ONEWAY FindTime LocateMinMax CompareValues CompareRanges BY VisType /STATISTICS DESCRIPTIVES /MISSING ANALYSIS /POSTHOC=BONFERRONI ALPHA(0.0125).

### **Oneway ANOVA - Accuracy**

### **Notes**

Output Created		04-NOV-2020 09:18
Comments		
Input	Data	/Users/niklas/Document s/Doktorandhandlednin g/Kahin/radvis/statistik/ exp3_ac.sav
	Active Dataset	DataSet1
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	Weight	<none></none>
	Split File	<none></none>
	N of Rows in Working Data File	171
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics for each analysis are based on cases with no missing data for any variable in the analysis.
Syntax		ONEWAY FindTime LocateMinMax CompareValues CompareRanges BY VisType /STATISTICS DESCRIPTIVES /MISSING ANALYSIS /POSTHOC=BONFERRO NI ALPHA(0.0125).
Deserves	Processor Time	` '
Resources		00:00:00.01
	Elapsed Time	00:00:00.00

# **Descriptives**

						95% Confidence
		N	Mean	Std. Deviation	Std. Error	Lower Bound
FindTime	Ovr	57	.9895	.03096	.00410	.9813
	Lay	57	.9930	.02577	.00341	.9861
	Adj	57	.9825	.03837	.00508	.9723
	Total	171	.9883	.03223	.00246	.9834
LocateMinMax	Ovr	57	.9152	.12647	.01675	.8816
	Lay	57	.9211	.15464	.02048	.8800
	Adj	57	.9123	.12640	.01674	.8787
	Total	171	.9162	.13573	.01038	.8957
CompareValues	Ovr	57	.8421	.23448	.03106	.7799
	Lay	57	.7719	.32828	.04348	.6848
	Adj	57	.8333	.27277	.03613	.7610
	Total	171	.8158	.28125	.02151	.7733
CompareRanges	Ovr	57	.9298	.11333	.01501	.8998
•	Lay	57	.8977	.14691	.01946	.8587
	Adj	57	.9240	.12626	.01672	.8905
	Total	171	.9172	.12957	.00991	.8976

# **Descriptives**

		95% Confidence Interval for		
		Upper Bound	Minimum	Maximum
FindTime	Ovr	.9977	.90	1.00
	Lay	.9998	.90	1.00
	Adj	.9926	.90	1.00
	Total	.9932	.90	1.00
LocateMinMax	Ovr	.9488	.50	1.00
	Lay	.9621	.17	1.00
	Adj	.9458	.50	1.00
	Total	.9367	.17	1.00
CompareValues	Ovr	.9043	.50	1.00
	Lay	.8590	.00	1.00
	Adj	.9057	.00	1.00
	Total	.8582	.00	1.00
CompareRanges	Ovr	.9599	.50	1.00
	Lay	.9366	.17	1.00
	Adj	.9575	.50	1.00
	Total	.9367	.17	1.00

### **ANOVA**

		Sum of Squares	df	Mean Square	F
FindTime	Between Groups	.003	2	.002	1.587
	Within Groups	.173	168	.001	
	Total	.177	170		
LocateMinMax	Between Groups	.002	2	.001	.061
	Within Groups	3.130	168	.019	
	Total	3.132	170		
CompareValues	Between Groups	.167	2	.083	1.054
	Within Groups	13.281	168	.079	
	Total	13.447	170		
CompareRanges	Between Groups	.033	2	.017	.997
	Within Groups	2.821	168	.017	
	Total	2.854	170		

## ANOVA

		Sig.
FindTime	Between Groups	.208
	Within Groups	
	Total	
LocateMinMax	<b>Between Groups</b>	.941
	Within Groups	
	Total	
CompareValues	Between Groups	.351
	Within Groups	
	Total	
CompareRanges	Between Groups	.371
	Within Groups	
	Total	

