

# Differences in Niti and Glide Path Rotary System: Preparation of Canal Centering and Transportation in Double-curved Root Canals



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## Appendix 1. Statistical test results description statistics transportation group 1.

Descriptive Statistics					
-	N	Minimum	Maximum	Mean	Std. Deviation
Transportation Point 0	6	.11	.23	.1820	.04212
Transportation Point 1	6	-.16	.17	-.0247	.12227
Transportation Point 2	6	-.16	-.03	-.1165	.04861
Transportation Point 3	6	-.10	.01	-.0528	.04589
Transportation Point 4	6	.04	.16	.0873	.04858
Transportation Point 5	6	.13	.32	.1967	.06839
Transportation Point 6	6	.09	.33	.1903	.08680
Transportation Point 7	6	.01	.23	.1127	.07506
Transportation Point 8	6	-.04	.16	.0502	.07741
Transportation Point 9	6	-.11	.12	-.0048	.08212
Valid N (listwise)	6	-	-	-	-

## Group 2.

Descriptive Statistics					
-	N	Minimum	Maximum	Mean	Std. Deviation
Transportation Point 0	6	.15	.28	.2330	.04460
Transportation Point 1	6	-.09	.15	-.0062	.08956
Transportation Point 2	6	-.16	.03	-.0675	.07641
Transportation Point 3	6	-.11	.09	-.0117	.07144
Transportation Point 4	6	-.08	.17	.0783	.08679

Descriptive Statistics					
-	N	Minimum	Maximum	Mean	Std. Deviation
Transportation Point 5	6	.04	.26	.1678	.07453
Transportation Point 6	6	.03	.26	.1472	.07985
Transportation Point 7	6	.02	.20	.1123	.07487
Transportation Point 8	6	.00	.16	.0865	.07235
Transportation Point 9	6	-.02	.16	.0818	.06988
Valid N (listwise)	6	-	-	-	-

**Group 3.**

Descriptive Statistics					
-	N	Minimum	Maximum	Mean	Std. Deviation
Transportation Point 0	6	.24	.29	.2633	.01860
Transportation Point 1	6	-.12	.05	-.0422	.06814
Transportation Point 2	6	-.21	-.15	-.1785	.02546
Transportation Point 3	6	-.11	-.03	-.0655	.03727
Transportation Point 4	6	.00	.13	.0795	.05013
Transportation Point 5	6	.11	.26	.2080	.05545
Transportation Point 6	6	.12	.27	.2230	.05556
Transportation Point 7	6	.04	.19	.1113	.05063
Transportation Point 8	6	-.02	.08	.0340	.03497
Transportation Point 9	6	-.11	.02	-.0298	.04928
Valid N (listwise)	6	-	-	-	-

**Group 4.**

Descriptive Statistics					
-	N	Minimum	Maximum	Mean	Std. Deviation
Transportation Point 0	6	.15	.27	.2235	.05168
Transportation Point 1	6	-.11	-.01	-.0567	.03403
Transportation Point 2	6	-.17	-.09	-.1223	.03015
Transportation Point 3	6	-.08	.06	-.0083	.05152
Transportation Point 4	6	.07	.15	.1160	.03090
Transportation Point 5	6	.15	.26	.2178	.04315
Transportation Point 6	6	.13	.27	.2082	.06013
Transportation Point 7	6	.07	.18	.1357	.04927
Transportation Point 8	6	.02	.11	.0732	.04013
Transportation Point 9	6	-.05	.09	.0382	.04745
Valid N (listwise)	6	-	-	-	-

**Group 5.**

Descriptive Statistics					
-	N	Minimum	Maximum	Mean	Std. Deviation
Transportation Point 0	6	.19	.28	.2337	.03045
Transportation Point 1	6	-.14	.05	-.0573	.06893
Transportation Point 2	6	-.15	-.02	-.0852	.04327
Transportation Point 3	6	-.10	.01	-.0310	.03790
Transportation Point 4	6	.00	.11	.0648	.03985
Transportation Point 5	6	.11	.18	.1472	.02701
Transportation Point 6	6	.08	.18	.1242	.04266
Transportation Point 7	6	.00	.12	.0725	.04549

Descriptive Statistics					
-	N	Minimum	Maximum	Mean	Std. Deviation
Transportation Point 8	6	-.01	.10	.0448	.04475
Transportation Point 9	6	-.03	.10	.0295	.04354
Valid N (listwise)	6	-	-	-	-

**Group 6.**

Descriptive Statistics					
-	N	Minimum	Maximum	Mean	Std. Deviation
Transportation Point 0	6	.20	.27	.2403	.02543
Transportation Point 1	6	-.12	.07	-.0413	.08667
Transportation Point 2	6	-.17	-.08	-.1280	.02981
Transportation Point 3	6	-.07	.01	-.0282	.02841
Transportation Point 4	6	.06	.14	.0950	.03669
Transportation Point 5	6	.16	.27	.2098	.03798
Transportation Point 6	6	.14	.31	.2113	.06503
Transportation Point 7	6	.06	.22	.1200	.05880
Transportation Point 8	6	.01	.10	.0393	.03316
Transportation Point 9	6	-.05	.04	-.0098	.03584
Valid N (listwise)	6	-	-	-	-

