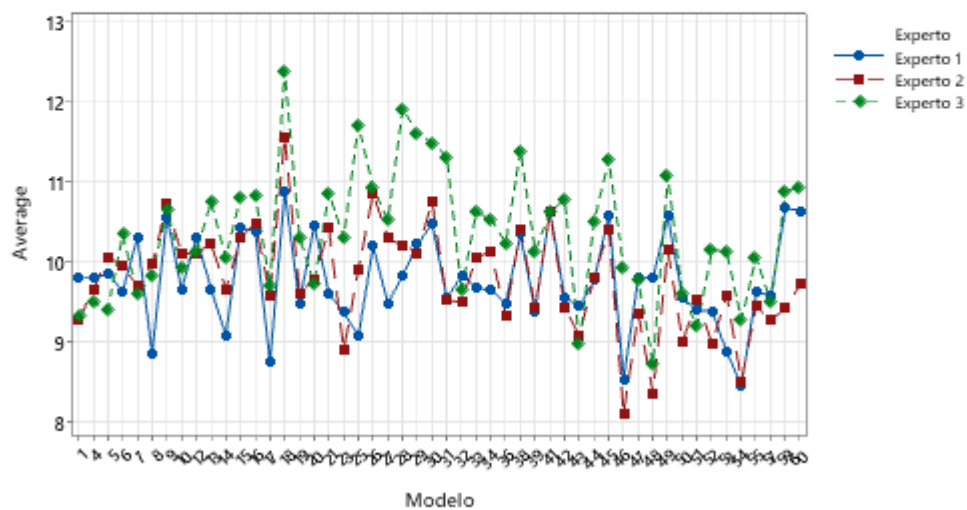# Gage R&R (Xbar/R) for iso37

Gage name:
Date of study:

Reported by:
Tolerance:
Misc:

Modelo * Experto Interaction

Gage R&R Study - XBar/R Method

Variance Components

Source	VarComp	%Contribution (of VarComp)
Total Gage R&R	0.088420	16.64
Repeatability	0.039960	7.52
Reproducibility	0.048459	9.12
Part-To-Part	0.442802	83.36
Total Variation	0.531222	100.00

Gage Evaluation

Source	StdDev (SD)	Study Var (6 × SD)	%Study Var (%SV)
Total Gage R&R	0.297355	1.78413	40.80
Repeatability	0.199901	1.19940	27.43
Reproducibility	0.220135	1.32081	30.20
Part-To-Part	0.665434	3.99260	91.30
Total Variation	0.728850	4.37310	100.00

Number of Distinct Categories = 3

Gage R&R (Xbar/R) for iso36

Gage R&R (Xbar/R) for iso36

Gage name:
Date of study:

Reported by:
Tolerance:
Misc:

R Chart by Experto

Experto 1   Experto 2   Experto 3

Sample Range

UCL=0.737

R=0.226

LCL=0

Modelo

Xbar Chart by Experto

Experto 1   Experto 2   Experto 3

Sample Mean

UCL=10.812
X=10.388
LCL=9.964

Modelo

Gage R&R (Xbar/R) for iso36

Gage name:
Date of study:

Reported by:
Tolerance:
Misc:

iso36 by Modelo

Modelo

Gage R&R (Xbar/R) for iso36

Gage name:
Date of study:

Reported by:
Tolerance:
Misc:

iso36 by Experto

Gage R&R (Xbar/R) for iso36

Gage name:
Date of study:
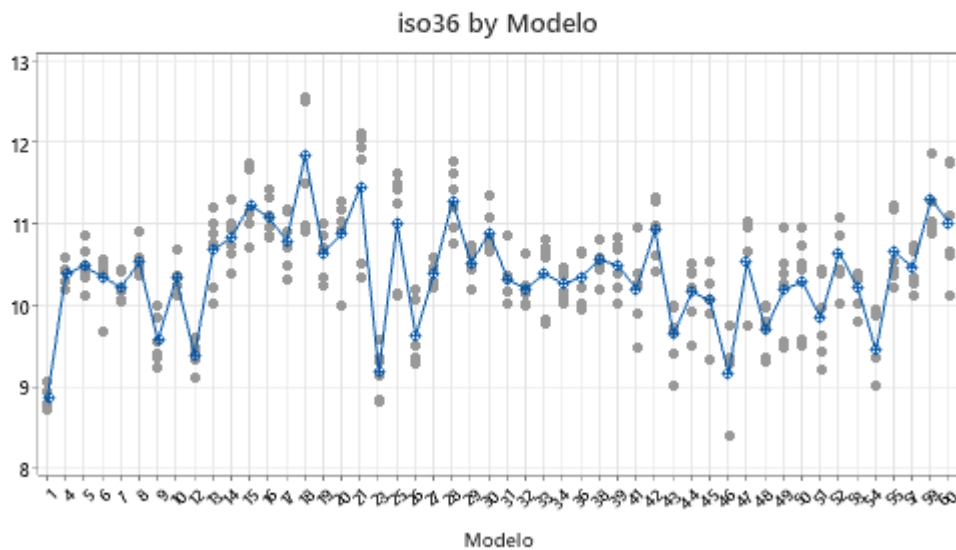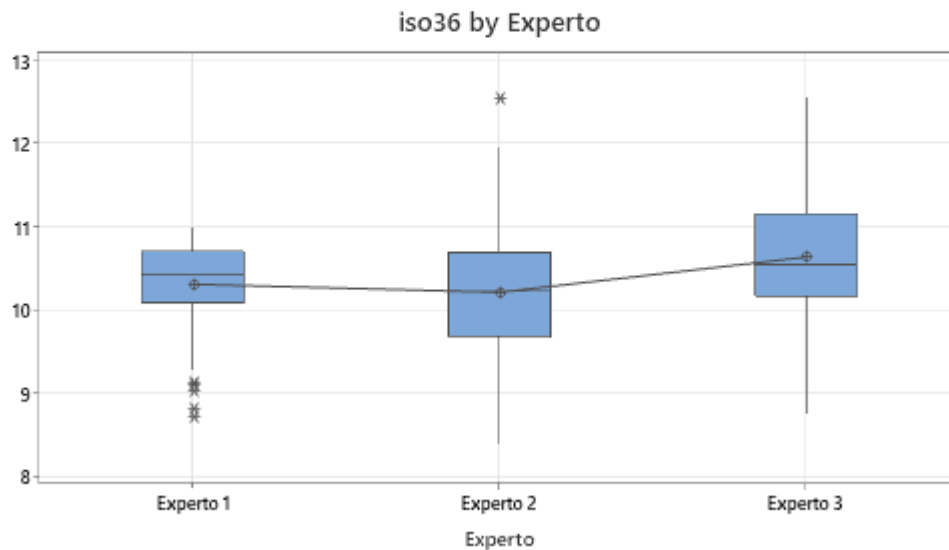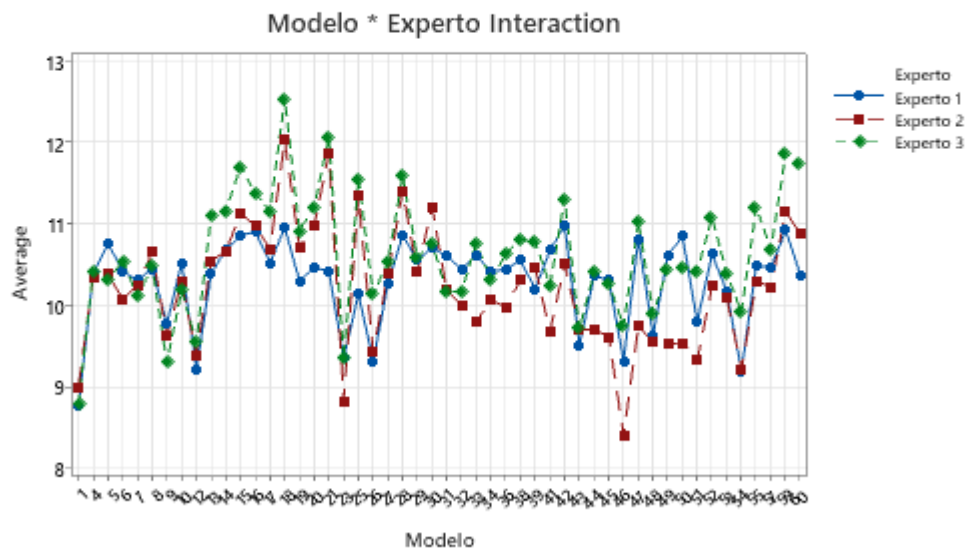
Reported by:
Tolerance:
Misc:

Modelo * Experto Interaction

Gage R&R Study - XBar/R Method

Variance Components

Source	VarComp	%Contribution (of VarComp)
Total Gage R&R	0.060012	23.05
Repeatability	0.036673	14.09
Reproducibility	0.023340	8.97
Part-To-Part	0.200291	76.95
Total Variation	0.260303	100.00

Gage Evaluation

Source	StdDev (SD)	Study Var (6 × SD)	%Study Var (%SV)
Total Gage R&R	0.244974	1.46984	48.02
Repeatability	0.191501	1.14901	37.53
Reproducibility	0.152773	0.91664	29.94
Part-To-Part	0.447539	2.68523	87.72
Total Variation	0.510199	3.06120	100.00

Number of Distinct Categories = 2

Gage R&R (Xbar/R) for iso35
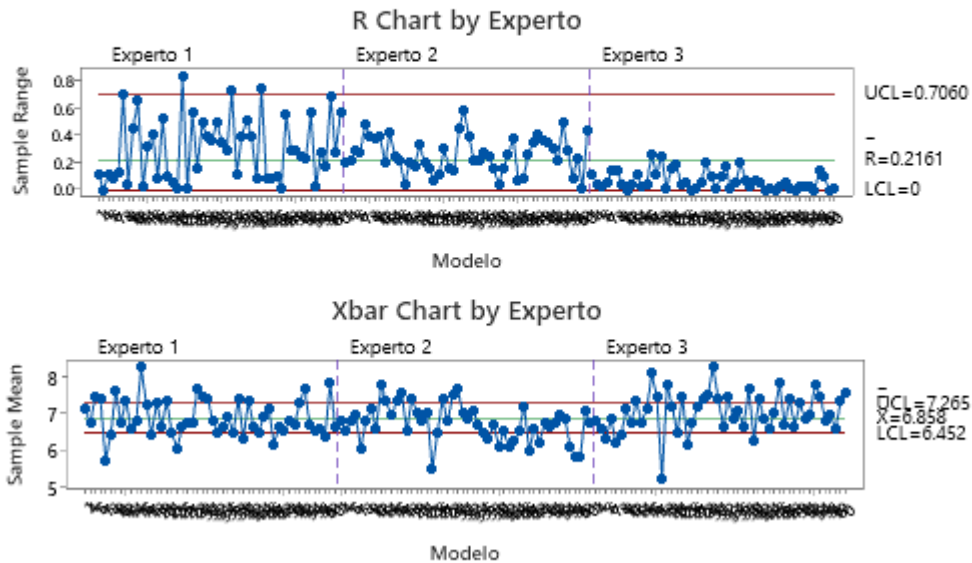
Gage name:
Date of study:

Reported by:
Tolerance:
Misc:

R Chart by Experto

UCL=0.7060
R=0.2161
LCL=0

Xbar Chart by Experto

UCL=7.265
X=6.858
LCL=6.452

Gage R&R (Xbar/R) for iso35

Gage name:
Date of study:

Reported by:
Tolerance:
Misc:

iso35 by Modelo

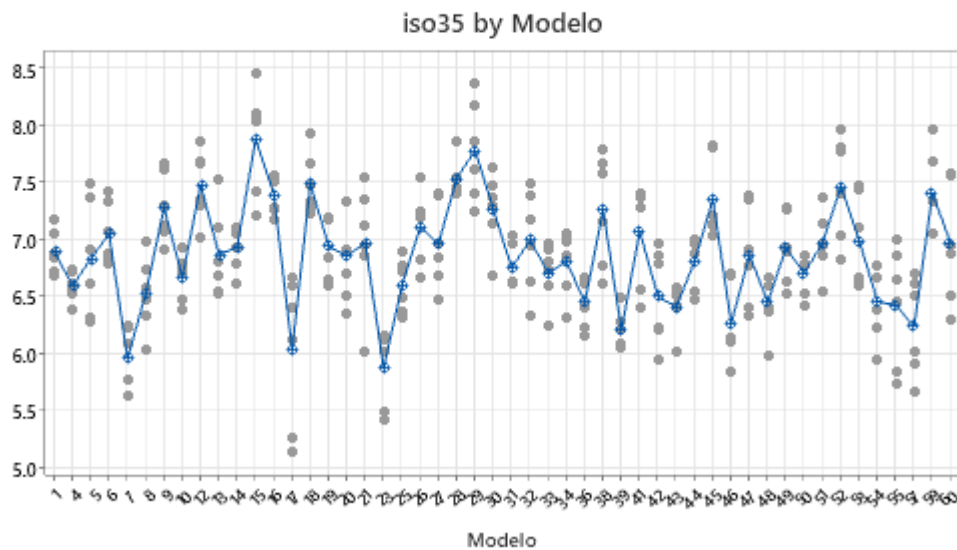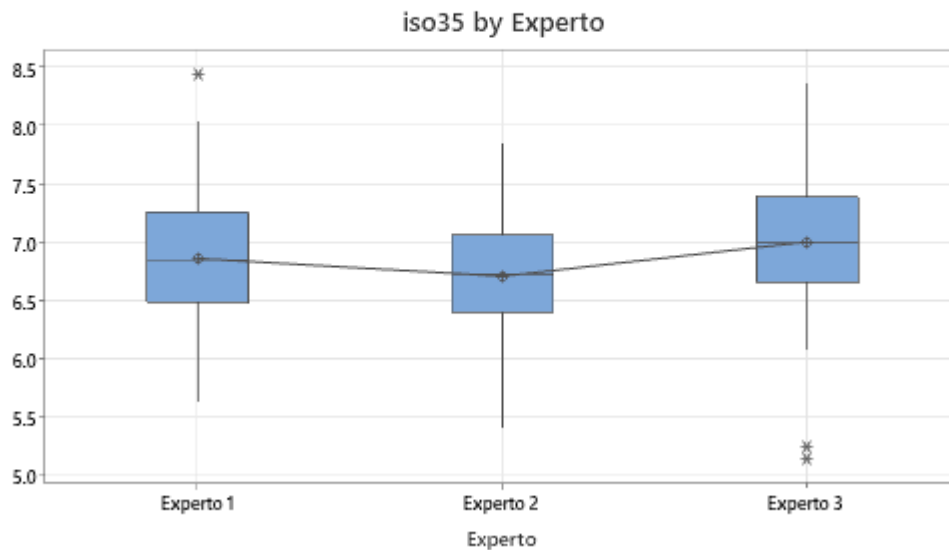## Gage R&R (Xbar/R) for iso35
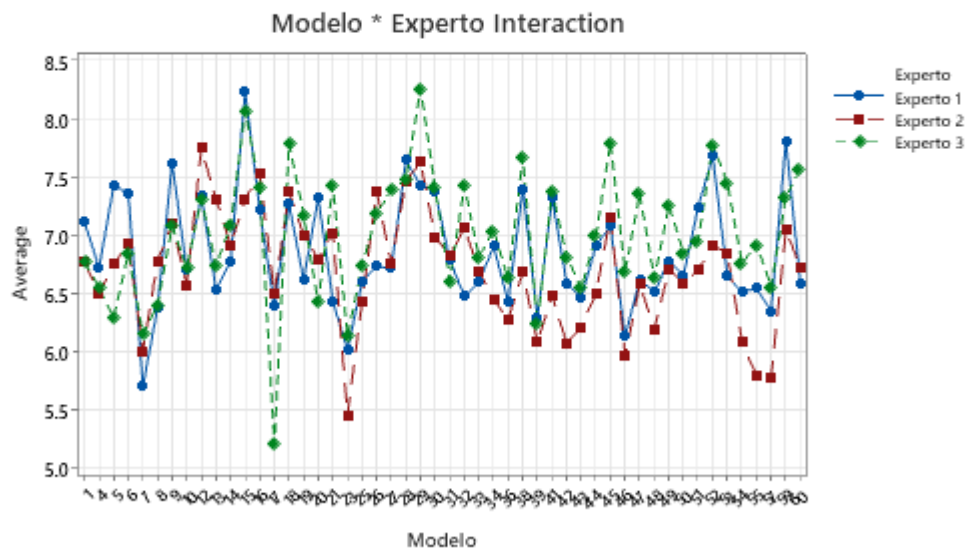
Gage name:
Date of study:

Reported by:
Tolerance:
Misc:

iso35 by Experto

Gage R&R (Xbar/R) for iso35

Gage name:
Date of study:

Reported by:
Tolerance:
Misc:

Modelo * Experto Interaction

Gage R&R Study - XBar/R Method

Variance Components

Source	VarComp	%Contribution (of VarComp)
Total Gage R&R	0.107609	29.16
Repeatability	0.037232	10.09
Reproducibility	0.070376	19.07
Part-To-Part	0.261368	70.84
Total Variation	0.368977	100.00

Gage Evaluation

Source	StdDev (SD)	Study Var (6 × SD)	%Study Var (%SV)
Total Gage R&R	0.328038	1.96823	54.00
Repeatability	0.192957	1.15774	31.77
Reproducibility	0.265285	1.59171	43.67
Part-To-Part	0.511241	3.06745	84.16
Total Variation	0.607434	3.64461	100.00

Number of Distinct Categories = 2

Gage R&R (Xbar/R) for iso34

Gage R&R (Xbar/R) for iso34

Gage name:
Date of study:

Reported by:
Tolerance:
Misc:

R Chart by Experto

Experto 1   Experto 2   Experto 3

Sample Range

UCL=0.711
R=0.218
LCL=0

Modelo

Xbar Chart by Experto

Experto 1   Experto 2   Experto 3

Sample Mean

UCL=7.185
X=6.775
LCL=6.366

Modelo

Gage R&R (Xbar/R) for iso34

Gage name:
Date of study:

Reported by:
Tolerance:
Misc:

iso34 by Modelo

Modelo

Gage R&R (Xbar/R) for iso34

Gage name:
Date of study:

Reported by:
Tolerance:
Misc:

iso34 by Experto

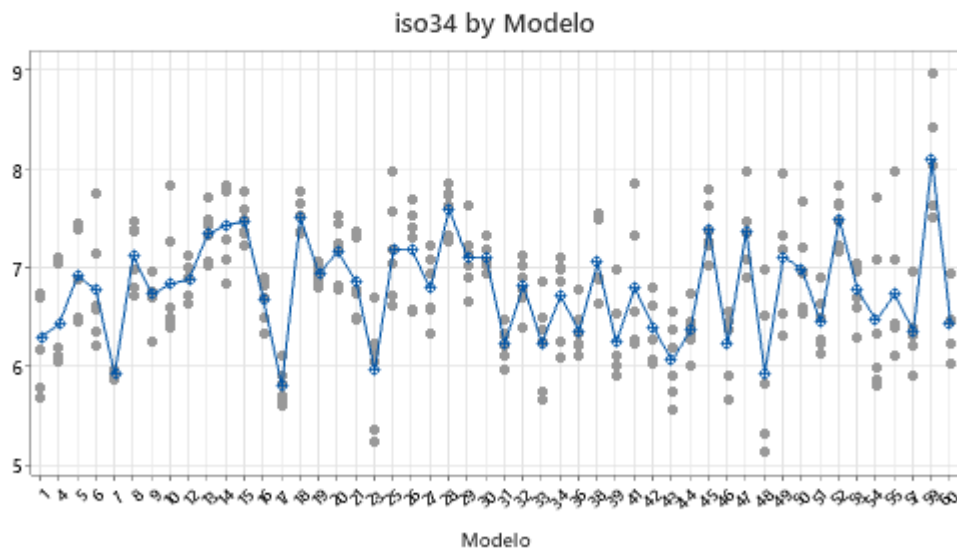## Gage R&R (Xbar/R) for iso34

Gage name:
Date of study:

Reported by:
Tolerance:
Misc:

Modelo * Experto Interaction
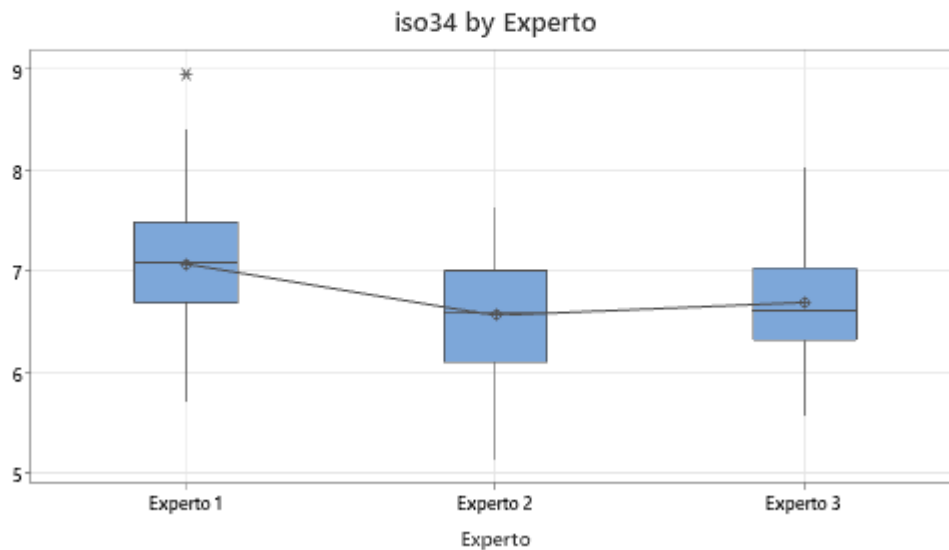
Gage R&R Study - XBar/R Method

Variance Components

Source	VarComp	%Contribution (of VarComp)
Total Gage R&R	0.242639	62.19
Repeatability	0.037250	9.55
Reproducibility	0.205389	52.64
Part-To-Part	0.147516	37.81
Total Variation	0.390155	100.00

Gage Evaluation

Source	StdDev (SD)	Study Var (6 × SD)	%Study Var (%SV)
Total Gage R&R	0.492584	2.95550	78.86
Repeatability	0.193003	1.15802	30.90
Reproducibility	0.453199	2.71919	72.56
Part-To-Part	0.384078	2.30447	61.49
Total Variation	0.624624	3.74774	100.00

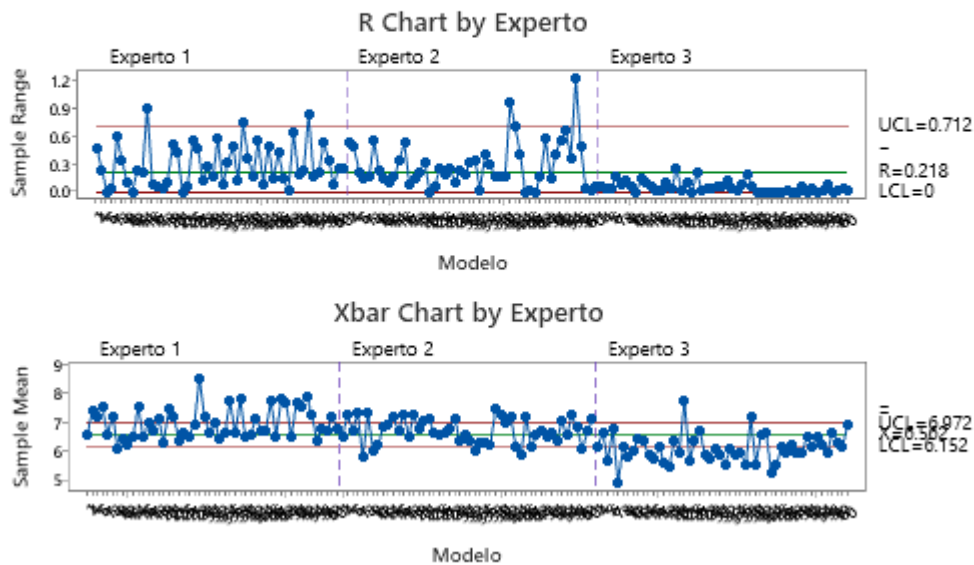Number of Distinct Categories = 1

Gage R&R (Xbar/R) for iso33

Gage R&R (Xbar/R) for iso33

Gage name:
Date of study:

Reported by:
Tolerance:
Misc:

R Chart by Experto

Experto 1   Experto 2   Experto 3

UCL=0.712
–
R=0.218
LCL=0

Xbar Chart by Experto

Experto 1   Experto 2   Experto 3

UCL=6.972
X̄=6.562
LCL=6.152

Gage R&R (Xbar/R) for iso33

Gage name:
Date of study:

Reported by:
Tolerance:
Misc:

iso33 by Modelo
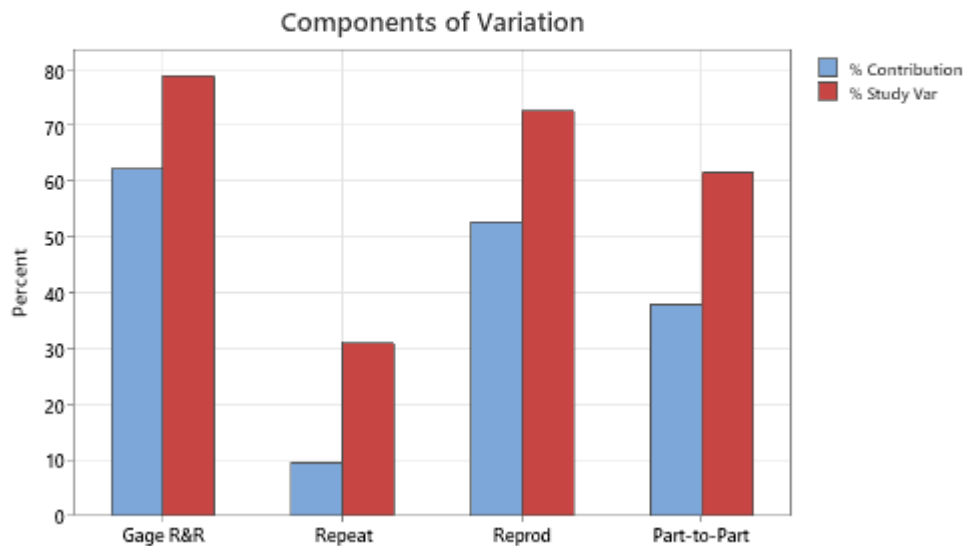
Gage R&R (Xbar/R) for iso33

Gage name:
Date of study:

Reported by:
Tolerance:
Misc:

iso33 by Experto

Gage R&R (Xbar/R) for iso33
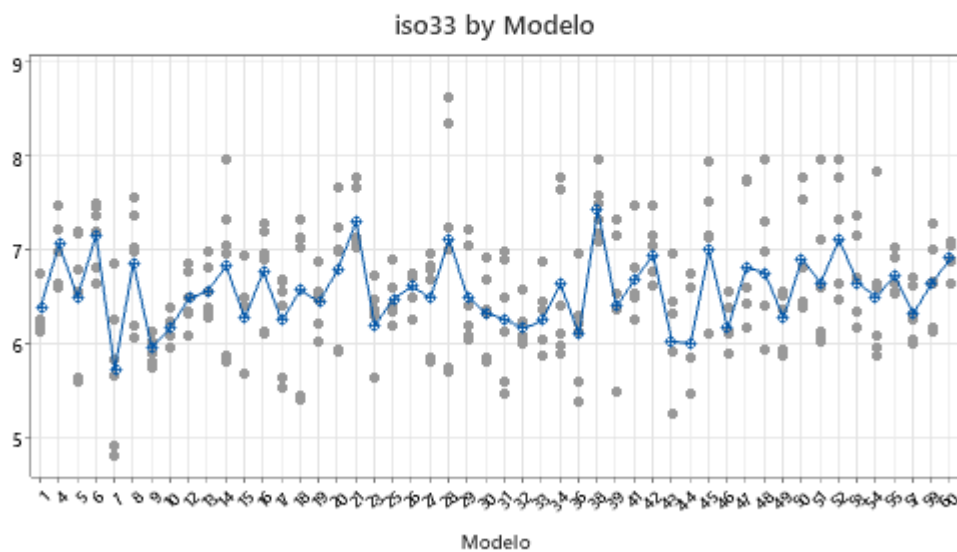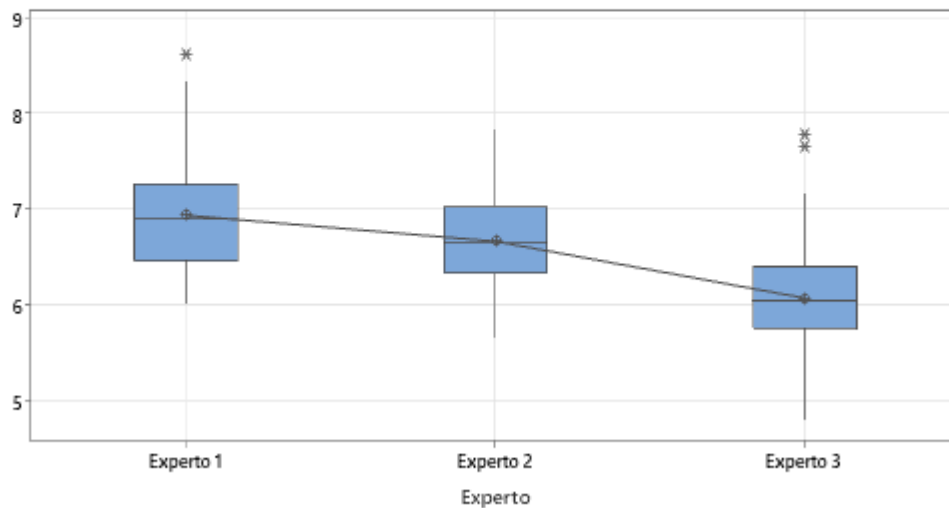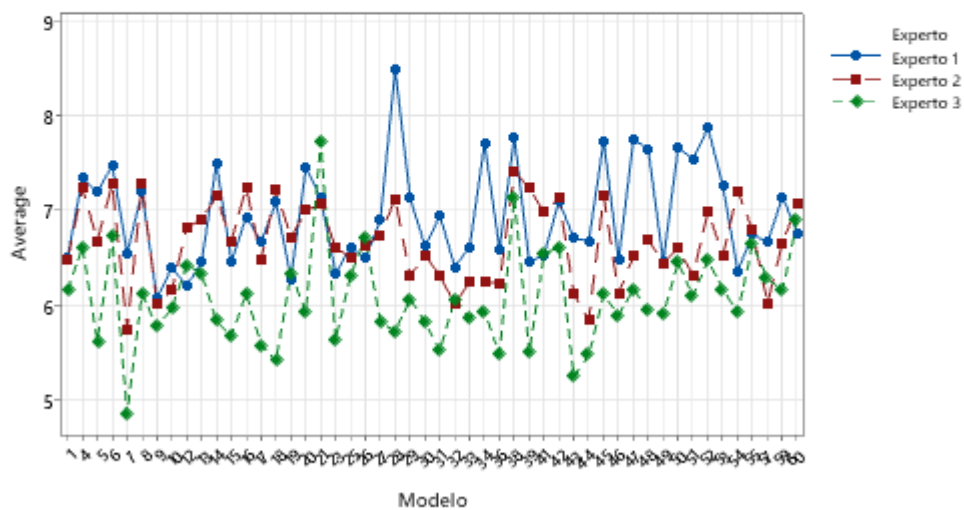
Gage name:
Date of study:

Reported by:
Tolerance:
Misc:

Modelo * Experto Interaction

Gage R&R Study - XBar/R Method

Variance Components

Source	VarComp	%Contribution (of VarComp)
Total Gage R&R	0.103516	54.33
Repeatability	0.041189	21.62
Reproducibility	0.062326	32.71
Part-To-Part	0.087023	45.67
Total Variation	0.190539	100.00

Gage Evaluation

Source	StdDev (SD)	Study Var (6 × SD)	%Study Var (%SV)
Total Gage R&R	0.321738	1.93043	73.71
Repeatability	0.202951	1.21771	46.49
Reproducibility	0.249653	1.49792	57.19
Part-To-Part	0.294997	1.76998	67.58
Total Variation	0.436508	2.61905	100.00

Number of Distinct Categories = 1

Gage R&R (Xbar/R) for iso32

Gage name:
Date of study:
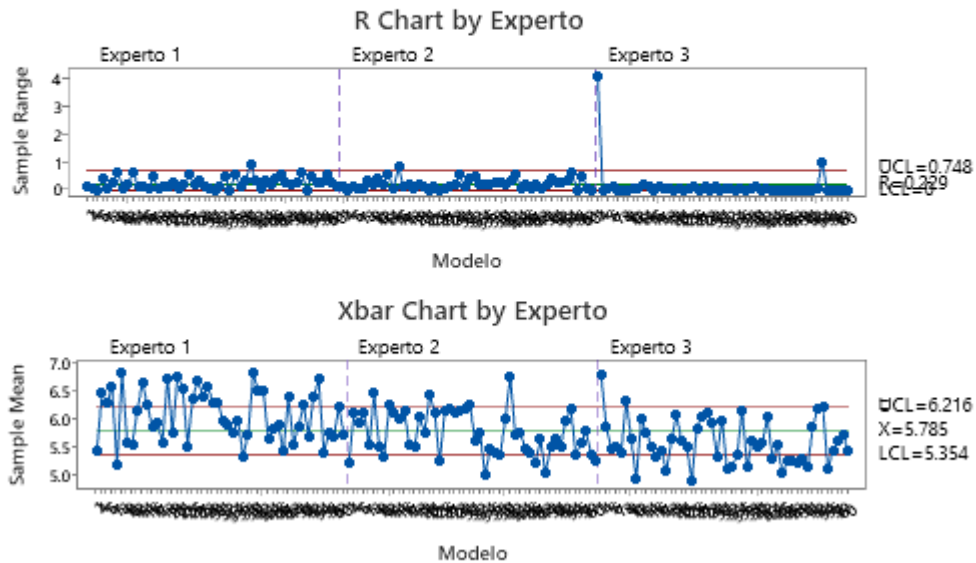
Reported by:
Tolerance:
Misc:

R Chart by Experto

UCL=0.748
R=0.229
LCL=0

Xbar Chart by Experto

UCL=6.216
X̄=5.785
LCL=5.354

Gage R&R (Xbar/R) for iso32

Gage name:
Date of study:

Reported by:
Tolerance:
Misc:

iso32 by Modelo

Gage R&R (Xbar/R) for iso32

Gage name:
Date of study:

Reported by:
Tolerance:
Misc:

iso32 by Experto

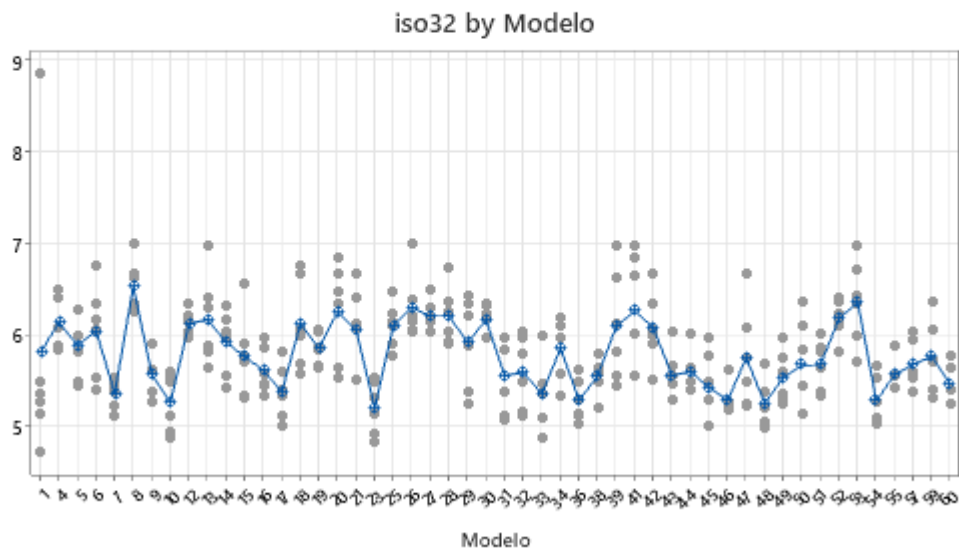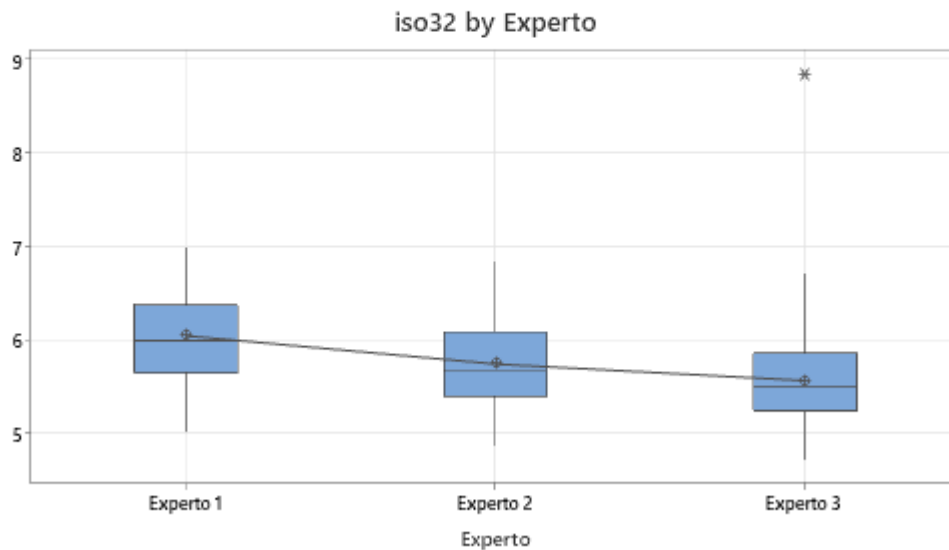Gage R&R (Xbar/R) for iso32

Gage name:
Date of study:

Reported by:
Tolerance:
Misc:

Modelo * Experto Interaction

Gage R&R Study - XBar/R Method
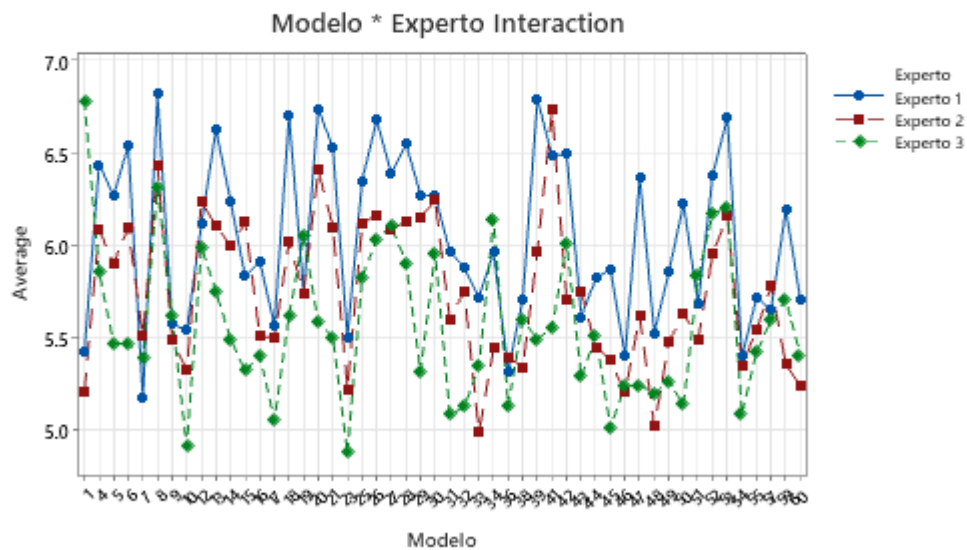
Variance Components

Source	VarComp	%Contribution (of VarComp)
Total Gage R&R	0.064781	53.65
Repeatability	0.025795	21.36
Reproducibility	0.038986	32.29
Part-To-Part	0.055957	46.35
Total Variation	0.120738	100.00

Gage Evaluation

Source	StdDev (SD)	Study Var (6 × SD)	%Study Var (%SV)
Total Gage R&R	0.254521	1.52713	73.25
Repeatability	0.160608	0.96365	46.22
Reproducibility	0.197449	1.18469	56.82
Part-To-Part	0.236553	1.41932	68.08
Total Variation	0.347474	2.08484	100.00

Number of Distinct Categories = 1

Gage R&R (Xbar/R) for iso31

Gage name:
Date of study:

Reported by:
Tolerance:
Misc:

R Chart by Experto

UCL=0.5921
–
R=0.1812
LCL=0

Xbar Chart by Experto

UCL=5.582
X=5.241
LCL=4.900

Gage R&R (Xbar/R) for iso31

Gage name:
Date of study:

Reported by:
Tolerance:
Misc:

iso31 by Modelo

Gage R&R (Xbar/R) for iso31
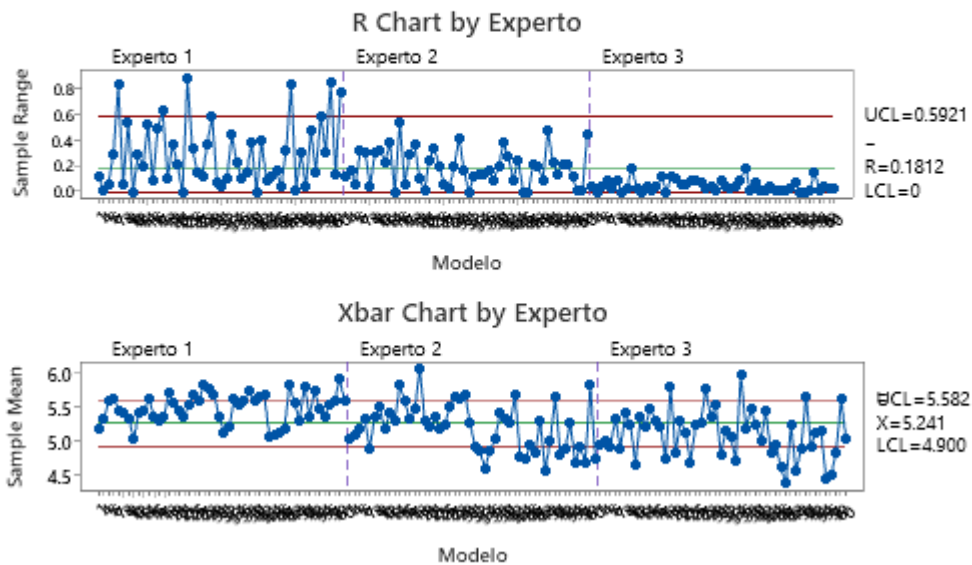
Gage name:
Date of study:

Reported by:
Tolerance:
Misc:

iso31 by Experto
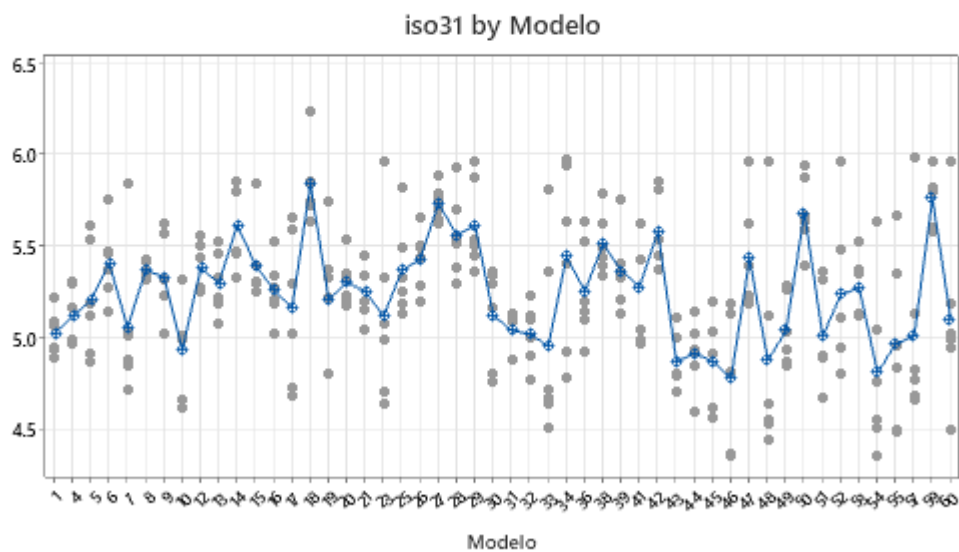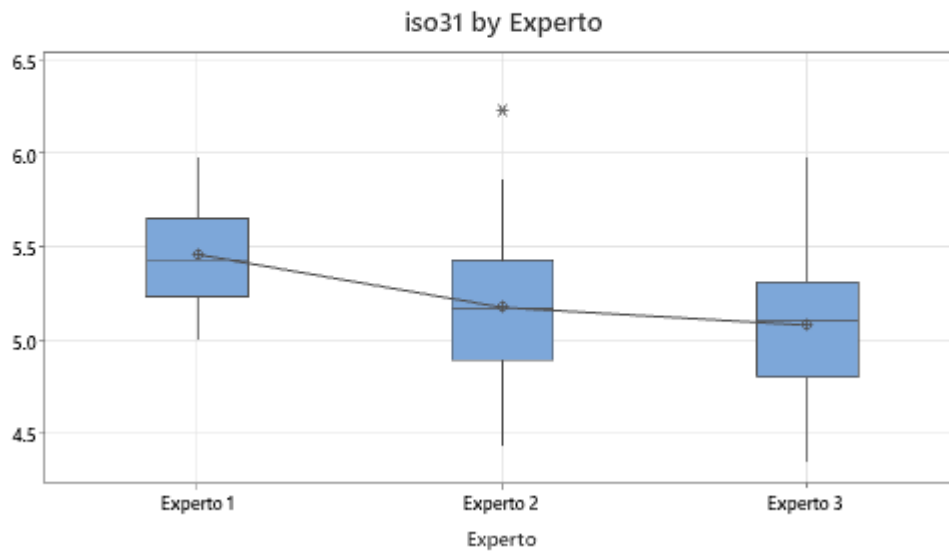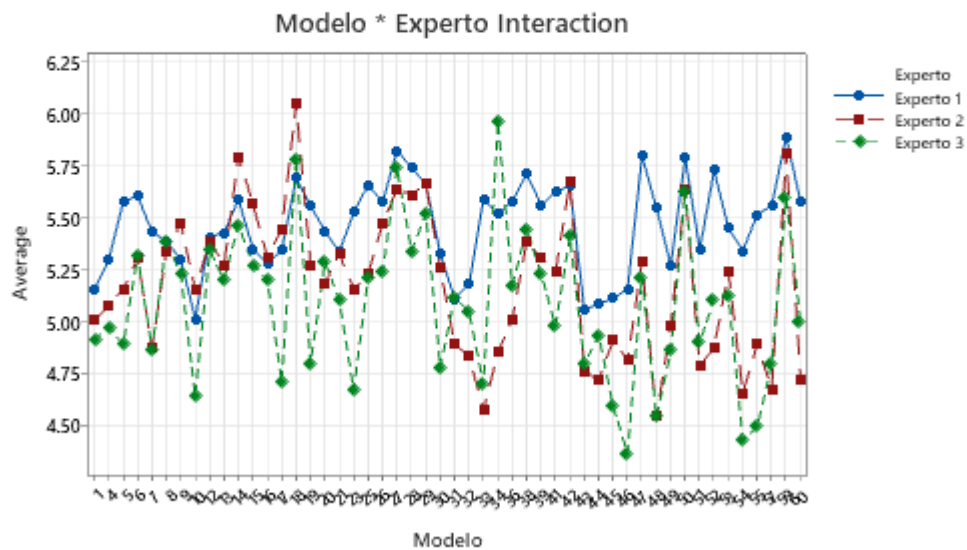

Gage R&R (Xbar/R) for iso31

Gage name:
Date of study:

Reported by:
Tolerance:
Misc:

Modelo * Experto Interaction

Gage R&R Study - XBar/R Method

Variance Components

Source	VarComp	%Contribution (of VarComp)
Total Gage R&R	0.077968	62.83
Repeatability	0.024546	19.78
Reproducibility	0.053422	43.05
Part-To-Part	0.046133	37.17
Total Variation	0.124100	100.00

Gage Evaluation

Source	StdDev (SD)	Study Var (6 × SD)	%Study Var (%SV)
Total Gage R&R	0.279227	1.67536	79.26
Repeatability	0.156671	0.94002	44.47
Reproducibility	0.231132	1.38679	65.61
Part-To-Part	0.214785	1.28871	60.97
Total Variation	0.352279	2.11367	100.00

Number of Distinct Categories = 1

Gage R&R (Xbar/R) for iso41

Gage R&R (Xbar/R) for iso41

Gage name:
Date of study:

Reported by:
Tolerance:
Misc:

R Chart by Experto

Experto 1   Experto 2   Experto 3

Sample Range

0.8
0.6
0.4
0.2
0.0

UCL=0.578
–
R=0.177
LCL=0

Modelo

Xbar Chart by Experto

Experto 1   Experto 2   Experto 3

Sample Mean

6.5
6.0
5.5
5.0
4.5

ŪCL=5.560
X̄=5.227
LCL=4.895

Modelo

Gage R&R (Xbar/R) for iso41

Gage name:
Date of study:

Reported by:
Tolerance:
Misc:

iso41 by Modelo

7.0
6.5
6.0
5.5
5.0
4.5

Modelo
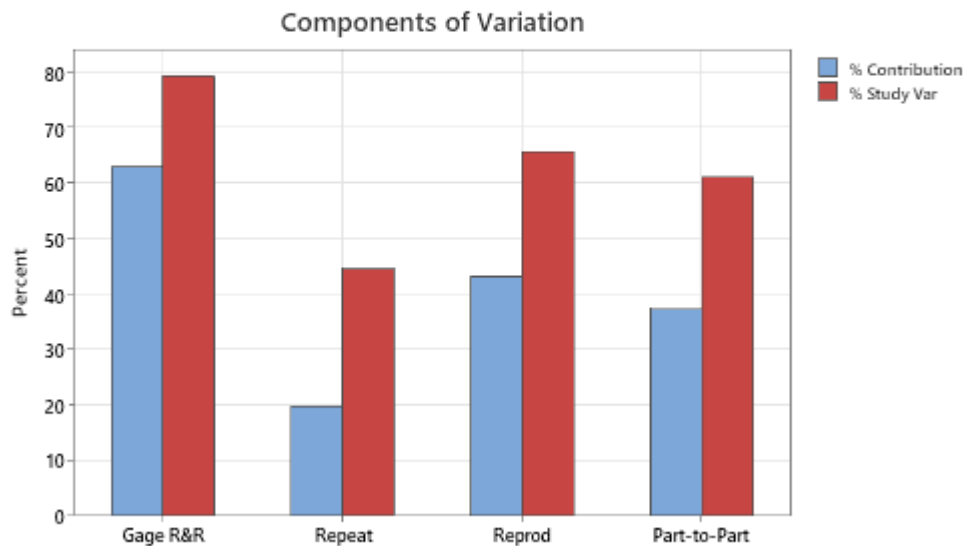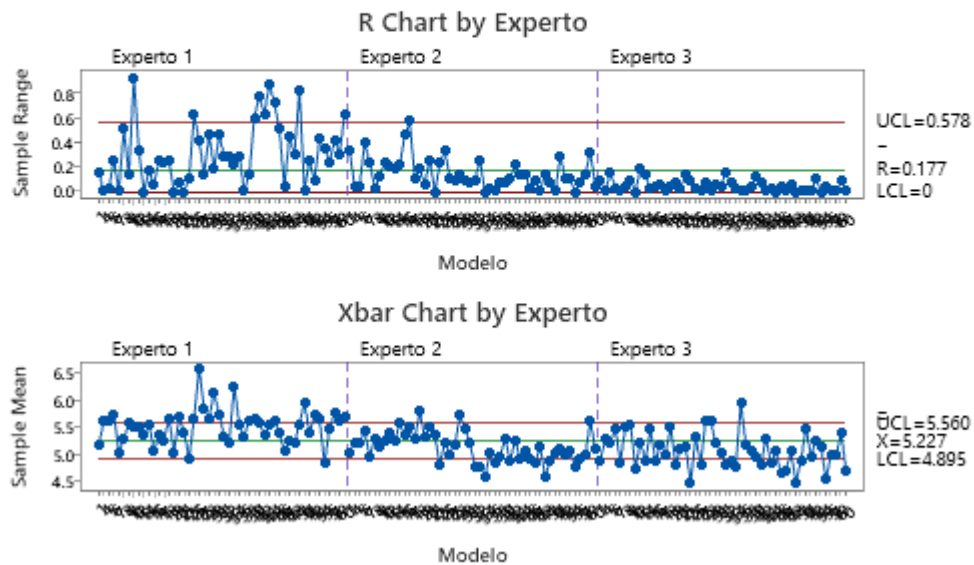
Gage R&R (Xbar/R) for iso41

Gage name:
Date of study:

Reported by:
Tolerance:
Misc:

iso41 by Experto

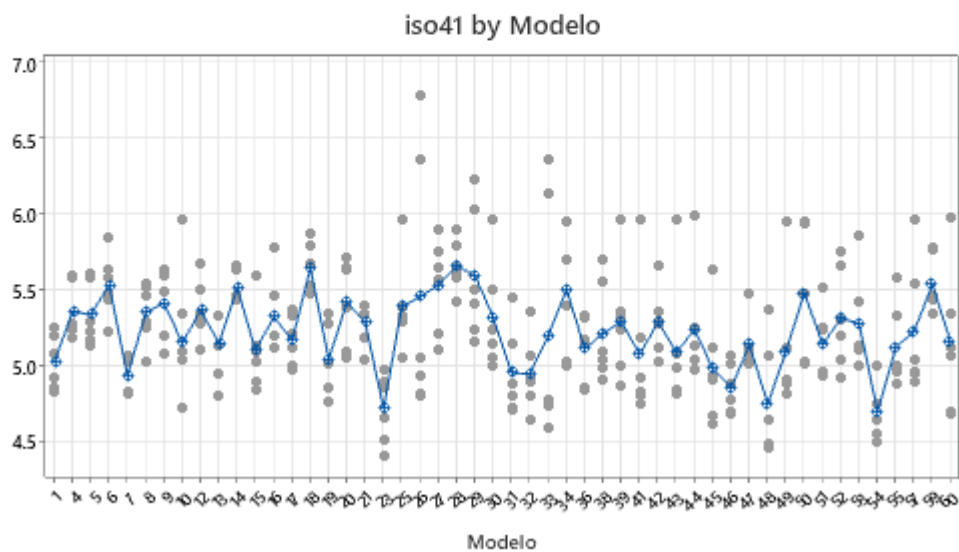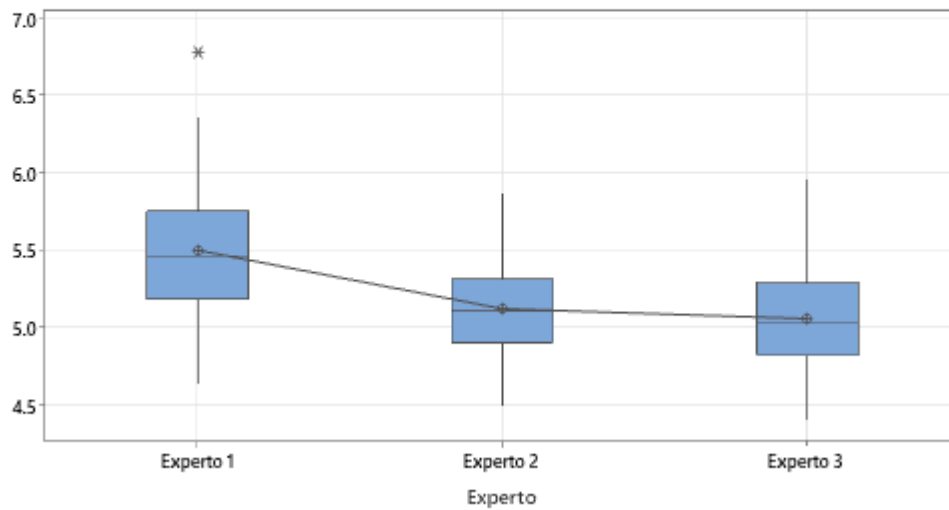
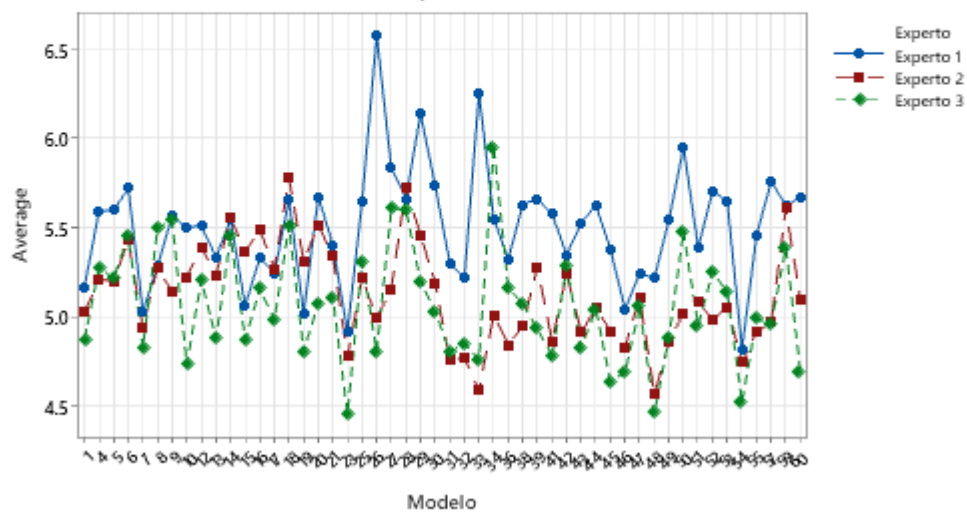# Gage R&R (Xbar/R) for iso41

Gage name:
Date of study:

Reported by:
Tolerance:
Misc:

Modelo * Experto Interaction

Gage R&R Study - XBar/R Method

Variance Components

Source	VarComp	%Contribution (of VarComp)
Total Gage R&R	0.121739	38.49
Repeatability	0.036626	11.58
Reproducibility	0.085113	26.91
Part-To-Part	0.194551	61.51
Total Variation	0.316290	100.00

Gage Evaluation

Source	StdDev (SD)	Study Var (6 × SD)	%Study Var (%SV)
Total Gage R&R	0.348911	2.09346	62.04
Repeatability	0.191378	1.14827	34.03
Reproducibility	0.291741	1.75045	51.87
Part-To-Part	0.441079	2.64648	78.43
Total Variation	0.562396	3.37438	100.00

Number of Distinct Categories = 1

Gage R&R (Xbar/R) for iso42

Gage name:
Date of study:

Reported by:
Tolerance:
Misc:

R Chart by Experto

UCL=0.706
R=0.216
LCL=0

Xbar Chart by Experto

UCL=6.203
X=5.797
LCL=5.391

Gage R&R (Xbar/R) for iso42

Gage name:
Date of study:

Reported by:
Tolerance:
Misc:

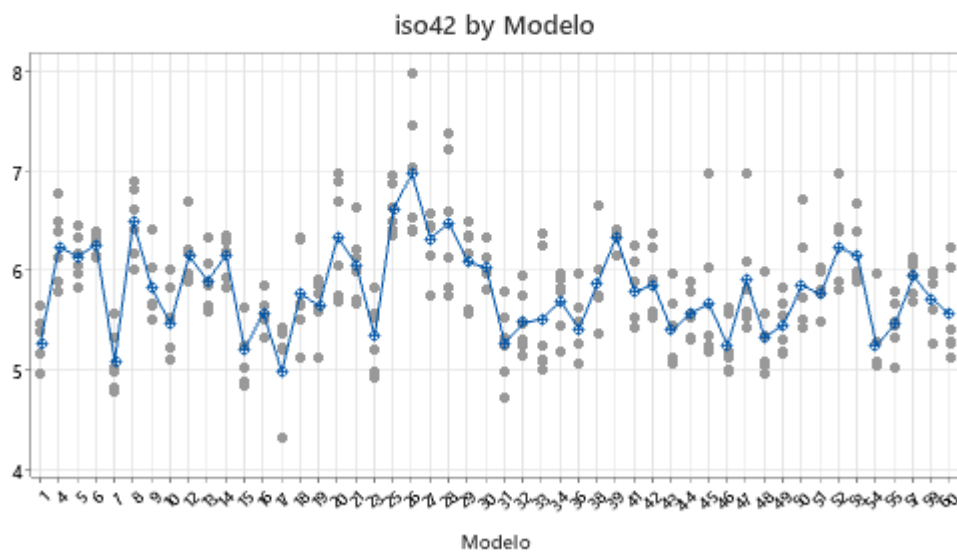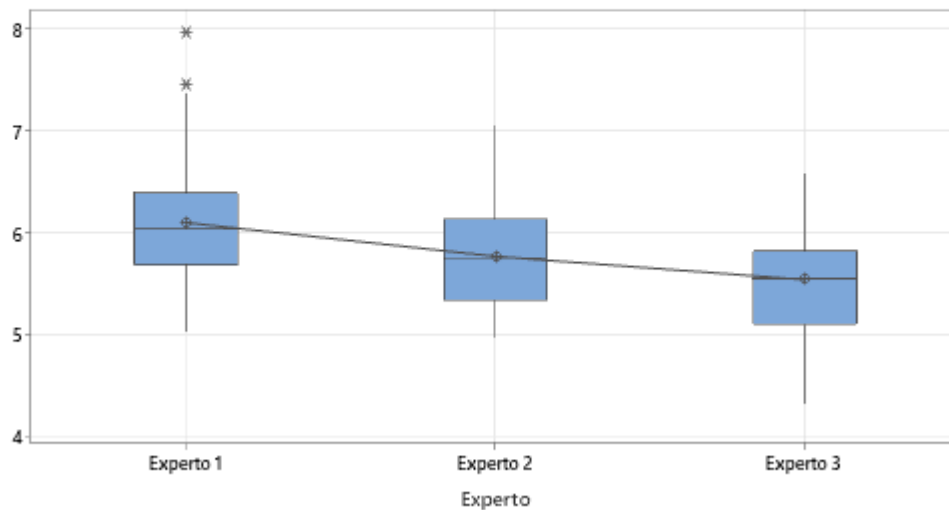## iso42 by Modelo
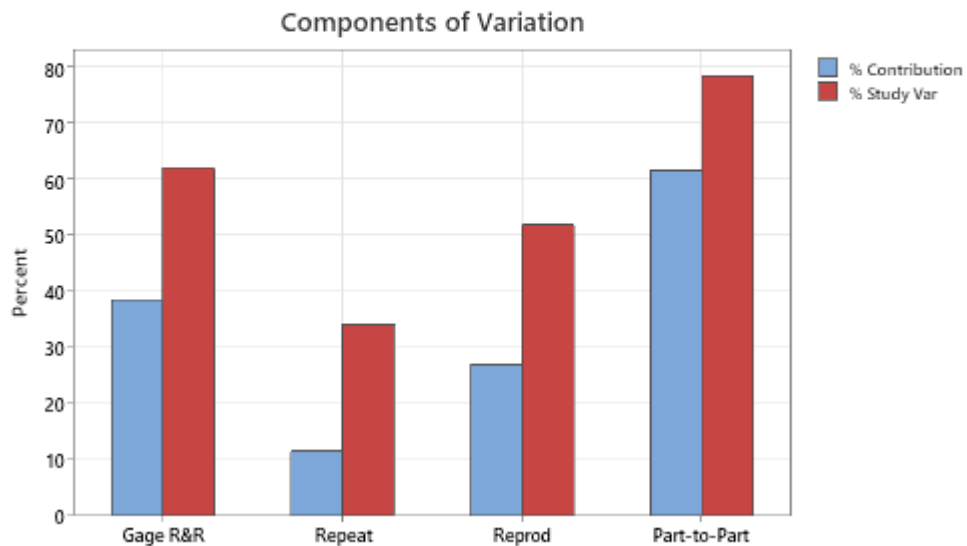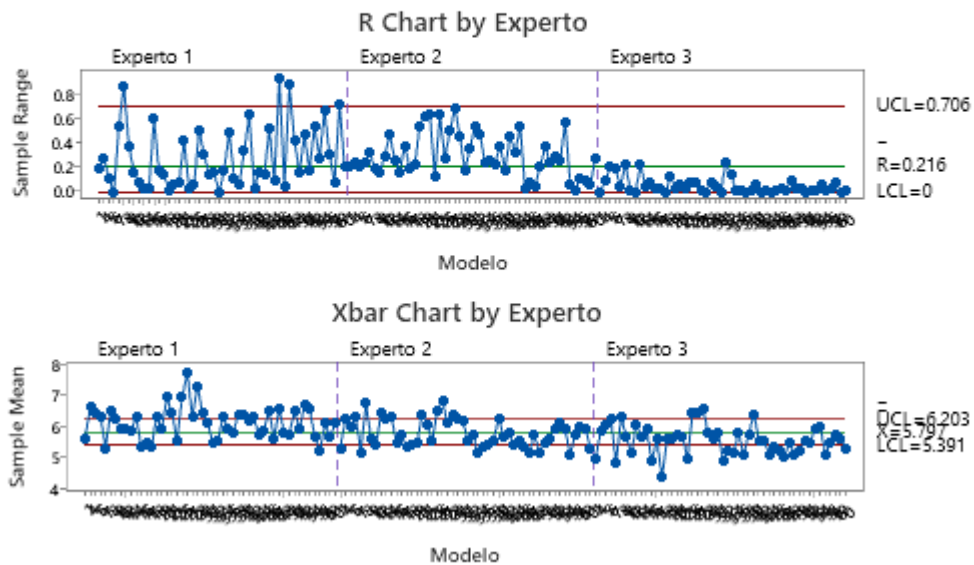
Gage R&R (Xbar/R) for iso42

Gage name:
Date of study:

Reported by:
Tolerance:
Misc:

iso42 by Experto

Gage R&R (Xbar/R) for iso42

Gage name:
Date of study:

Reported by:
Tolerance:
Misc:

Modelo * Experto Interaction
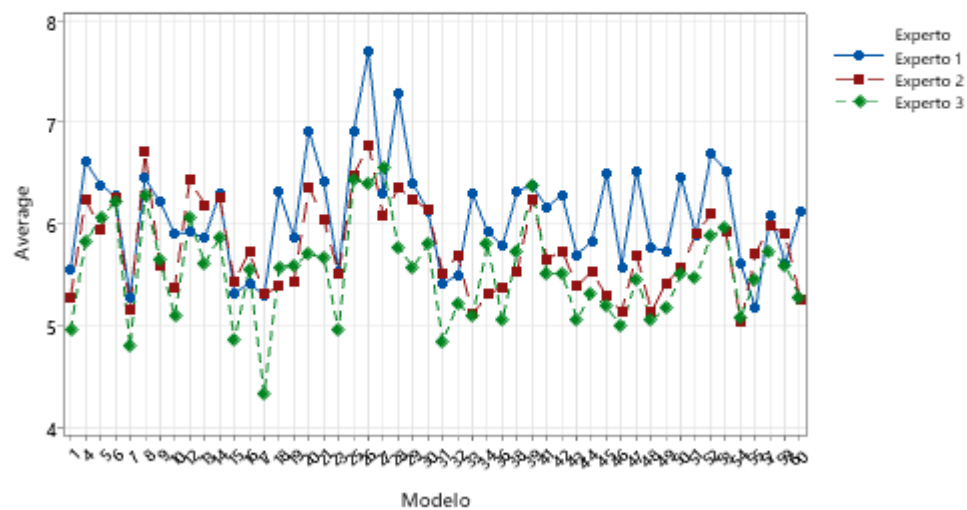
Variance Components

Source	VarComp	%Contribution (of VarComp)
Total Gage R&R	0.309667	68.91
Repeatability	0.033620	7.48
Reproducibility	0.276048	61.43
Part-To-Part	0.139723	31.09
Total Variation	0.449390	100.00

Gage Evaluation

Source	StdDev (SD)	Study Var (6 × SD)	%Study Var (%SV)
Total Gage R&R	0.556478	3.33887	83.01
Repeatability	0.183357	1.10014	27.35
Reproducibility	0.525403	3.15242	78.38
Part-To-Part	0.373795	2.24277	55.76
Total Variation	0.670366	4.02219	100.00

Number of Distinct Categories = 1

Gage R&R (Xbar/R) for iso43

Gage R&R (Xbar/R) for iso43

Gage name:
Date of study:

Reported by:
Tolerance:
Misc:

R Chart by Experto

Experto 1   Experto 2   Experto 3

UCL=0.676

R=0.207

LCL=0

Sample Range

Modelo

Xbar Chart by Experto

Experto 1   Experto 2   Experto 3

UCL=6.845
X=6.456
LCL=6.067

Sample Mean

Modelo

Gage R&R (Xbar/R) for iso43

Gage name:
Date of study:

Reported by:
Tolerance:
Misc:

iso43 by Modelo

Modelo

Gage R&R (Xbar/R) for iso43

Gage name:
Date of study:

Reported by:
Tolerance:
Misc:

iso43 by Experto

# Gage R&R (Xbar/R) for iso43

Gage name:
Date of study:

Reported by:
Tolerance:
Misc:

Modelo * Experto Interaction

Gage R&R Study - XBar/R Method
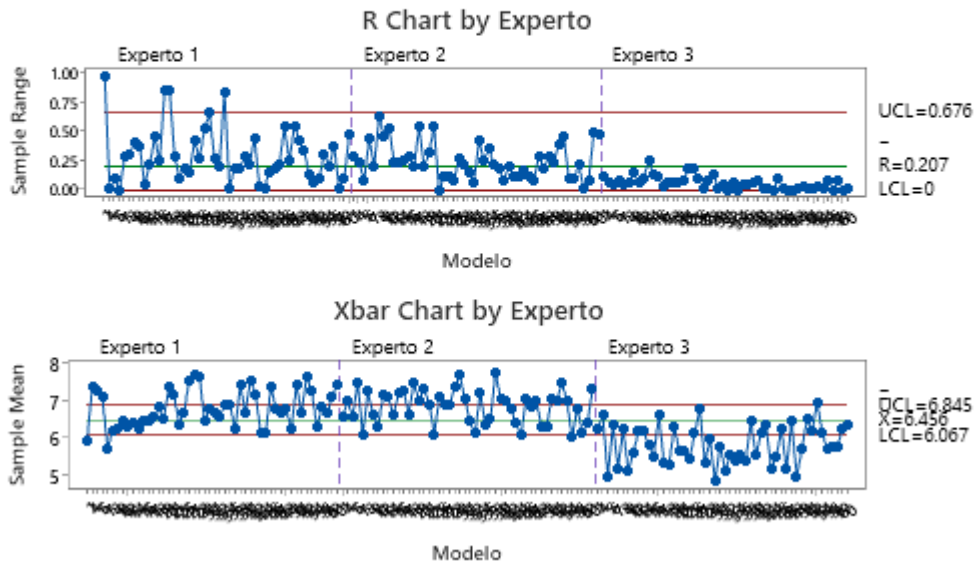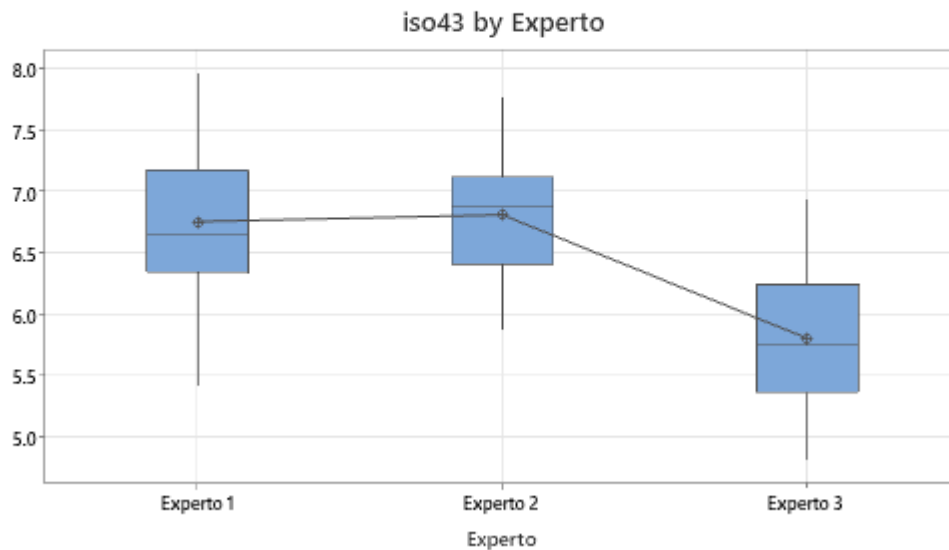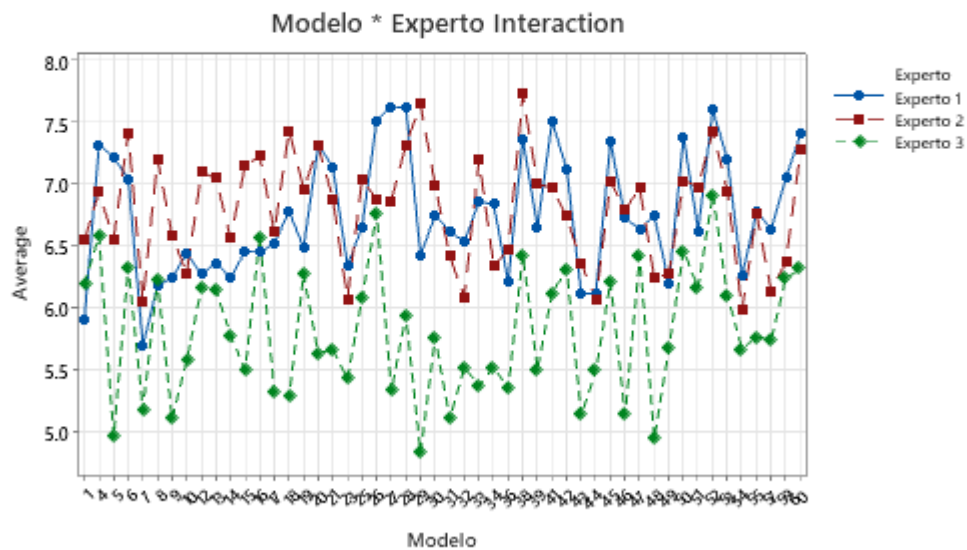
Variance Components

Source	VarComp	%Contribution (of VarComp)
Total Gage R&R	0.085810	32.69
Repeatability	0.045554	17.36
Reproducibility	0.040256	15.34
Part-To-Part	0.176669	67.31
Total Variation	0.262480	100.00

Gage Evaluation

Source	StdDev (SD)	Study Var (6 × SD)	%Study Var (%SV)
Total Gage R&R	0.292934	1.75760	57.18
Repeatability	0.213433	1.28060	41.66
Reproducibility	0.200640	1.20384	39.16
Part-To-Part	0.420321	2.52192	82.04
Total Variation	0.512328	3.07397	100.00

Number of Distinct Categories = 2

Gage R&R (Xbar/R) for iso44

R Chart by Experto

Experto 1   Experto 2   Experto 3

UCL=0.787
R=0.241
LCL=0

Xbar Chart by Experto

Experto 1   Experto 2   Experto 3

UCL=7.347
X̄=6.894
LCL=6.441

Gage R&R (Xbar/R) for iso44

iso44 by Modelo

Gage R&R (Xbar/R) for iso44

Gage name:
Date of study:

Reported by:
Tolerance:
Misc:

iso44 by Experto
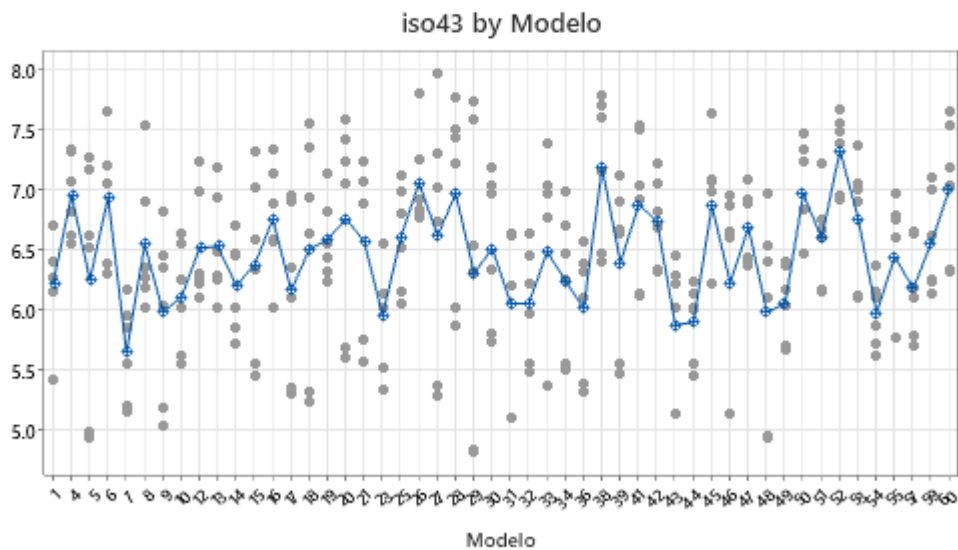

Gage R&R (Xbar/R) for iso44

Gage name:
Date of study:

Reported by:
Tolerance:
Misc:

Modelo * Experto Interaction

Gage R&R Study - XBar/R Method
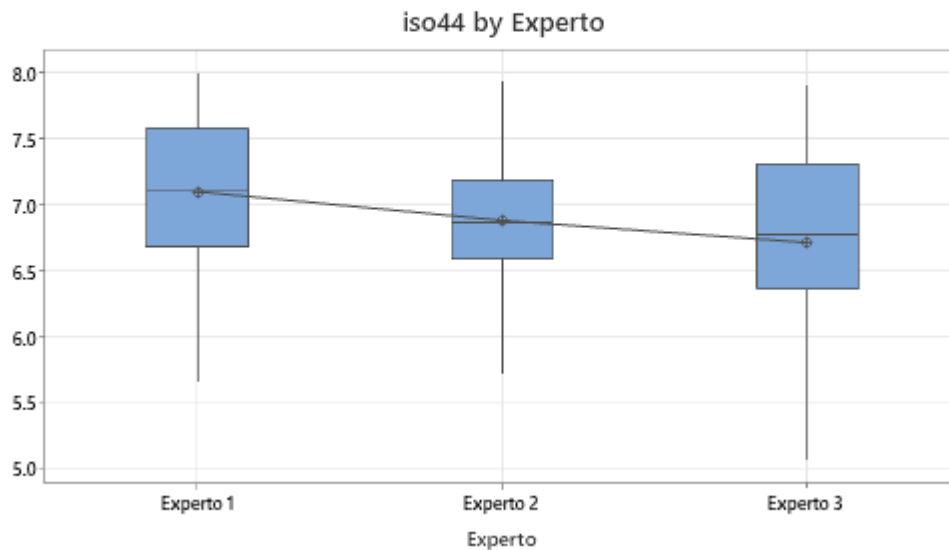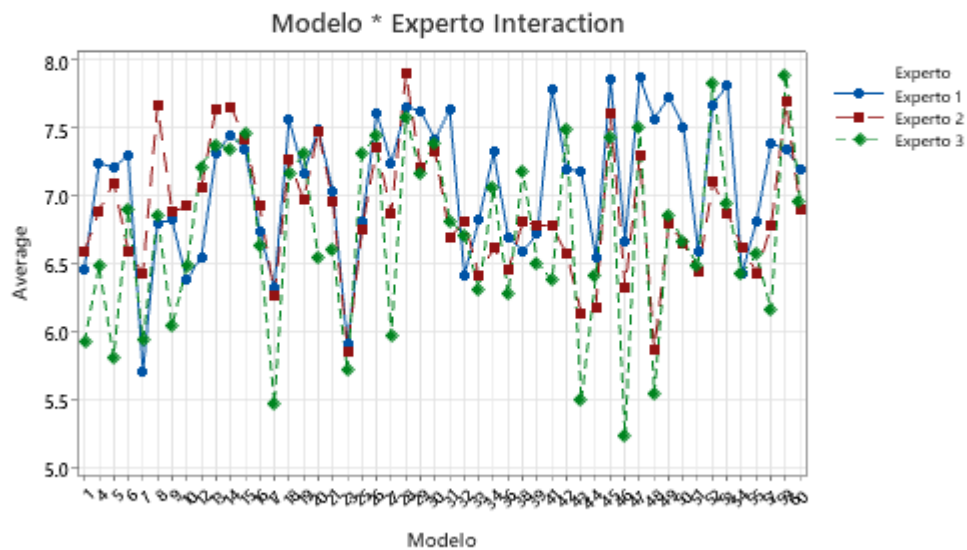
Variance Components

Source	VarComp	%Contribution (of VarComp)
Total Gage R&R	0.050171	16.24
Repeatability	0.045201	14.63
Reproducibility	0.004970	1.61
Part-To-Part	0.258691	83.76
Total Variation	0.308862	100.00

Gage Evaluation

Source	StdDev (SD)	Study Var (6 × SD)	%Study Var (%SV)
Total Gage R&R	0.223989	1.34394	40.30
Repeatability	0.212606	1.27564	38.26
Reproducibility	0.070497	0.42298	12.69
Part-To-Part	0.508617	3.05170	91.52
Total Variation	0.555753	3.33452	100.00

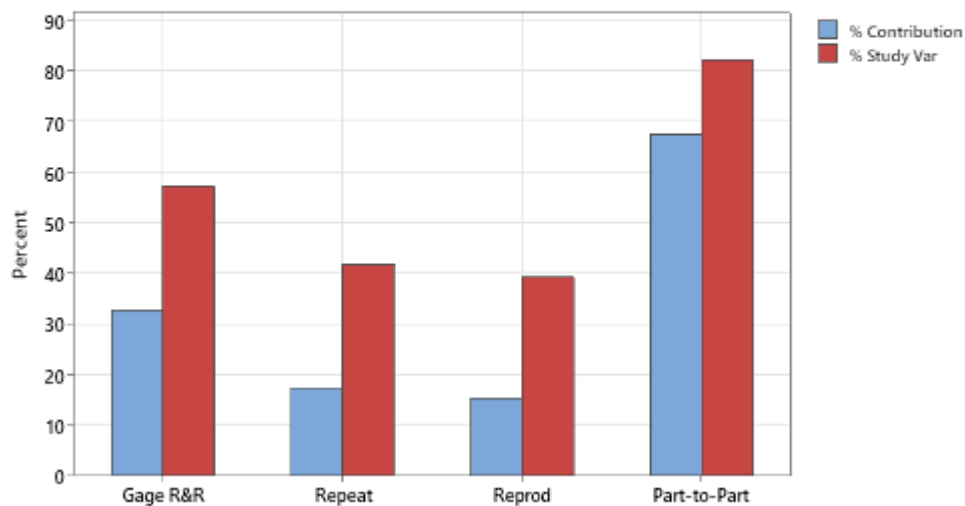Number of Distinct Categories = 3

Gage R&R (Xbar/R) for iso45
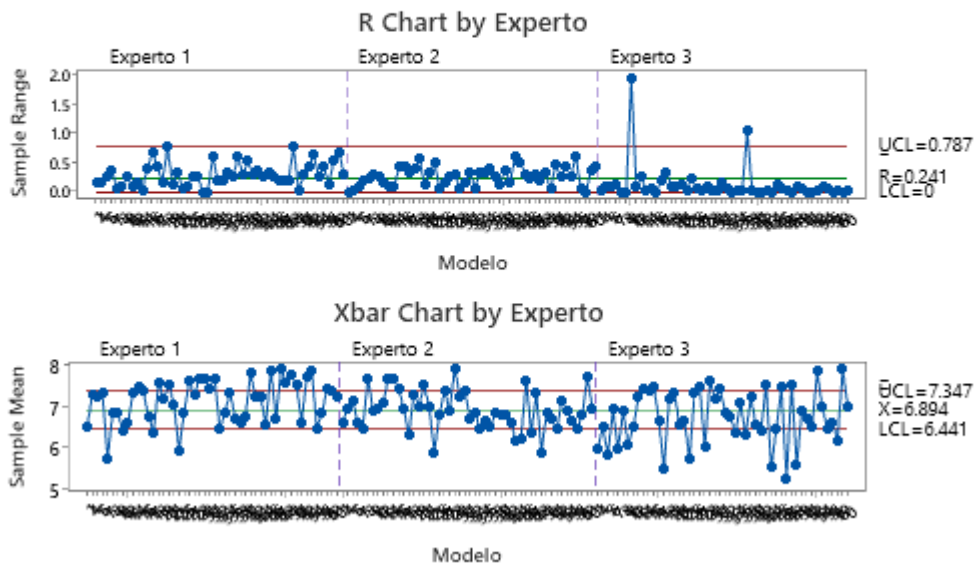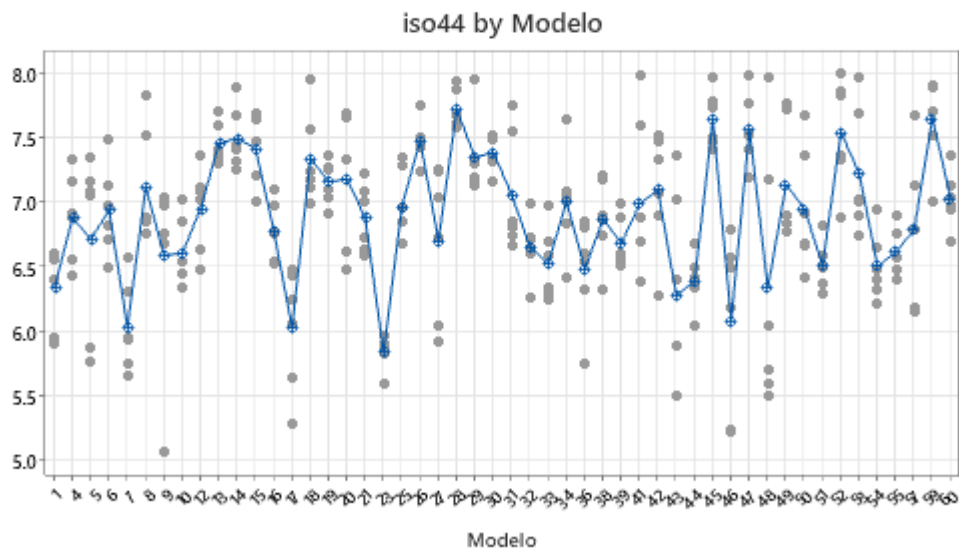
Gage name:
Date of study:

Reported by:
Tolerance:
Misc:

R Chart by Experto

Experto 1   Experto 2   Experto 3

Sample Range

UCL=0.784

R=0.240

LCL=0

Modelo

Xbar Chart by Experto

Experto 1   Experto 2   Experto 3

Sample Mean

UCL=7.272
X=6.821
LCL=6.370

Modelo

Gage R&R (Xbar/R) for iso45

Gage name:
Date of study:

Reported by:
Tolerance:
Misc:

iso45 by Modelo

Modelo

Gage R&R (Xbar/R) for iso45

Gage name:
Date of study:

Reported by:
Tolerance:
Misc:

iso45 by Experto

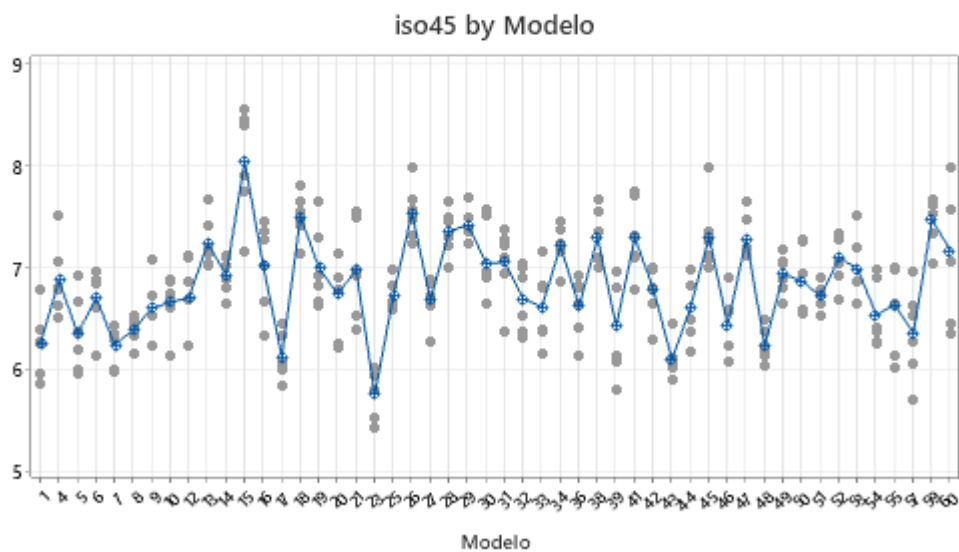# Gage R&R (Xbar/R) for iso45

Gage name:
Date of study:

Reported by:
Tolerance:
Misc:

Modelo * Experto Interaction
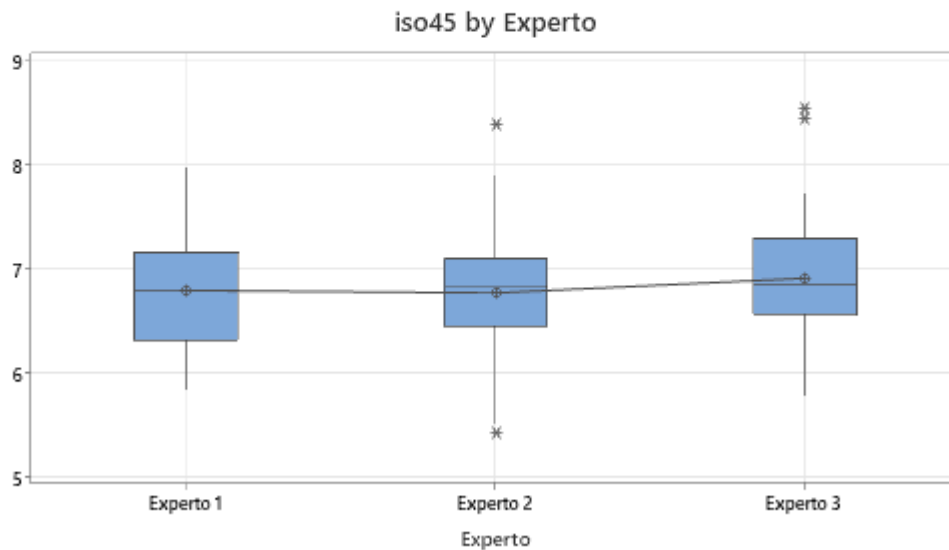
Gage R&R Study - XBar/R Method

Variance Components

Source	VarComp	%Contribution (of VarComp)
Total Gage R&R	0.061815	11.67
Repeatability	0.034140	6.45
Reproducibility	0.027674	5.22
Part-To-Part	0.467878	88.33
Total Variation	0.529693	100.00

Gage Evaluation

Source	StdDev (SD)	Study Var (6 × SD)	%Study Var (%SV)
Total Gage R&R	0.248626	1.49175	34.16
Repeatability	0.184771	1.10863	25.39
Reproducibility	0.166356	0.99814	22.86
Part-To-Part	0.684016	4.10410	93.98
Total Variation	0.727800	4.36680	100.00

Number of Distinct Categories = 3

Gage R&R (Xbar/R) for iso46

Gage R&R (Xbar/R) for iso46

Gage name:
Date of study:

Reported by:
Tolerance:
Misc:

R Chart by Experto

Experto 1   Experto 2   Experto 3

UCL=0.6812

R=0.2085

LCL=0

Sample Range

Modelo

Xbar Chart by Experto

Experto 1   Experto 2   Experto 3

UCL=10.813
X=10.421
LCL=10.029

Sample Mean

Modelo

Gage R&R (Xbar/R) for iso46

Gage name:
Date of study:

Reported by:
Tolerance:
Misc:

iso46 by Modelo

Modelo

Gage R&R (Xbar/R) for iso46

Gage name:
Date of study:

Reported by:
Tolerance:
Misc:

iso46 by Experto

Gage R&R (Xbar/R) for iso46

Gage name:
Date of study:

Reported by:
Tolerance:
Misc:

Modelo * Experto Interaction

Gage R&R Study - XBar/R Method
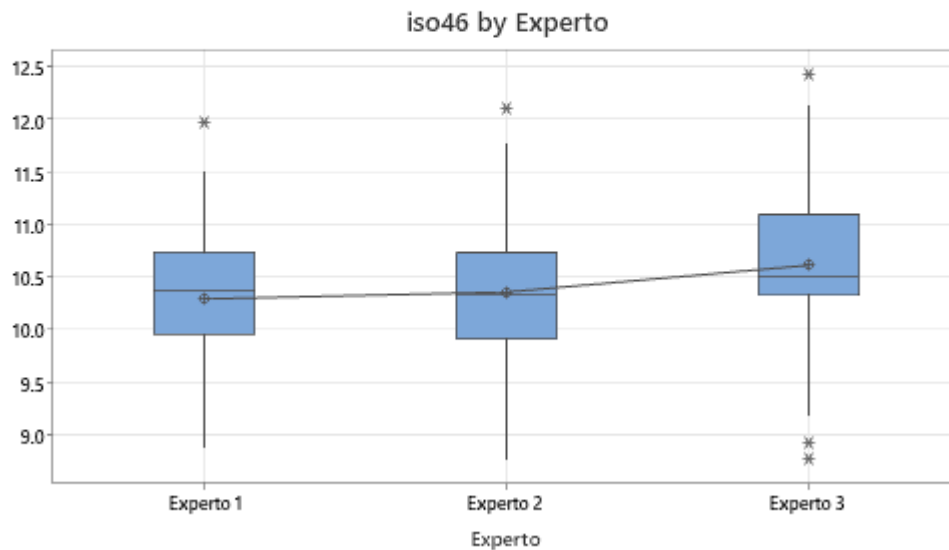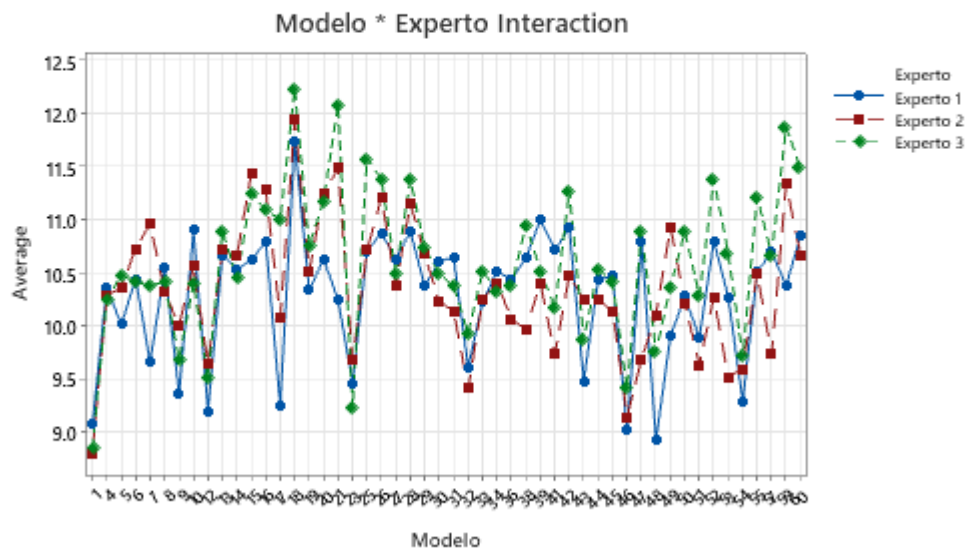
Variance Components

Source	VarComp	%Contribution (of VarComp)
Total Gage R&R	0.076583	12.70
Repeatability	0.040211	6.67
Reproducibility	0.036371	6.03
Part-To-Part	0.526429	87.30
Total Variation	0.603011	100.00

Gage Evaluation

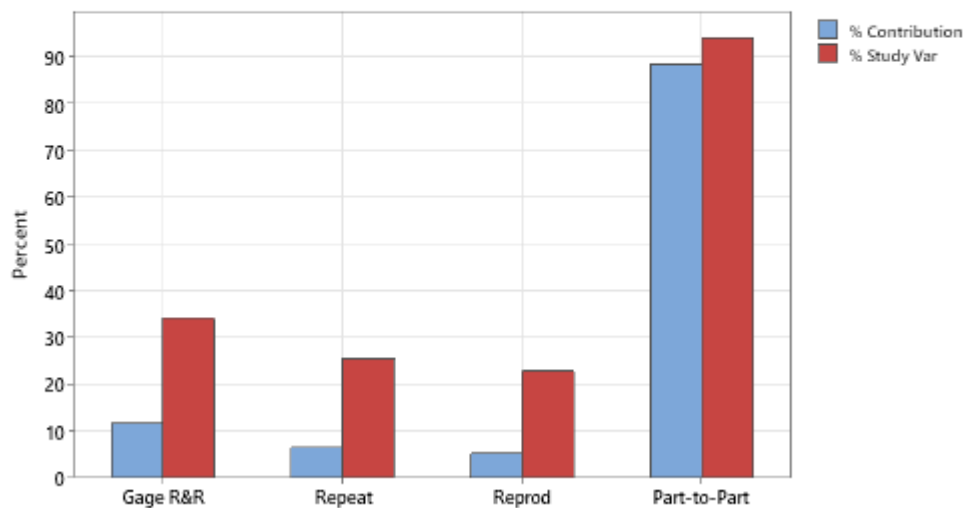| Source	StdDev (SD)	Study Var (6 × SD)	%Study Var (%SV)
Total Gage R&R	0.276736	1.66041	35.64
Repeatability	0.200528	1.20317	25.82
Reproducibility	0.190712	1.14427	24.56
Part-To-Part	0.725554	4.35333	93.43
Total Variation	0.776538	4.65923	100.00

Number of Distinct Categories = 3

Gage R&R (Xbar/R) for iso47

Gage name:
Date of study:
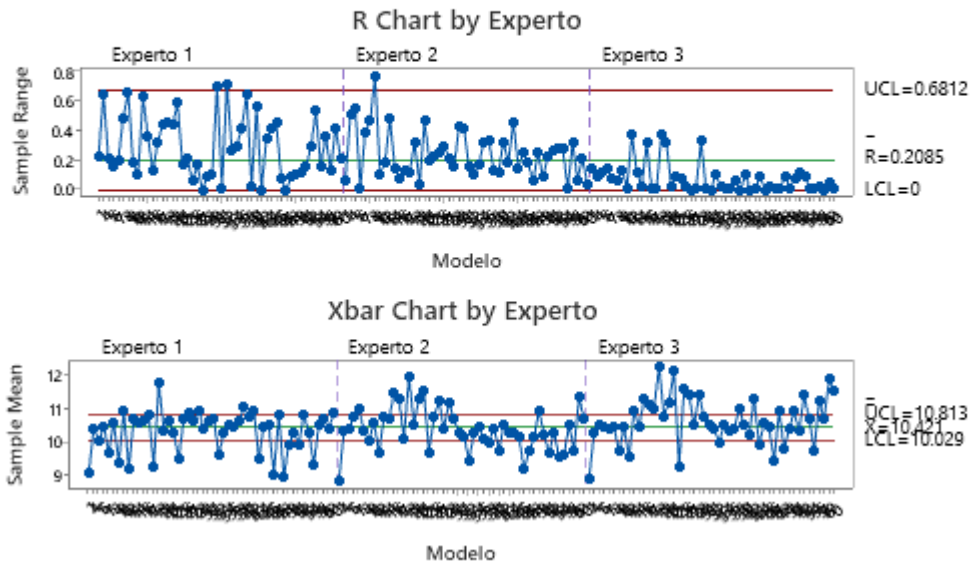
Reported by:
Tolerance:
Misc:

R Chart by Experto

UCL=0.739
R̄=0.226
LCL=0

Xbar Chart by Experto

UCL=10.273
X̄=9.847
LCL=9.422

Gage R&R (Xbar/R) for iso47

Gage name:
Date of study:

Reported by:
Tolerance:
Misc:

iso47 by Modelo
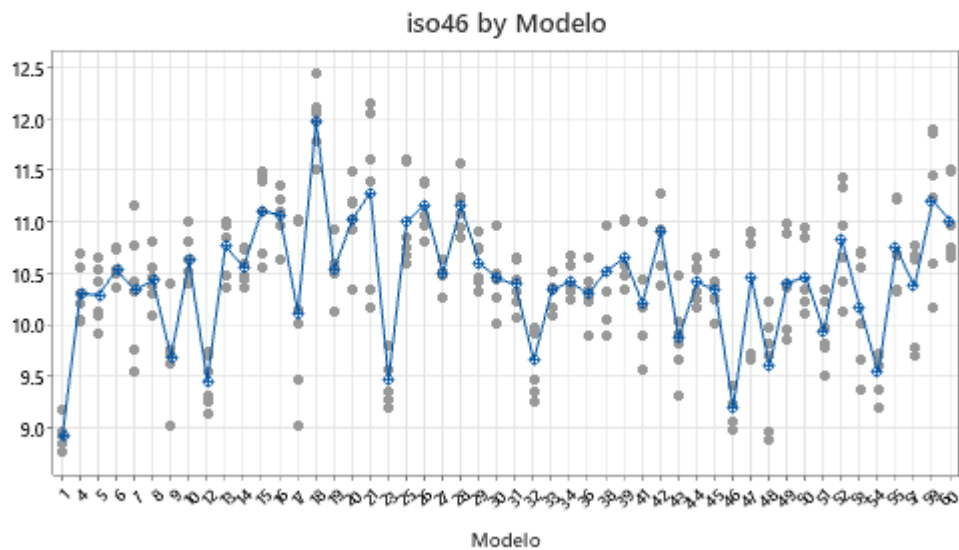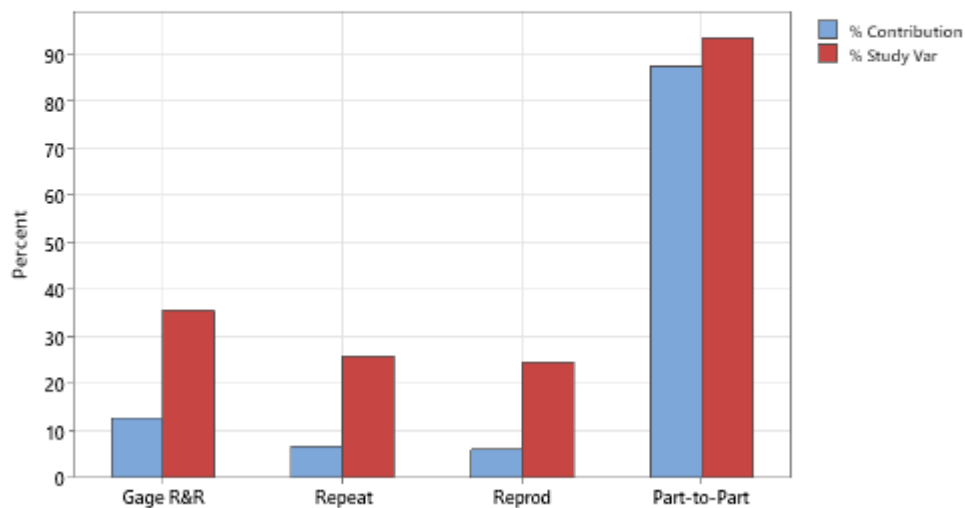
Gage R&R (Xbar/R) for iso47

Gage name:
Date of study:

Reported by:
Tolerance:
Misc:

iso47 by Experto
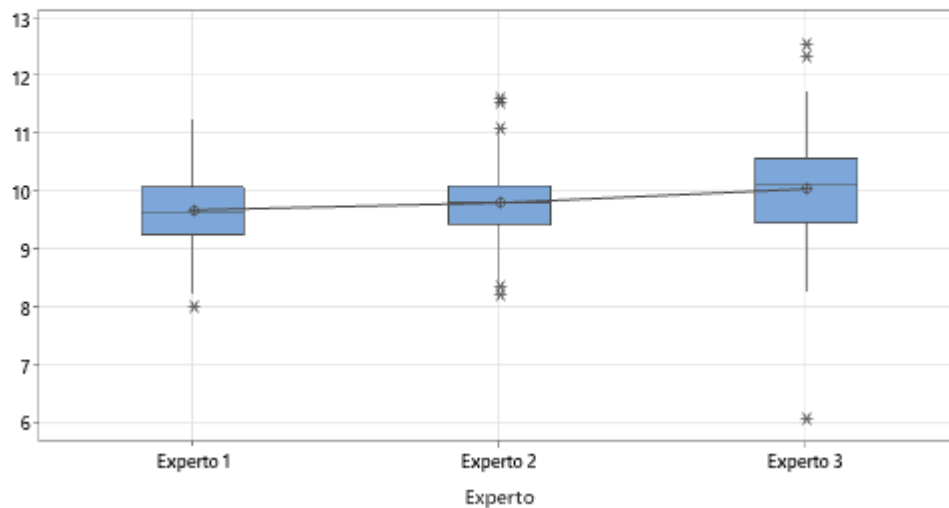
Gage R&R (Xbar/R) for iso47

Gage name:
Date of study:

Reported by:
Tolerance:
Misc:

Modelo * Experto Interaction
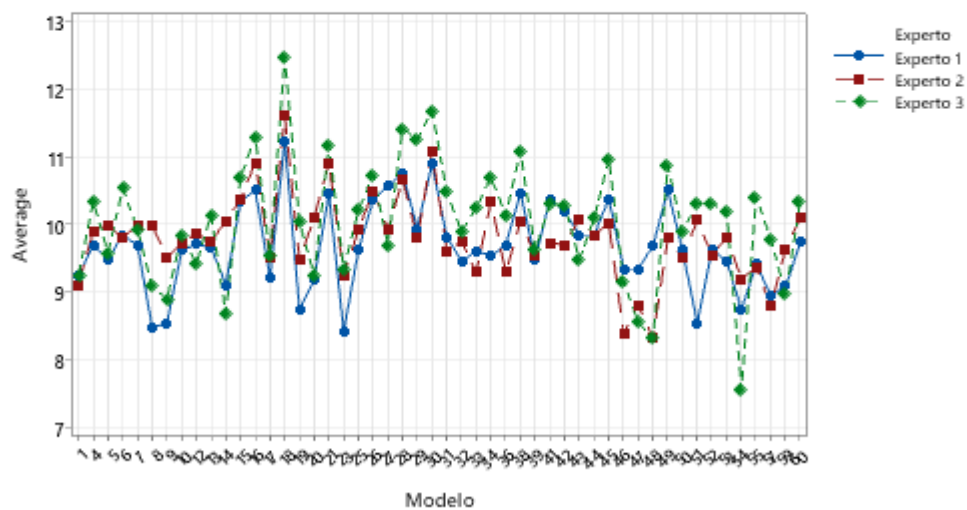
1 intercanine width, 1 intermolar width, and 2 interpremolar widths.