**Post Hoc Tests** 

### Bonferroni

Dependent Variable	(I) VisType	(J) VisType	Mean Difference (I-J)	Std. Error	Sig.
FindTime	Ovr	Lay	00351	.00602	1.000
		Adj	.00702	.00602	.735
	Lay	Ovr	.00351	.00602	1.000
		Adj	.01053	.00602	.246
	Adj	Ovr	00702	.00602	.735
		Lay	01053	.00602	.246
LocateMinMax	Ovr	Lay	00585	.02557	1.000
		Adj	.00292	.02557	1.000
	Lay	Ovr	.00585	.02557	1.000
		Adj	.00877	.02557	1.000
	Adj	Ovr	00292	.02557	1.000
		Lay	00877	.02557	1.000
CompareValues	Ovr	Lay	.07018	.05267	.554
		Adj	.00877	.05267	1.000
	Lay	Ovr	07018	.05267	.554
		Adj	06140	.05267	.736
	Adj	Ovr	00877	.05267	1.000
		Lay	.06140	.05267	.736
CompareRanges	Ovr	Lay	.03216	.02427	.561
		Adj	.00585	.02427	1.000
	Lay	Ovr	03216	.02427	.561
		Adj	02632	.02427	.839
	Adj	Ovr	00585	.02427	1.000
		Lay	.02632	.02427	.839

#### Bonferroni

			98.75% Confi	dence Interval
Dependent Variable	(I) VisType	(J) VisType	Lower Bound	<b>Upper Bound</b>
FindTime	Ovr	Lay	0210	.0140
		Adj	0105	.0245
	Lay	Ovr	0140	.0210
		Adj	0070	.0280
	Adj	Ovr	0245	.0105
		Lay	0280	.0070
LocateMinMax	Ovr	Lay	0801	.0684
		Adj	0713	.0772
	Lay	Ovr	0684	.0801
		Adj	0655	.0830
	Adj	Ovr	0772	.0713
		Lay	0830	.0655
CompareValues	Ovr	Lay	0828	.2232
		Adj	1442	.1618
	Lay	Ovr	2232	.0828
		Adj	2144	.0916
	Adj	Ovr	1618	.1442
		Lay	0916	.2144
CompareRanges	Ovr	Lay	0383	.1027
		Adj	0647	.0764
	Lay	Ovr	1027	.0383
		Adj	0968	.0442
	Adj	Ovr	0764	.0647
		Lay	0442	.0968

#### GRAPH

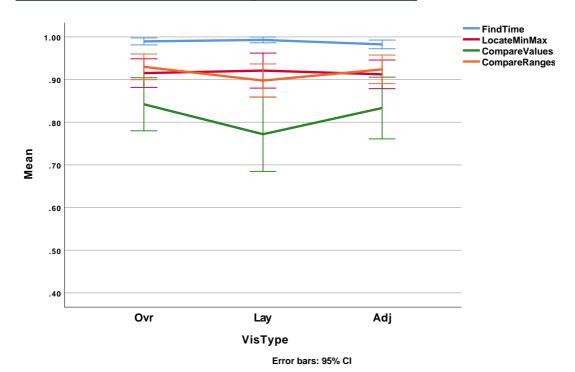
 $\label{locateMinMax} \verb| MEAN(CompareValues) = \verb| MEAN(FindTime) | MEAN(LocateMinMax) | MEAN(CompareValues) |$ 

VisType /MISSING=LISTWISE /INTERVAL CI(95.0).

### Graph

### Notes

Output Crea	ated	04-NOV-2020 09:25
Comments		
Input	Data	/Users/niklas/Document s/Doktorandhandlednin g/Kahin/radvis/statistik/ exp3_ac.sav
	Active Dataset	DataSet1
	Filter	<none></none>
	Weight	<none></none>
	Split File	<none></none>
	N of Rows in Working Data File	171
Syntax		GRAPH /LINE(MULTIPLE) =MEAN(FindTime) MEAN (LocateMinMax) MEAN (CompareValues) MEAN (CompareRanges) BY VisType /MISSING=LISTWISE /INTERVAL CI(95.0).
Resources	Processor Time	00:00:00.32
	Elapsed Time	00:00:01.00



GET

 ${\tt FILE='/Users/niklas/Documents/Doktor} and handledning {\tt Kahin/radvis/statistik/exp3\_ct.sav'.}$ 