**CENTERING****Group 1.**

Descriptive Statistics					
-	N	Minimum	Maximum	Mean	Std. Deviation
Centering Point 0	6	.43	.67	.5677	.07965
Centering Point 1	6	.06	.45	.2708	.16489
Centering Point 2	6	.07	.40	.2647	.11887
Centering Point 3	6	.01	.20	.1142	.08134
Centering Point 4	6	.06	.27	.1565	.08986
Centering Point 5	6	.21	.46	.2985	.09834
Centering Point 6	6	.13	.43	.2638	.11252
Centering Point 7	6	.02	.29	.1510	.09554
Centering Point 8	6	.03	.21	.0933	.06856
Centering Point 9	6	.00	.15	.0697	.06319
Valid N (listwise)	6	-	-	-	-

**Group 2.**

Descriptive Statistics					
-	N	Minimum	Maximum	Mean	Std. Deviation
Centering Point 0	6	.49	.72	.6313	.08267
Centering Point 1	6	.00	.38	.1597	.13778
Centering Point 2	6	.02	.37	.1792	.13389
Centering Point 3	6	.00	.23	.1190	.07737
Centering Point 4	6	.09	.29	.1848	.07847
Centering Point 5	6	.06	.41	.2643	.11652
Centering Point 6	6	.05	.37	.2112	.11166
Centering Point 7	6	.03	.26	.1483	.09659
Centering Point 8	6	.00	.20	.1062	.08860

Descriptive Statistics					
-	N	Minimum	Maximum	Mean	Std. Deviation
Centering Point 9	6	.02	.18	.1018	.06686
Valid N (listwise)	6	-	-	-	-

**Group 3.**

Descriptive Statistics					
-	N	Minimum	Maximum	Mean	Std. Deviation
Centering Point 0	6	.59	.68	.6423	.03157
Centering Point 1	6	.02	.34	.1617	.12332
Centering Point 2	6	.32	.49	.3902	.07261
Centering Point 3	6	.06	.22	.1257	.07215
Centering Point 4	6	.01	.22	.1417	.08596
Centering Point 5	6	.17	.37	.3128	.07728
Centering Point 6	6	.31	.39	.3503	.03456
Centering Point 7	6	.05	.26	.1525	.06948
Centering Point 8	6	.01	.11	.0555	.03538
Centering Point 9	6	.02	.06	.0388	.01838
Valid N (listwise)	6	-	-	-	-

**Group 4.**

Descriptive Statistics					
-	N	Minimum	Maximum	Mean	Std. Deviation
Centering Point 0	6	.53	.69	.6228	.06996
Centering Point 1	6	.03	.29	.1512	.09021
Centering Point 2	6	.19	.36	.2658	.06745
Centering Point 3	6	.02	.17	.0785	.05285
Centering Point 4	6	.12	.25	.1982	.04795
Centering Point 5	6	.23	.39	.3310	.06499
Centering Point 6	6	.17	.37	.2910	.08356
Centering Point 7	6	.09	.25	.1812	.06661
Centering Point 8	6	.03	.15	.0933	.05174
Centering Point 9	6	.03	.11	.0635	.02783
Valid N (listwise)	6	-	-	-	-

**Group 5.**

Descriptive Statistics					
-	N	Minimum	Maximum	Mean	Std. Deviation
Centering Point 0	6	.62	.66	.6417	.01174
Centering Point 1	6	.07	.35	.1913	.11877
Centering Point 2	6	.05	.35	.1937	.09680
Centering Point 3	6	.01	.20	.0727	.06838
Centering Point 4	6	.01	.21	.1220	.06859
Centering Point 5	6	.18	.29	.2363	.04355
Centering Point 6	6	.12	.27	.1825	.06202
Centering Point 7	6	.01	.17	.0990	.06140
Centering Point 8	6	.01	.12	.0615	.04856
Centering Point 9	6	.00	.11	.0458	.03819
Valid N (listwise)	6	-	-	-	-

**Group 6.**

Descriptive Statistics					
-	N	Minimum	Maximum	Mean	Std. Deviation
Centering Point 0	6	.56	.69	.6328	.04568
Centering Point 1	6	.17	.33	.2312	.06188
Centering Point 2	6	.21	.35	.2890	.05646
Centering Point 3	6	.02	.13	.0638	.04281
Centering Point 4	6	.10	.26	.1728	.06444
Centering Point 5	6	.26	.42	.3267	.05713
Centering Point 6	6	.20	.46	.3142	.09256
Centering Point 7	6	.09	.30	.1642	.08076
Centering Point 8	6	.01	.13	.0542	.04606
Centering Point 9	6	.02	.07	.0405	.01805
Valid N (listwise)	6	-	-	-	-