Gage R&R Study - XBar/R Method

Variance Components

Source	VarComp	%Contribution (of VarComp)
Total Gage R&R	0.31166	5.68
Repeatability	0.06560	1.20
Reproducibility	0.24606	4.48
Part-To-Part	5.17528	94.32
Total Variation	5.48694	100.00

Gage Evaluation

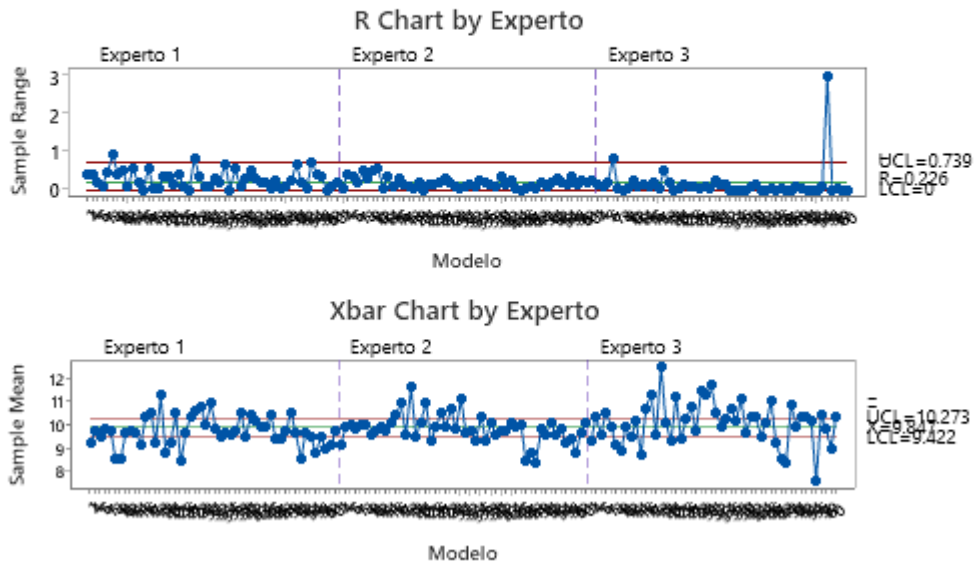| Source	StdDev (SD)	Study Var (6 × SD)	%Study Var (%SV)
Total Gage R&R	0.55826	3.3496	23.83
Repeatability	0.25612	1.5367	10.93
Reproducibility	0.49605	2.9763	21.18
Part-To-Part	2.27492	13.6495	97.12
Total Variation	2.34242	14.0545	100.00

Number of Distinct Categories = 5

Gage R&R (Xbar/R) for ancho intercanino (3-3)

Gage name:
Date of study:

Reported by:
Tolerance:
Misc:

R Chart by Experto

UCL=0.944
R=0.289
LCL=0

Xbar Chart by Experto

UCL=28.28
LCL=27.19

Gage R&R (Xbar/R) for ancho intercanino (3-3)

Gage name:
Date of study:

Reported by:
Tolerance:
Misc:

ancho intercanino (3-3) by Modelo

Gage R&R (Xbar/R) for ancho intercanino (3-3)

Gage name:
Date of study:

Reported by:
Tolerance:
Misc:

ancho intercanino (3-3) by Experto

Gage R&R (Xbar/R) for ancho intercanino (3-3)

Gage name:
Date of study:

Reported by:
Tolerance:
Misc:

Modelo * Experto Interaction

Gage R&R Study - XBar/R Method
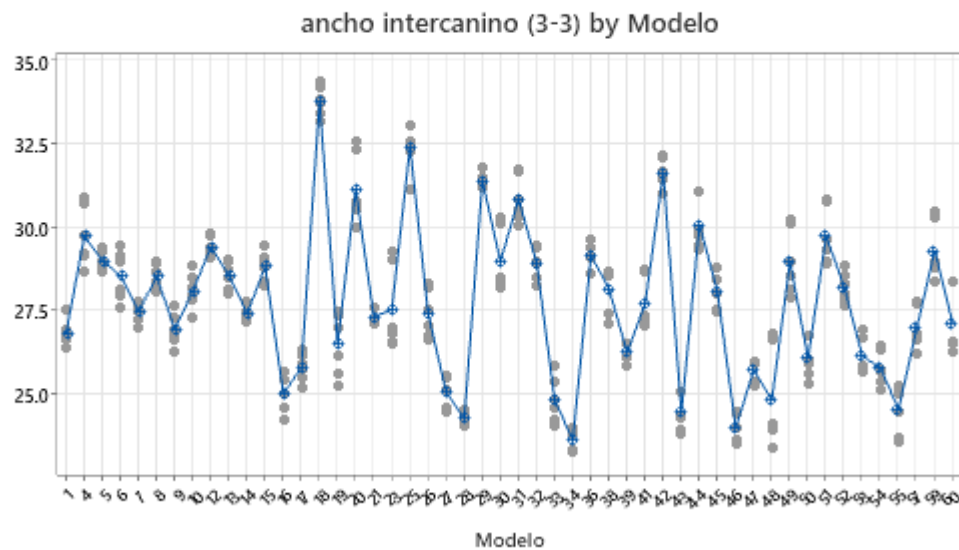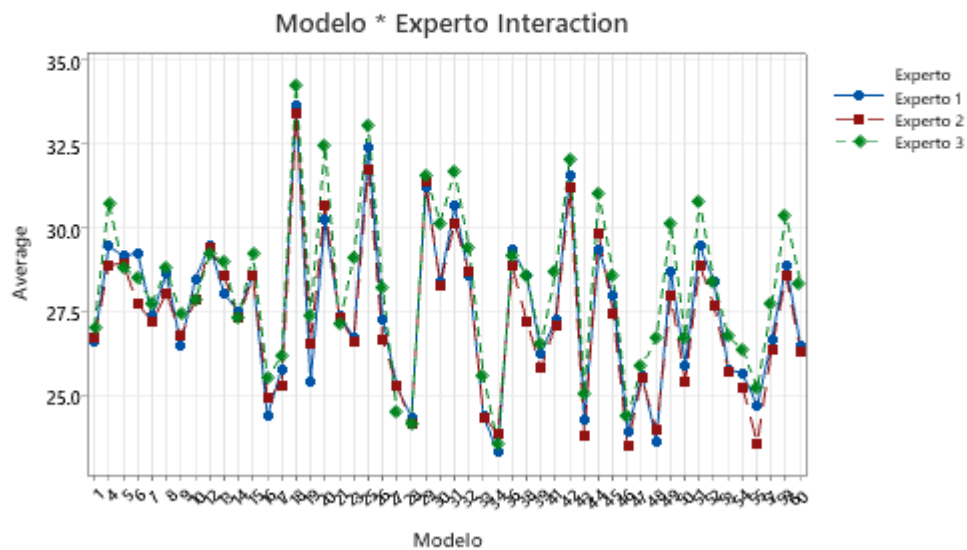
Variance Components

Source	VarComp	%Contribution (of VarComp)
Total Gage R&R	0.25336	3.54
Repeatability	0.03974	0.56
Reproducibility	0.21362	2.99
Part-To-Part	6.89888	96.46
Total Variation	7.15224	100.00

Gage Evaluation

Source	StdDev (SD)	Study Var (6 × SD)	%Study Var (%SV)
Total Gage R&R	0.50335	3.0201	18.82
Repeatability	0.19936	1.1961	7.45
Reproducibility	0.46219	2.7731	17.28
Part-To-Part	2.62657	15.7594	98.21
Total Variation	2.67437	16.0462	100.00

Number of Distinct Categories = 7

Gage R&R (Xbar/R) for anchura interpremolar (4-4)

Gage R&R (Xbar/R) for anchura interpremolar (4-4)

Gage name:
Date of study:

Reported by:
Tolerance:
Misc:

R Chart by Experto

Experto 1   Experto 2   Experto 3

UCL=0.735
R=0.225
LCL=0

Sample Range
Modelo

Xbar Chart by Experto

Experto 1   Experto 2   Experto 3

UCL=28.00
LCL=28.13

Sample Mean
Modelo

Gage R&R (Xbar/R) for anchura interpremolar (4-4)

Gage name:
Date of study:

Reported by:
Tolerance:
Misc:

anchura interpremolar (4-4) by Modelo

Modelo
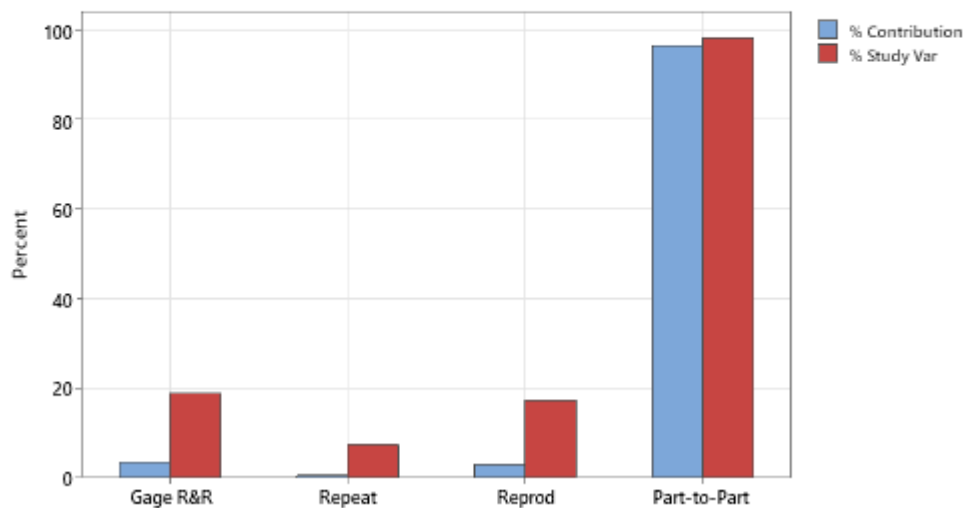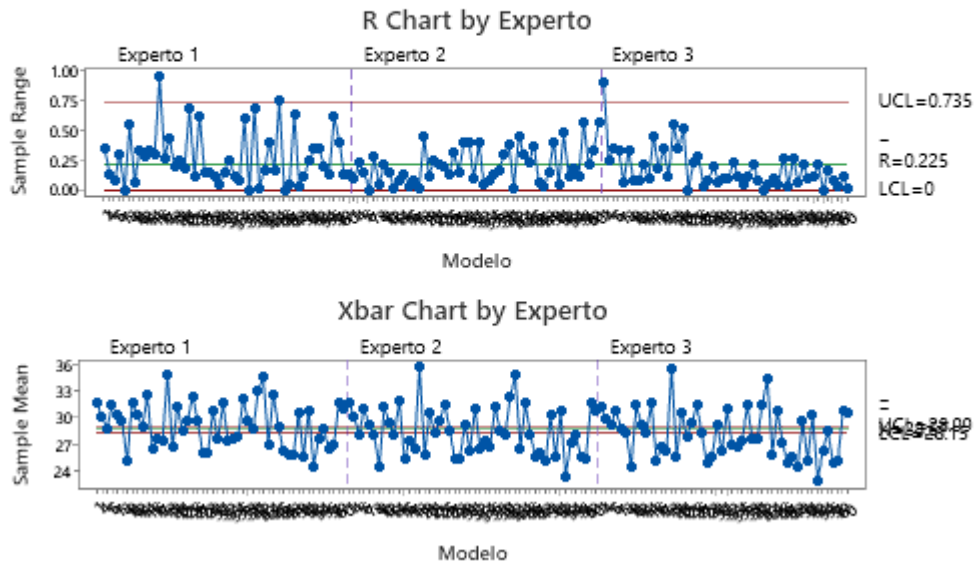
Gage R&R (Xbar/R) for anchura interpremolar (4-4)

anchura interpremolar (4-4) by Experto

Gage R&R (Xbar/R) for anchura interpremolar (4-4)

Modelo * Experto Interaction
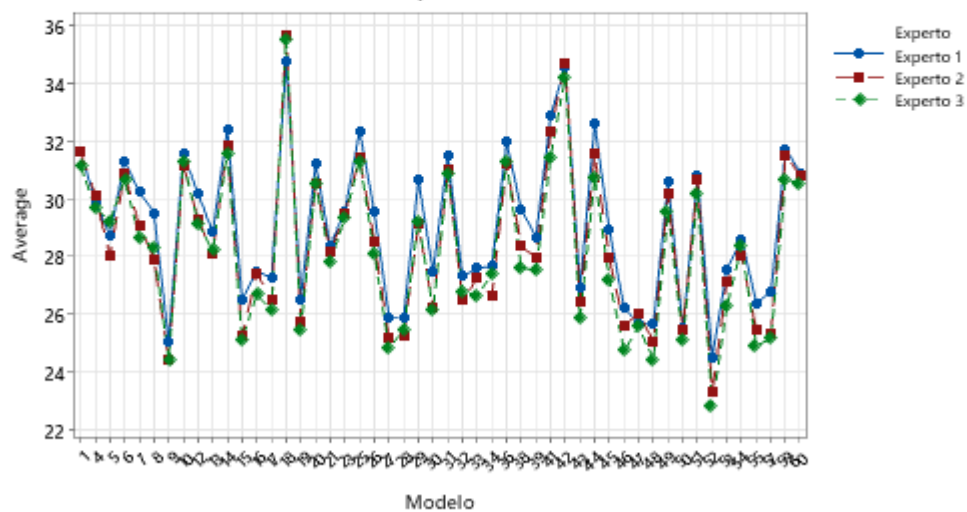
Gage R&R Study - XBar/R Method

Variance Components

Source	VarComp	%Contribution (of VarComp)
Total Gage R&R	0.24435	2.67
Repeatability	0.06522	0.71
Reproducibility	0.17913	1.95
Part-To-Part	8.92392	97.33
Total Variation	9.16827	100.00

Gage Evaluation

Source	StdDev (SD)	Study Var (6 × SD)	%Study Var (%SV)
Total Gage R&R	0.49432	2.9659	16.33
Repeatability	0.25538	1.5323	8.43
Reproducibility	0.42324	2.5394	13.98
Part-To-Part	2.98729	17.9238	98.66
Total Variation	3.02791	18.1675	100.00

Number of Distinct Categories = 8

Gage R&R (Xbar/R) for anchura interpremolar (5-5)

Gage R&R (Xbar/R) for anchura interpremolar (5-5)

Gage name:
Date of study:

Reported by:
Tolerance:
Misc:

R Chart by Experto

Experto 1   Experto 2   Experto 3

Sample Range

UCL=0.942
R=0.288
LCL=0

Modelo

Xbar Chart by Experto

Experto 1   Experto 2   Experto 3

Sample Mean

UCL=33.07
LCL=31.69

Modelo

Gage R&R (Xbar/R) for anchura interpremolar (5-5)

Gage name:
Date of study:

Reported by:
Tolerance:
Misc:

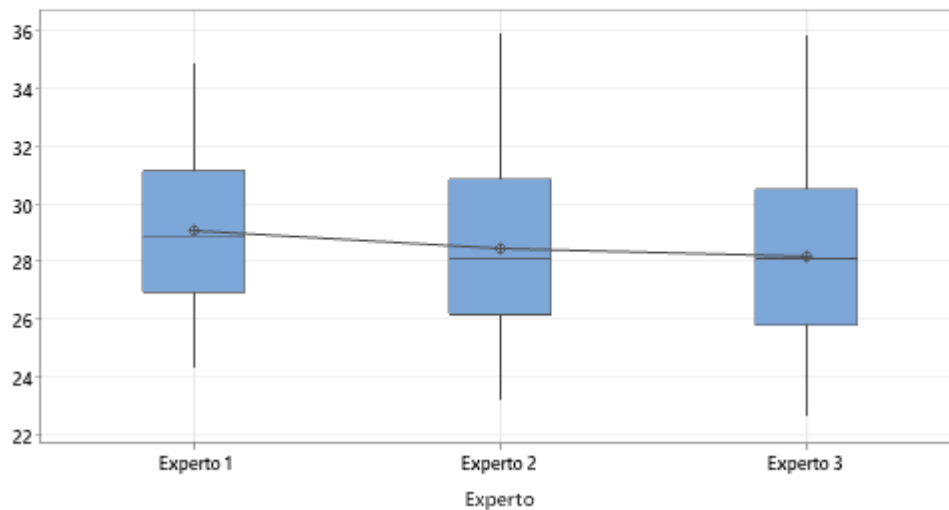## anchura interpremolar (5-5) by Modelo

Modelo

Gage R&R (Xbar/R) for anchura interpremolar (5-5)

Gage name:
Date of study:

Reported by:
Tolerance:
Misc:

## anchura interpremolar (5-5) by Experto

Gage R&R (Xbar/R) for anchura interpremolar (5-5)

Gage name:
Date of study:

Reported by:
Tolerance:
Misc:

Modelo * Experto Interaction

TESIS 37 TO 47 LOWER
Gage R&R Study - XBar/R Method
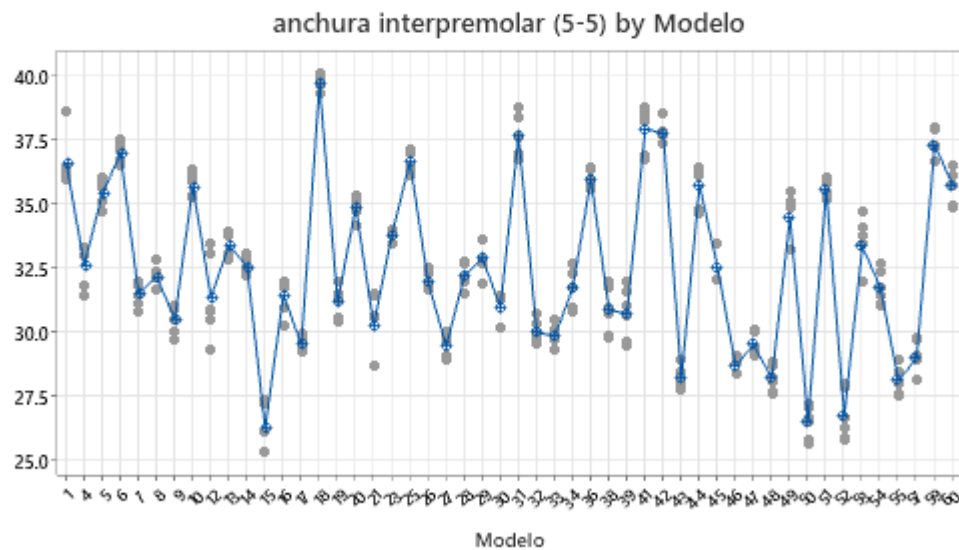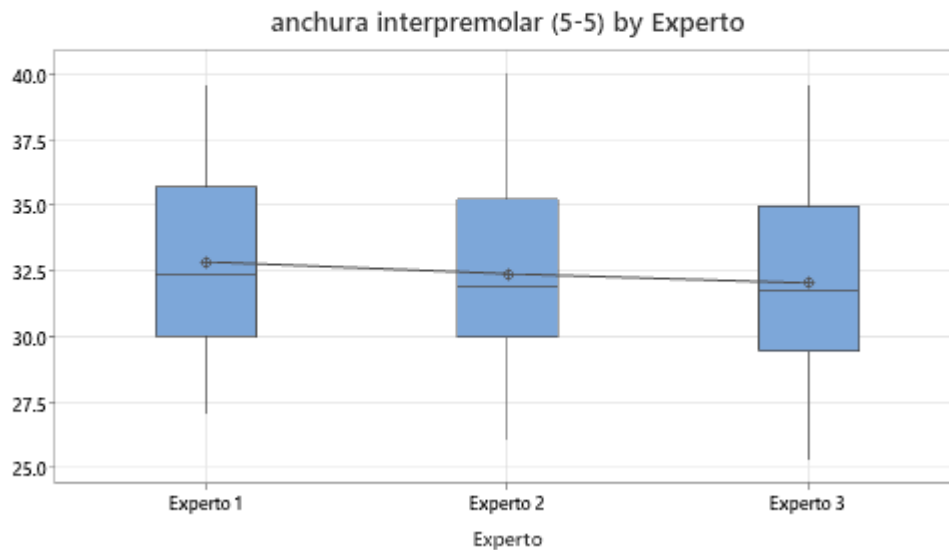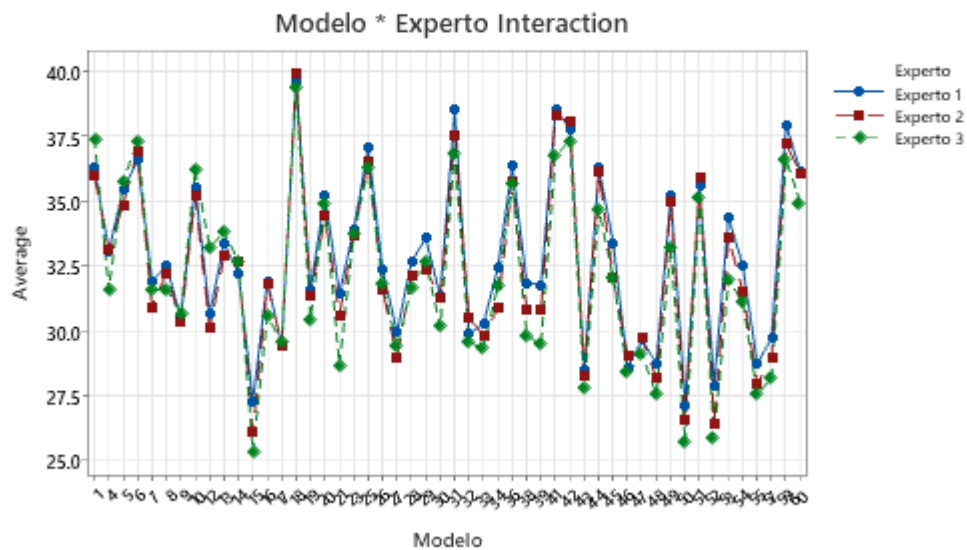
Variance Components

Source	VarComp	%Contribution (of VarComp)
Total Gage R&R	0.61108	7.75
Repeatability	0.06791	0.86
Reproducibility	0.54316	6.89
Part-To-Part	7.26940	92.25
Total Variation	7.88048	100.00

Gage Evaluation

Source	StdDev (SD)	Study Var (6 × SD)	%Study Var (%SV)
Total Gage R&R	0.78171	4.6903	27.85
Repeatability	0.26060	1.5636	9.28
Reproducibility	0.73700	4.4220	26.25
Part-To-Part	2.69618	16.1771	96.04
Total Variation	2.80722	16.8433	100.00

Number of Distinct Categories = 4

Gage R&R (Xbar/R) for ancho intermolar

Gage R&R (Xbar/R) for ancho intermolar

Gage name:
Date of study:

R Chart by Experto

Experto 1   Experto 2   Experto 3

Sample Range

UCL=0.961
R=0.294
LCL=0

Modelo

Xbar Chart by Experto

Experto 1   Experto 2   Experto 3

Sample Mean

=
UCL=36.39
LCL=35.27

Modelo

Gage R&R (Xbar/R) for ancho intermolar

Gage name:
Date of study:

ancho intermolar by Modelo

Modelo
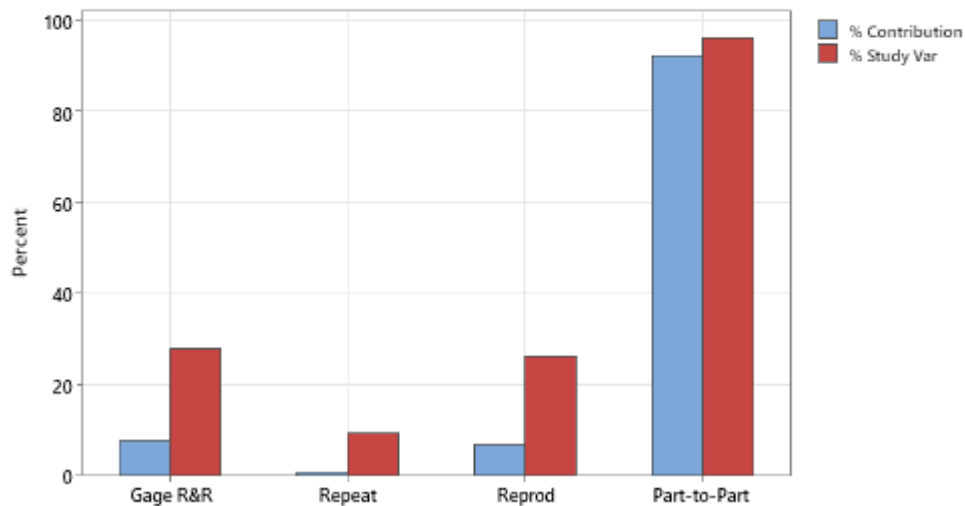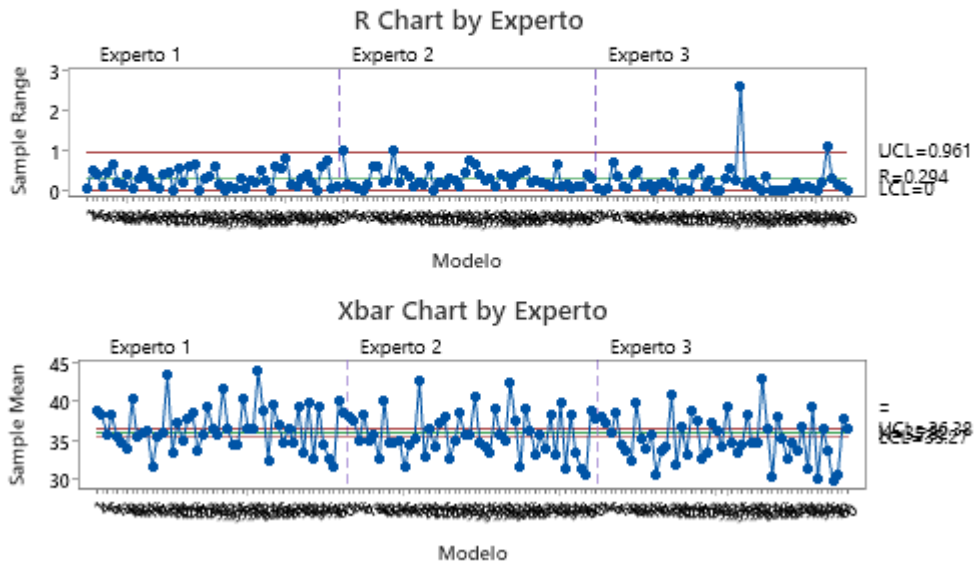
Gage R&R (Xbar/R) for ancho intermolar

Gage name:
Date of study:

Reported by:
Tolerance:
Misc:

ancho intermolar by Experto

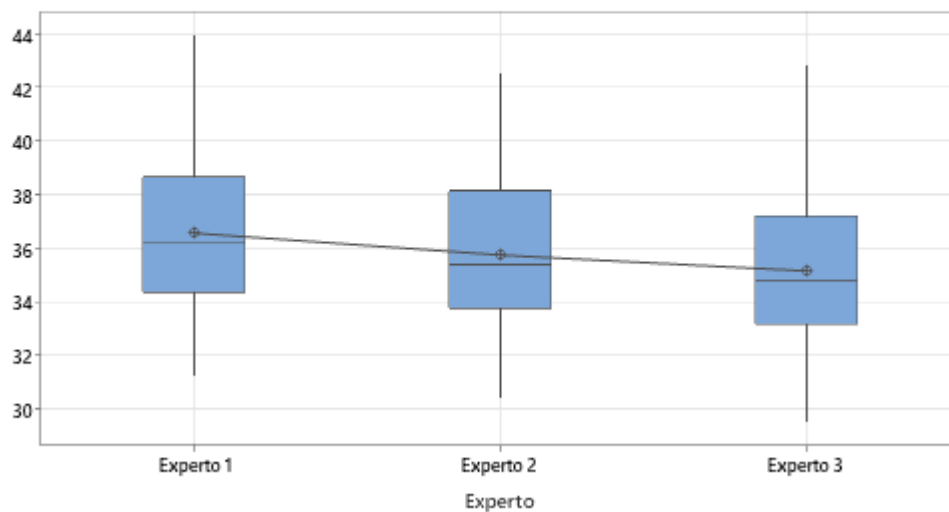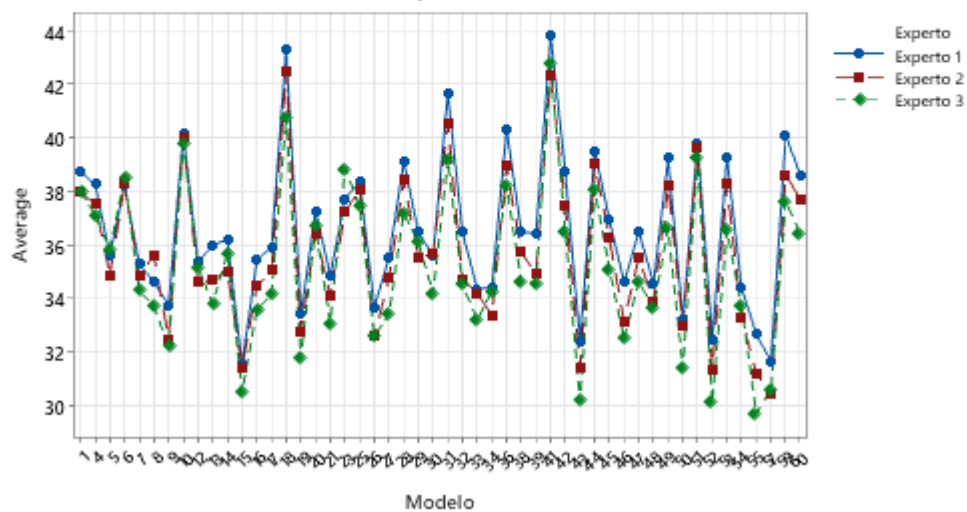# Gage R&R (Xbar/R) for ancho intermolar

Gage name:
Date of study:

Reported by:
Tolerance:
Misc:

Modelo * Experto Interaction

Based on the series of Gage R&R studies, the data shows a range of variations and contributions to total variance by different components (Total Gage R&R, Repeatability, Reproducibility, Part-To-Part) across different measurements of TESIS 37 TO 47 LOWER using the XBar/R method. Here's a consolidated conclusion from the studies:

Variation in Total Gage R&R and its Components (Repeatability and Reproducibility): The percentage contribution of Total Gage R&R to the total variation exhibits a wide range across the studies, indicating variability in the measurement system's precision and reliability. Studies show Total Gage R&R percentage contributions as low as 5.68% and as high as 68.91%, pointing to significant differences in the measurement system's performance across different setups or conditions. Repeatability and Reproducibility also vary widely, suggesting that both the inherent variability of the measurement process and the differences among operators or measurement methods contribute significantly to the overall measurement uncertainty in some studies more than others.

Part-To-Part Variation Dominance: A consistent observation across almost all studies is the dominance of Part-To-Part variation, which in most cases, contributes the majority of the total variation. This indicates that the variability between the parts being measured is generally larger than the measurement system's variability, suggesting that the parts themselves have inherent differences that are significant. However, the degree to which Part-To-Part variation dominates varies, suggesting differences in batch consistency or measurement challenges across the different measurement sets.

Number of Distinct Categories: The number of distinct categories (ranging from 1 to 8 across the studies) indicates the resolution or discrimination capability of the measurement system. Higher numbers suggest better discrimination among different part sizes or conditions, which is crucial for quality control and decision-making processes. Some studies result in higher discrimination capability, which could be attributed to lower overall measurement system variability or greater inherent part variability that the system is effectively capturing.

Impact on Quality Control and Decision Making: The variability in measurement system performance, as indicated by the Gage R&R studies, has significant implications for quality control and decision-making processes. Systems with high Total Gage R&R variability, especially due to high Reproducibility variance, may require improvements or standardization efforts to reduce operator-induced variability. Additionally, understanding the source of variability (whether from the measurement system or inherent part differences) is crucial for implementing effective quality control strategies.

Dental widths—1 intercanine width, 1 intermolar width, and 2 interpremolar widths

The data specifically related to dental widths—1 intercanine width, 1 intermolar width, and 2 interpremolar widths—present in the latter part of your Gage R&R studies, indicate more favorable measurement outcomes compared to other metrics previously discussed. Here's a deeper look into why these dental width measurements show a better performance in terms of measurement reliability and discrimination capability:

Lower Total Gage R&R Contributions: For dental width measurements, the Total Gage R&R as a percentage of the total variance is relatively low across these specific studies (ranging from 2.67% to 7.75%). This indicates a smaller contribution of the measurement system's variability (encompassing both repeatability and reproducibility) to the total observed variability. A lower Total Gage R&R percentage suggests that the

measurement system is more reliable and consistent when measuring dental widths, leading to higher confidence in distinguishing between different parts or conditions based on these measurements.

Increased Number of Distinct Categories: The number of distinct categories achievable in these studies ranges from 4 to 8, which is on the higher end compared to other measurements. The number of distinct categories is a direct indicator of the measurement system's ability to differentiate between parts. A higher number suggests that the system can effectively distinguish between more subtle differences in dental widths, which is crucial for accurate and nuanced assessments in dental studies or treatments.

Part-To-Part Variability: Despite the dominance of Part-To-Part variability in these studies (indicating that the majority of total variation comes from actual differences between the parts being measured rather than measurement error), the measurement system still shows a high capability to distinguish between these differences effectively. This dominance is expected and desired in a context where the actual differences between dental widths are of interest, as it suggests that the measurement system is sensitive enough to capture true variances among samples.

Implications for Quality Control and Dental Measurements: The favorable results in these dental width measurements indicate that the measurement system used is particularly well-suited for assessing dental widths. This is critical for dental research, orthodontic planning, and quality control in dental product manufacturing, where precise measurement of dental widths is essential for ensuring accurate diagnostics, treatment planning, and product fit.

The Gage R&R studies for dental widths (intercanine width, intermolar width, and interpremolar widths) demonstrate better measurement system performance compared to other dimensions previously evaluated.

Conclusion:

The improved performance of the Gage R&R studies for dental widths, focusing on the intercanine width, intermolar width, and interpremolar widths, not only demonstrates the reliability of the measurement system but also supports the design philosophy behind DentalArch v2. This version simplifies the dental measurement process by concentrating on just four key measurements, which are among the ones that showed better measurement system performance in the Gage R&R studies. This simplification contributes to DentalArch v2's ability to deliver quicker results, which is a significant advantage in clinical settings where time efficiency is crucial.

Although DentalArch v2 reports a slight decrease in accuracy—93.0% for the lower jaw (a decrease of 1.7%) and 92.7% for the upper jaw (a decrease of 0.3%)—the emphasis on these four specific measurements ensures that the system remains highly effective. The minor reduction in accuracy is a trade-off for the increased efficiency and ease of use, which can be particularly valuable in fast-paced environments or situations where rapid decision-making is required. Moreover, the accuracy levels remain impressively high, indicating that DentalArch v2 still provides a reliable basis for dental assessments and treatment planning.

This strategic focus on key measurements, proven to be reliable through Gage R&R studies, aligns with a trend towards streamlined diagnostic tools in healthcare. These tools prioritize user-friendliness and efficiency, sometimes at the cost of a small reduction in accuracy, to improve overall patient care and operational efficiency. In the case of DentalArch v2, the decision to concentrate on four critical dental widths underscores a well-considered balance between precision, speed, and practicality in dental measurements, making it an attractive option for both clinical and research application.