DATASET NAME DataSet4 WINDOW=FRONT.

```
PRESERVE.
SET DECIMAL DOT.
GET DATA /TYPE=TXT
 /FILE="/Users/niklas/Documents/Doktorandhandledning/Kahin/radvis/statistik/exp3_res
p_for_stats.csv"
 /DELIMITERS=","
 /QUALIFIER='"'
  /ARRANGEMENT=DELIMITED
  /FIRSTCASE=2
 /DATATYPEMIN PERCENTAGE=95.0
  /VARIABLES=
 V1 AUTO
 ovr_ft AUTO
 ovr_lmm AUTO
 ovr_cv AUTO
 ovr_cr AUTO
 lay_ft AUTO
 lay_lmm AUTO
 lay_cv AUTO
 lay_cr AUTO
 adj_ft AUTO
 adj_lmm AUTO
 adj_cv AUTO
 adj_cr AUTO
 /MAP.
RESTORE.
CACHE.
EXECUTE.
Data written to the working file.
13 variables and 57 cases written.
Variable: V1
                           Type: Number Format: F2
Variable: ovr_ft
                           Type: Number Format: F18.16
Variable: ovr_lmm
                          Type: Number Format: F19.16
Variable: ovr_cv
                          Type: Number Format: F19.16
Variable: ovr_cr
                          Type: Number Format: F18.16
Variable: lay_ft
                          Type: Number Format: F18.16
Variable: lay_lmm
                          Type: Number Format: F19.16
Variable: lay_cv
                          Type: Number Format: F19.16
Variable: lay_cr
                          Type: Number Format: F19.16
Variable: adj_ft
                           Type: Number Format: F18.16
Variable: adj_lmm
                          Type: Number Format: F18.16
Variable: adj_cv
                          Type: Number Format: F19.16
Variable: adj_cr
                           Type: Number Format: F18.16
DATASET NAME DataSet5 WINDOW=FRONT.
DATASET ACTIVATE DataSet4.
DATASET CLOSE DataSet1.
DATASET ACTIVATE DataSet4.
SAVE OUTFILE='/Users/niklas/Documents/Doktorandhandledning/Kahin/radvis/statistik/exp
3 ct.sav'
 /COMPRESSED.
DATASET CLOSE DataSet5.
ONEWAY FindTime LocateMinMax CompareValues CompareRanges BY VisType
 /STATISTICS DESCRIPTIVES
 /MISSING ANALYSIS
 /POSTHOC=BONFERRONI ALPHA(0.0125).
```

## Oneway

### Notes

Output Created		04-NOV-2020 09:31
Comments		
Input	Data	/Users/niklas/Document s/Doktorandhandlednin g/Kahin/radvis/statistik/ exp3_ct.sav
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	Weight	<none></none>
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	N of Rows in Working Data File	171
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics for each analysis are based on cases with no missing data for any variable in the analysis.
Syntax		ONEWAY FindTime LocateMinMax CompareValues CompareRanges BY VisType /STATISTICS DESCRIPTIVES /MISSING ANALYSIS /POSTHOC=BONFERRO NI ALPHA(0.0125).
Resources	Processor Time	00:00:00.01
	Elapsed Time	00:00:00.00

# **Descriptives**

						95% Confidence
		N	Mean	Std. Deviation	Std. Error	Lower Bound
FindTime	Ovr	57	3.9725	1.01644	.13463	3.7028
	Lay	57	3.3607	1.09675	.14527	3.0697
	Adj	57	3.4434	.81969	.10857	3.2259
	Total	171	3.5922	1.01576	.07768	3.4389
LocateMinMax	Ovr	57	7.6214	3.97281	.52621	6.5673
	Lay	57	7.7915	3.86897	.51246	6.7649
	Adj	57	8.0702	5.49213	.72745	6.6130
	Total	171	7.8277	4.48339	.34285	7.1509
CompareValues	Ovr	57	9.8220	5.13946	.68074	8.4583
	Lay	57	14.3505	7.05112	.93394	12.4795
	Adj	57	11.0385	5.83272	.77256	9.4909
	Total	171	11.7370	6.32210	.48346	10.7826
CompareRanges	Ovr	57	9.8932	4.90158	.64923	8.5926
	Lay	57	11.4608	6.39769	.84739	9.7632
	Adj	57	10.7505	6.41649	.84988	9.0480
	Total	171	10.7015	5.94750	.45482	9.8037