**TRANSPORTATION.**

Tests of Normality							
-	Group	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
-		Statistic	df	Sig.	Statistic	df	Sig.
Transportation Point 0	Group 1	.286	6	.136	.883	6	.285
	Group 2	.247	6	.200 <sup>*</sup>	.907	6	.414
	Group 3	.229	6	.200 <sup>*</sup>	.932	6	.594
	Group 4	.203	6	.200 <sup>*</sup>	.896	6	.352
	Group 5	.298	6	.102	.878	6	.258
	Group 6	.177	6	.200 <sup>*</sup>	.976	6	.930
Transportation Point 1	Group 1	.234	6	.200 <sup>*</sup>	.929	6	.575
	Group 2	.218	6	.200 <sup>*</sup>	.875	6	.246
	Group 3	.226	6	.200 <sup>*</sup>	.924	6	.532
	Group 4	.210	6	.200 <sup>*</sup>	.965	6	.854
	Group 5	.208	6	.200 <sup>*</sup>	.951	6	.745
	Group 6	.305	6	.085	.817	6	.084
Transportation Point 2	Group 1	.208	6	.200 <sup>*</sup>	.878	6	.260
	Group 2	.172	6	.200 <sup>*</sup>	.933	6	.602
	Group 3	.290	6	.126	.857	6	.180
	Group 4	.171	6	.200 <sup>*</sup>	.925	6	.546
	Group 5	.179	6	.200 <sup>*</sup>	.975	6	.925
	Group 6	.189	6	.200 <sup>*</sup>	.977	6	.933
Transportation Point 3	Group 1	.230	6	.200 <sup>*</sup>	.901	6	.380
	Group 2	.190	6	.200 <sup>*</sup>	.967	6	.870
	Group 3	.286	6	.137	.843	6	.138
	Group 4	.185	6	.200 <sup>*</sup>	.966	6	.866
	Group 5	.281	6	.151	.893	6	.333
	Group 6	.169	6	.200 <sup>*</sup>	.970	6	.896
Transportation Point 4	Group 1	.291	6	.124	.875	6	.247
	Group 2	.197	6	.200 <sup>*</sup>	.909	6	.431
	Group 3	.254	6	.200 <sup>*</sup>	.912	6	.451
	Group 4	.163	6	.200 <sup>*</sup>	.937	6	.632
	Group 5	.207	6	.200 <sup>*</sup>	.948	6	.721
	Group 6	.189	6	.200 <sup>*</sup>	.891	6	.325

Tests of Normality							
-	Group	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
-		Statistic	df	Sig.	Statistic	df	Sig.
Transportation Point 5	Group 1	.233	6	.200 <sup>*</sup>	.876	6	.252
	Group 2	.249	6	.200 <sup>*</sup>	.922	6	.516
	Group 3	.236	6	.200 <sup>*</sup>	.861	6	.193
	Group 4	.260	6	.200 <sup>*</sup>	.868	6	.217
	Group 5	.187	6	.200 <sup>*</sup>	.948	6	.723
	Group 6	.178	6	.200 <sup>*</sup>	.958	6	.805
Transportation Point 6	Group 1	.195	6	.200 <sup>*</sup>	.942	6	.674
	Group 2	.150	6	.200 <sup>*</sup>	.983	6	.966
	Group 3	.290	6	.124	.827	6	.102
	Group 4	.246	6	.200 <sup>*</sup>	.848	6	.151
	Group 5	.282	6	.148	.855	6	.174
	Group 6	.254	6	.200 <sup>*</sup>	.938	6	.646
Transportation Point 7	Group 1	.157	6	.200 <sup>*</sup>	.982	6	.962
	Group 2	.210	6	.200 <sup>*</sup>	.904	6	.401
	Group 3	.182	6	.200 <sup>*</sup>	.976	6	.930
	Group 4	.266	6	.200 <sup>*</sup>	.839	6	.129
	Group 5	.174	6	.200 <sup>*</sup>	.932	6	.599
	Group 6	.248	6	.200 <sup>*</sup>	.904	6	.400
Transportation Point 8	Group 1	.151	6	.200 <sup>*</sup>	.972	6	.905
	Group 2	.226	6	.200 <sup>*</sup>	.861	6	.193
	Group 3	.224	6	.200 <sup>*</sup>	.969	6	.886
	Group 4	.254	6	.200 <sup>*</sup>	.835	6	.118
	Group 5	.187	6	.200 <sup>*</sup>	.928	6	.568
	Group 6	.219	6	.200 <sup>*</sup>	.901	6	.380
Transportation Point 9	Group 1	.180	6	.200 <sup>*</sup>	.953	6	.764
	Group 2	.222	6	.200 <sup>*</sup>	.927	6	.554
	Group 3	.173	6	.200 <sup>*</sup>	.935	6	.622
	Group 4	.232	6	.200 <sup>*</sup>	.922	6	.520
	Group 5	.122	6	.200 <sup>*</sup>	.994	6	.997
	Group 6	.235	6	.200 <sup>*</sup>	.932	6	.592

\*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction.

Test of Homogeneity of Variances					
-		Levene Statistic	df1	df2	Sig.
Transportation Point 0	Based on Mean	1,194	5	30	.336
	Based on Median	.899	5	30	.494
	Based on Median and with adjusted df	.899	5	21,978	.499
	Based on trimmed mean	1,148	5	30	.357
Transportation Point 1	Based on Mean	2.306	5	30	.069
	Based on Median	1,640	5	30	.180
	Based on Median and with adjusted df	1,640	5	20.380	.195
	Based on trimmed mean	2.264	5	30	.074
Transportation Point 2	Based on Mean	1,944	5	30	.116
	Based on Median	1,842	5	30	.135
	Based on Median and with adjusted df	1,842	5	18.303	.154
	Based on trimmed mean	1,940	5	30	.117
Transportation Point 3	Based on Mean	1,554	5	30	.203
	Based on Median	1,344	5	30	.273
	Based on Median and with adjusted df	1,344	5	22.034	.283
	Based on trimmed mean	1,562	5	30	.201

Test of Homogeneity of Variances					
-		Levene Statistic	df1	df2	Sig.
Transportation Point 4	Based on Mean	1,425	5	30	.244
	Based on Median	.912	5	30	.486
	Based on Median and with adjusted df	.912	5	14.373	.500
	Based on trimmed mean	1,270	5	30	.302
Transportation Point 5	Based on Mean	.743	5	30	.597
	Based on Median	.593	5	30	.705
	Based on Median and with adjusted df	.593	5	19.670	.706
	Based on trimmed mean	.692	5	30	.633
Transportation Point 6	Based on Mean	.580	5	30	.715
	Based on Median	.491	5	30	.780
	Based on Median and with adjusted df	.491	5	25.115	.780
	Based on trimmed mean	.588	5	30	.709
Transportation Point 7	Based on Mean	.892	5	30	.499
	Based on Median	.728	5	30	.608
	Based on Median and with adjusted df	.728	5	26.195	.609
	Based on trimmed mean	.879	5	30	.507
Transportation Point 8	Based on Mean	3.011	5	30	.026
	Based on Median	2.635	5	30	.043
	Based on Median and with adjusted df	2.635	5	25.049	.048
	Based on trimmed mean	2.999	5	30	.026
Transportation Point 9	Based on Mean	.925	5	30	.479
	Based on Median	.843	5	30	.530
	Based on Median and with adjusted df	.843	5	22.055	.534
	Based on trimmed mean	.960	5	30	.458

## ONE WAY ANOVA

### Transportation point 0.

ANOVA					
Transportation Point 0					
-	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.022	5	.004	3.089	.023
Within Groups	.042	30	.001	-	-
Total	.063	35	-	-	-

Multiple Comparisons						
Dependent Variable: Transportation Point 0						
Tukey HSD						
(I) Group	(J) Group	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Group 1	Group 2	-.051000	.021543	.200	-.11653	.01453
	Group 3	-.081333*	.021543	.008	-.14686	-.01581
	Group 4	-.041500	.021543	.407	-.10703	.02403
	Group 5	-.051667	.021543	.189	-.11719	.01386
	Group 6	-.058333	.021543	.103	-.12386	.00719

Multiple Comparisons						
Dependent Variable: Transportation Point 0						
Tukey HSD						
(I) Group	(J) Group	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Group 2	Group 1	.051000	.021543	.200	-.01453	.11653
	Group 3	-.030333	.021543	.722	-.09586	.03519
	Group 4	.009500	.021543	.998	-.05603	.07503
	Group 5	-.000667	.021543	1.000	-.06619	.06486
	Group 6	-.007333	.021543	.999	-.07286	.05819
Group 3	Group 1	.081333*	.021543	.008	.01581	.14686
	Group 2	.030333	.021543	.722	-.03519	.09586
	Group 4	.039833	.021543	.451	-.02569	.10536
	Group 5	.029667	.021543	.740	-.03586	.09519
	Group 6	.023000	.021543	.890	-.04253	.08853
Group 4	Group 1	.041500	.021543	.407	-.02403	.10703
	Group 2	-.009500	.021543	.998	-.07503	.05603
	Group 3	-.039833	.021543	.451	-.10536	.02569
	Group 5	-.010167	.021543	.997	-.07569	.05536
	Group 6	-.016833	.021543	.969	-.08236	.04869
Group 5	Group 1	.051667	.021543	.189	-.01386	.11719
	Group 2	.000667	.021543	1.000	-.06486	.06619
	Group 3	-.029667	.021543	.740	-.09519	.03586
	Group 4	.010167	.021543	.997	-.05536	.07569
	Group 6	-.006667	.021543	1.000	-.07219	.05886
Group 6	Group 1	.058333	.021543	.103	-.00719	.12386
	Group 2	.007333	.021543	.999	-.05819	.07286
	Group 3	-.023000	.021543	.890	-.08853	.04253
	Group 4	.016833	.021543	.969	-.04869	.08236
	Group 5	.006667	.021543	1.000	-.05886	.07219

\*. The mean difference is significant at the 0,05 level.

ANOVA					
Transportation Point 1					
-	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.012	5	.002	.341	.884
Within Groups	.205	30	.007	-	-
Total	.217	35	-	-	-

ANOVA					
Transportation Point 2					
-	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.044	5	.009	4.251	.005
Within Groups	.063	30	.002	-	-
Total	.107	35	-	-	-



Multiple Comparisons						
Dependent Variable: Transportation Point 2						
Tukey HSD						
(I) Group	(J) Group	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Group 1	Group 2	-.049000	.026374	.446	-.12922	.03122
	Group 3	.062000	.026374	.206	-.01822	.14222
	Group 4	.005833	.026374	1.000	-.07439	.08605
	Group 5	-.031333	.026374	.839	-.11155	.04889
	Group 6	.011500	.026374	.998	-.06872	.09172
Group 2	Group 1	.049000	.026374	.446	-.03122	.12922
	Group 3	.111000*	.026374	.003	.03078	.19122
	Group 4	.054833	.026374	.325	-.02539	.13505
	Group 5	.017667	.026374	.984	-.06255	.09789
	Group 6	.060500	.026374	.228	-.01972	.14072
Group 3	Group 1	-.062000	.026374	.206	-.14222	.01822
	Group 2	-.111000*	.026374	.003	-.19122	-.03078
	Group 4	-.056167	.026374	.300	-.13639	.02405
	Group 5	-.093333*	.026374	.015	-.17355	-.01311
	Group 6	-.050500	.026374	.413	-.13072	.02972
Group 4	Group 1	-.005833	.026374	1.000	-.08605	.07439
	Group 2	-.054833	.026374	.325	-.13505	.02539
	Group 3	.056167	.026374	.300	-.02405	.13639
	Group 5	-.037167	.026374	.721	-.11739	.04305
	Group 6	.005667	.026374	1.000	-.07455	.08589
Group 5	Group 1	.031333	.026374	.839	-.04889	.11155
	Group 2	-.017667	.026374	.984	-.09789	.06255
	Group 3	.093333*	.026374	.015	.01311	.17355
	Group 4	.037167	.026374	.721	-.04305	.11739
	Group 6	.042833	.026374	.590	-.03739	.12305
Group 6	Group 1	-.011500	.026374	.998	-.09172	.06872
	Group 2	-.060500	.026374	.228	-.14072	.01972
	Group 3	.050500	.026374	.413	-.02972	.13072
	Group 4	-.005667	.026374	1.000	-.08589	.07455
	Group 5	-.042833	.026374	.590	-.12305	.03739

\*. The mean difference is significant at the 0,05 level.

ANOVA					
Transportation Point 3					
-	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.015	5	.003	1,355	.269
Within Groups	.067	30	.002	-	-
Total	.083	35	-	-	-

ANOVA					
Transportation Point 3					
-	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.009	5	.002	.675	.646
Within Groups	.081	30	.003	-	-
Total	.091	35	-	-	-

ANOVA					
Transportation Point 3					
-	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.023	5	.005	1,600	.190
Within Groups	.087	30	.003	-	-
Total	.110	35	-	-	-

ANOVA					
Transportation Point 6					
-	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.047	5	.009	2,114	.091
Within Groups	.133	30	.004	-	-
Total	.180	35	-	-	-

ANOVA					
Transportation Point 7					
-	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.013	5	.003	.720	.613
Within Groups	.109	30	.004	-	-
Total	.122	35	-	-	-

ANOVA					
Transportation Point 8					
-	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.013	5	.003	.896	.497
Within Groups	.086	30	.003	-	-
Total	.099	35	-	-	-

ANOVA					
Transportation Point 9					
-	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.049	5	.010	3,028	.025
Within Groups	.097	30	.003	-	-
Total	.147	35	-	-	-

Multiple Comparisons						
Dependent Variable: Transportation Point 9						
Tukey HSD						
(I) Group	(J) Group	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Group 1	Group 2	-.086667	.032903	.120	-.18674	.01341
	Group 3	.025000	.032903	.972	-.07508	.12508
	Group 4	-.043000	.032903	.779	-.14308	.05708
	Group 5	-.034333	.032903	.899	-.13441	.06574
	Group 6	.005000	.032903	1,000	-.09508	.10508

Multiple Comparisons						
Dependent Variable: Transportation Point 9						
Tukey HSD						
(I) Group	(J) Group	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Group 2	Group 1	.086667	.032903	.120	-.01341	.18674
	Group 3	.111667*	.032903	.022	.01159	.21174
	Group 4	.043667	.032903	.768	-.05641	.14374
	Group 5	.052333	.032903	.611	-.04774	.15241
	Group 6	.091667	.032903	.088	-.00841	.19174
Group 3	Group 1	-.025000	.032903	.972	-.12508	.07508
	Group 2	-.111667*	.032903	.022	-.21174	-.01159
	Group 4	-.068000	.032903	.331	-.16808	.03208
	Group 5	-.059333	.032903	.479	-.15941	.04074
	Group 6	-.020000	.032903	.990	-.12008	.08008
Group 4	Group 1	.043000	.032903	.779	-.05708	.14308
	Group 2	-.043667	.032903	.768	-.14374	.05641
	Group 3	.068000	.032903	.331	-.03208	.16808
	Group 5	.008667	.032903	1,000	-.09141	.10874
	Group 6	.048000	.032903	.692	-.05208	.14808
Group 5	Group 1	.034333	.032903	.899	-.06574	.13441
	Group 2	-.052333	.032903	.611	-.15241	.04774
	Group 3	.059333	.032903	.479	-.04074	.15941
	Group 4	-.008667	.032903	1,000	-.10874	.09141
	Group 6	.039333	.032903	.836	-.06074	.13941
Group 6	Group 1	-.005000	.032903	1,000	-.10508	.09508
	Group 2	-.091667	.032903	.088	-.19174	.00841
	Group 3	.020000	.032903	.990	-.08008	.12008
	Group 4	-.048000	.032903	.692	-.14808	.05208
	Group 5	-.039333	.032903	.836	-.13941	.06074

\*, The mean difference is significant at the 0,05 level.

## ANALYSIS DATA CENTERING

Tests of Normality							
-	Group	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Centering Point 0	Group 1	.236	6	.200*	.953	6	.762
	Group 2	.189	6	.200*	.910	6	.436
	Group 3	.275	6	.176	.892	6	.328
	Group 4	.281	6	.152	.845	6	.144
	Group 5	.187	6	.200*	.938	6	.642
	Group 6	.130	6	.200*	.982	6	.959
Centering Point 1	Group 1	.201	6	.200*	.892	6	.329
	Group 2	.185	6	.200*	.951	6	.751
	Group 3	.191	6	.200*	.937	6	.632
	Group 4	.190	6	.200*	.978	6	.942
	Group 5	.217	6	.200*	.904	6	.398
	Group 6	.226	6	.200*	.891	6	.321

Tests of Normality							
-	Group	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Centering Point 2	Group 1	.167	6	.200 <sup>*</sup>	.958	6	.800
	Group 2	.152	6	.200 <sup>*</sup>	.967	6	.868
	Group 3	.292	6	.119	.852	6	.163
	Group 4	.172	6	.200 <sup>*</sup>	.943	6	.684
	Group 5	.183	6	.200 <sup>*</sup>	.975	6	.924
	Group 6	.173	6	.200 <sup>*</sup>	.947	6	.714
Centering Point 3	Group 1	.222	6	.200 <sup>*</sup>	.882	6	.278
	Group 2	.233	6	.200 <sup>*</sup>	.955	6	.783
	Group 3	.288	6	.131	.831	6	.109
	Group 4	.260	6	.200 <sup>*</sup>	.917	6	.485
	Group 5	.337	6	.032	.810	6	.073
	Group 6	.239	6	.200 <sup>*</sup>	.916	6	.474
Centering Point 4	Group 1	.295	6	.111	.834	6	.116
	Group 2	.203	6	.200 <sup>*</sup>	.942	6	.674
	Group 3	.276	6	.169	.869	6	.221
	Group 4	.183	6	.200 <sup>*</sup>	.946	6	.706
	Group 5	.186	6	.200 <sup>*</sup>	.955	6	.782
	Group 6	.180	6	.200 <sup>*</sup>	.917	6	.481
Centering Point 5	Group 1	.182	6	.200 <sup>*</sup>	.910	6	.440
	Group 2	.291	6	.122	.896	6	.351
	Group 3	.294	6	.114	.805	6	.065
	Group 4	.328	6	.043	.847	6	.148
	Group 5	.132	6	.200 <sup>*</sup>	.971	6	.902
	Group 6	.207	6	.200 <sup>*</sup>	.942	6	.673
Centering Point 6	Group 1	.164	6	.200 <sup>*</sup>	.957	6	.797
	Group 2	.147	6	.200 <sup>*</sup>	.988	6	.983
	Group 3	.280	6	.155	.850	6	.157
	Group 4	.243	6	.200 <sup>*</sup>	.865	6	.206
	Group 5	.253	6	.200 <sup>*</sup>	.887	6	.301
	Group 6	.270	6	.197	.934	6	.611
Centering Point 7	Group 1	.181	6	.200 <sup>*</sup>	.978	6	.939
	Group 2	.210	6	.200 <sup>*</sup>	.905	6	.403
	Group 3	.143	6	.200 <sup>*</sup>	.992	6	.993
	Group 4	.289	6	.127	.837	6	.123
	Group 5	.164	6	.200 <sup>*</sup>	.937	6	.635
	Group 6	.251	6	.200 <sup>*</sup>	.891	6	.322
Centering Point 8	Group 1	.202	6	.200 <sup>*</sup>	.922	6	.517
	Group 2	.236	6	.200 <sup>*</sup>	.849	6	.155
	Group 3	.185	6	.200 <sup>*</sup>	.941	6	.668
	Group 4	.263	6	.200 <sup>*</sup>	.826	6	.099
	Group 5	.198	6	.200 <sup>*</sup>	.901	6	.382
	Group 6	.224	6	.200 <sup>*</sup>	.897	6	.358
Centering Point 9	Group 1	.191	6	.200 <sup>*</sup>	.900	6	.371
	Group 2	.231	6	.200 <sup>*</sup>	.875	6	.245
	Group 3	.228	6	.200 <sup>*</sup>	.892	6	.328
	Group 4	.287	6	.135	.911	6	.443
	Group 5	.169	6	.200 <sup>*</sup>	.952	6	.755
	Group 6	.178	6	.200 <sup>*</sup>	.948	6	.724

\*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction.

Test of Homogeneity of Variances					
-		Levene Statistic	df1	df2	Sig.
Centering Point 0	Based on Mean	2.509	5	30	.052
	Based on Median	2.031	5	30	.103
	Based on Median and with adjusted df	2.031	5	18.516	.121
	Based on trimmed mean	2.398	5	30	.061
Centering Point 1	Based on Mean	1.464	5	30	.231
	Based on Median	1.236	5	30	.317
	Based on Median and with adjusted df	1.236	5	21.605	.327
	Based on trimmed mean	1.440	5	30	.239
Centering Point 2	Based on Mean	1.403	5	30	.251
	Based on Median	1.329	5	30	.279
	Based on Median and with adjusted df	1.329	5	20.071	.292
	Based on trimmed mean	1.401	5	30	.252
Centering Point 3	Based on Mean	.943	5	30	.468
	Based on Median	.829	5	30	.540
	Based on Median and with adjusted df	.829	5	22.151	.543
	Based on trimmed mean	.958	5	30	.459
Centering Point 4	Based on Mean	.951	5	30	.463
	Based on Median	.423	5	30	.829
	Based on Median and with adjusted df	.423	5	21.065	.827
	Based on trimmed mean	.927	5	30	.477
Centering Point 5	Based on Mean	.745	5	30	.596
	Based on Median	.547	5	30	.739
	Based on Median and with adjusted df	.547	5	19.683	.738
	Based on trimmed mean	.689	5	30	.635
Centering Point 6	Based on Mean	1.360	5	30	.267
	Based on Median	.948	5	30	.465
	Based on Median and with adjusted df	.948	5	20.623	.472
	Based on trimmed mean	1.325	5	30	.280
Centering Point 7	Based on Mean	.778	5	30	.573
	Based on Median	.620	5	30	.685
	Based on Median and with adjusted df	.620	5	25.385	.686
	Based on trimmed mean	.762	5	30	.584
Centering Point 8	Based on Mean	2.781	5	30	.035
	Based on Median	2.088	5	30	.095
	Based on Median and with adjusted df	2.088	5	26.069	.099
	Based on trimmed mean	2.749	5	30	.037
Centering Point 9	Based on Mean	5.815	5	30	.001
	Based on Median	4.778	5	30	.002
	Based on Median and with adjusted df	4.778	5	21.863	.004
	Based on trimmed mean	5.794	5	30	.001

## ONE WAY ANOVA

### Centering Point 0.

ANOVA					
Centering Point 0					
-	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.024	5	.005	1,336	.276
Within Groups	.106	30	.004	-	-
Total	.130	35	-	-	-

ANOVA					
Centering Point 1					
-	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.068	5	.014	.934	.473
Within Groups	.437	30	.015	-	-
Total	.505	35	-	-	-

ANOVA					
Centering Point 2					
-	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.172	5	.034	3.795	.009
Within Groups	.272	30	.009	-	-
Total	.444	35	-	-	-

Multiple Comparisons						
Dependent Variable: Centering Point 2						
Tukey HSD						
(I) Group	(J) Group	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Group 1	Group 2	.085500	.054992	.633	-.08176	.25276
	Group 3	-.125500	.054992	.233	-.29276	.04176
	Group 4	-.001167	.054992	1.000	-.16843	.16610
	Group 5	.071000	.054992	.787	-.09626	.23826
	Group 6	-.024333	.054992	.998	-.19160	.14293
Group 2	Group 1	-.085500	.054992	.633	-.25276	.08176
	Group 3	-.211000*	.054992	.007	-.37826	-.04374
	Group 4	-.086667	.054992	.620	-.25393	.08060
	Group 5	-.014500	.054992	1.000	-.18176	.15276
	Group 6	-.109833	.054992	.367	-.27710	.05743
Group 3	Group 1	.125500	.054992	.233	-.04176	.29276
	Group 2	.211000*	.054992	.007	.04374	.37826
	Group 4	.124333	.054992	.241	-.04293	.29160
	Group 5	.196500*	.054992	.014	.02924	.36376
	Group 6	.101167	.054992	.457	-.06610	.26843
Group 4	Group 1	.001167	.054992	1.000	-.16610	.16843
	Group 2	.086667	.054992	.620	-.08060	.25393
	Group 3	-.124333	.054992	.241	-.29160	.04293
	Group 5	.072167	.054992	.776	-.09510	.23943
	Group 6	-.023167	.054992	.998	-.19043	.14410
Group 5	Group 1	-.071000	.054992	.787	-.23826	.09626
	Group 2	.014500	.054992	1.000	-.15276	.18176
	Group 3	-.196500*	.054992	.014	-.36376	-.02924
	Group 4	-.072167	.054992	.776	-.23943	.09510
	Group 6	-.095333	.054992	.522	-.26260	.07193
Group 6	Group 1	.024333	.054992	.998	-.14293	.19160
	Group 2	.109833	.054992	.367	-.05743	.27710
	Group 3	-.101167	.054992	.457	-.26843	.06610
	Group 4	.023167	.054992	.998	-.14410	.19043
	Group 5	.095333	.054992	.522	-.07193	.26260

\*. The mean difference is significant at the 0,05 level.

ANOVA					
Centering Point 3					
-	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.022	5	.004	.962	.456
Within Groups	.136	30	.005	-	-
Total	.157	35	-	-	-

ANOVA					
Centering Point 4					
-	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.024	5	.005	.876	.509
Within Groups	.164	30	.005	-	-
Total	.188	35	-	-	-

ANOVA					
Centering Point 5					
-	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.042	5	.008	1,308	.287
Within Groups	.193	30	.006	-	-
Total	.235	35	-	-	-

ANOVA					
Centering Point 6					
-	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.120	5	.024	3.148	.021
Within Groups	.229	30	.008	-	-
Total	.349	35	-	-	-

Multiple Comparisons						
Dependent Variable: Centering Point 6						
Tukey HSD						
(I) Group	(J) Group	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Group 1	Group 2	.052667	.050398	.899	-.10062	.20596
	Group 3	-.086500	.050398	.532	-.23979	.06679
	Group 4	-.027167	.050398	.994	-.18046	.12612
	Group 5	.081333	.050398	.596	-.07196	.23462
	Group 6	-.050333	.050398	.915	-.20362	.10296
Group 2	Group 1	-.052667	.050398	.899	-.20596	.10062
	Group 3	-.139167	.050398	.092	-.29246	.01412
	Group 4	-.079833	.050398	.615	-.23312	.07346
	Group 5	.028667	.050398	.992	-.12462	.18196
	Group 6	-.103000	.050398	.343	-.25629	.05029
Group 3	Group 1	.086500	.050398	.532	-.06679	.23979
	Group 2	.139167	.050398	.092	-.01412	.29246
	Group 4	.059333	.050398	.844	-.09396	.21262
	Group 5	.167833	.050398	.025	.01454	.32112
	Group 6	.036167	.050398	.978	-.11712	.18946

Multiple Comparisons						
Dependent Variable: Centering Point 6						
Tukey HSD						
(I) Group	(J) Group	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Group 4	Group 1	.027167	.050398	.994	-.12612	.18046
	Group 2	.079833	.050398	.615	-.07346	.23312
	Group 3	-.059333	.050398	.844	-.21262	.09396
	Group 5	.108500	.050398	.289	-.04479	.26179
	Group 6	-.023167	.050398	.997	-.17646	.13012
Group 5	Group 1	-.081333	.050398	.596	-.23462	.07196
	Group 2	-.028667	.050398	.992	-.18196	.12462
	Group 3	-.167833*	.050398	.025	-.32112	-.01454
	Group 4	-.108500	.050398	.289	-.26179	.04479
	Group 6	-.131667	.050398	.125	-.28496	.02162
Group 6	Group 1	.050333	.050398	.915	-.10296	.20362
	Group 2	.103000	.050398	.343	-.05029	.25629
	Group 3	-.036167	.050398	.978	-.18946	.11712
	Group 4	.023167	.050398	.997	-.13012	.17646
	Group 5	.131667	.050398	.125	-.02162	.28496

\*. The mean difference is significant at the 0,05 level.

ANOVA					
Centering Point 7					
-	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.023	5	.005	.716	.616
Within Groups	.190	30	.006	-	-
Total	.213	35	-	-	-

ANOVA					
Centering Point 8					
-	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.016	5	.003	.896	.496
Within Groups	.105	30	.003	-	-
Total	.120	35	-	-	-

ANOVA					
Centering Point 9					
-	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.017	5	.003	1,828	.137
Within Groups	.057	30	.002	-	-
Total	.074	35	-	-	-

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