# **Descriptives**

		95% Confidence Interval for		
		Upper Bound	Minimum	Maximum
FindTime	Ovr	4.2422	2.27	7.29
	Lay	3.6517	1.69	7.27
	Adj	3.6609	2.00	5.54
	Total	3.7455	1.69	7.29
LocateMinMax	Ovr	8.6755	2.60	23.39
	Lay	8.8181	2.75	28.19
	Adj	9.5275	3.63	34.40
	Total	8.5045	2.60	34.40
CompareValues	Ovr	11.1857	4.33	34.68
	Lay	16.2214	4.82	35.59
	Adj	12.5861	3.74	31.54
	Total	12.6913	3.74	35.59
CompareRanges	Ovr	11.1937	3.43	24.98
	Lay	13.1583	3.48	34.79
	Adj	12.4530	3.84	33.77
	Total	11.5993	3.43	34.79

### **ANOVA**

		Sum of Squares	df	Mean Square	F
FindTime	Between Groups	12.558	2	6.279	6.478
	Within Groups	162.843	168	.969	
	Total	175.401	170		
LocateMinMax	Between Groups	5.854	2	2.927	.144
	Within Groups	3411.280	168	20.305	
	Total	3417.134	170		
CompareValues	Between Groups	626.166	2	313.083	8.527
	Within Groups	6168.557	168	36.718	
	Total	6794.723	170		
CompareRanges	Between Groups	70.242	2	35.121	.993
	Within Groups	5943.124	168	35.376	
	Total	6013.366	170		

## **ANOVA**

		Sig.
FindTime	Between Groups	.002
	Within Groups	
	Total	
LocateMinMax	<b>Between Groups</b>	.866
	Within Groups	
	Total	
CompareValues	Between Groups	.000
	Within Groups	
	Total	
CompareRanges	Between Groups	.373
	Within Groups	
	Total	

**Post Hoc Tests** 

### Bonferroni

Dependent Variable	(I) VisType	(J) VisType	Mean Difference (I-J)	Std. Error	Sig.
FindTime	Ovr	Lay	.61175 <sup>*</sup>	.18442	.003
		Adj	.52904	.18442	.014
	Lay	Ovr	61175 <sup>*</sup>	.18442	.003
		Adj	08271	.18442	1.000
	Adj	Ovr	52904	.18442	.014
		Lay	.08271	.18442	1.000
LocateMinMax	Ovr	Lay	17011	.84408	1.000
		Adj	44884	.84408	1.000
	Lay	Ovr	.17011	.84408	1.000
		Adj	27873	.84408	1.000
	Adj	Ovr	.44884	.84408	1.000
		Lay	.27873	.84408	1.000
CompareValues	Ovr	Lay	-4.52847 <sup>*</sup>	1.13505	.000
		Adj	-1.21650	1.13505	.856
	Lay	Ovr	4.52847 <sup>*</sup>	1.13505	.000
		Adj	3.31197 *	1.13505	.012
	Adj	Ovr	1.21650	1.13505	.856
		Lay	-3.31197 <sup>*</sup>	1.13505	.012
CompareRanges	Ovr	Lay	-1.56761	1.11412	.484
		Adj	85736	1.11412	1.000
	Lay	Ovr	1.56761	1.11412	.484
		Adj	.71025	1.11412	1.000
	Adj	Ovr	.85736	1.11412	1.000
		Lay	71025	1.11412	1.000

#### Bonferroni

Bomerrom				
			98.75% Confi	dence Interval
Dependent Variable	(I) VisType	(J) VisType	Lower Bound	<b>Upper Bound</b>
FindTime	Ovr	Lay	.0760	1.1475
		Adj	0067	1.0648
	Lay	Ovr	-1.1475	0760
		Adj	6185	.4530
	Adj	Ovr	-1.0648	.0067
		Lay	4530	.6185
LocateMinMax	Ovr	Lay	-2.6222	2.2820
		Adj	-2.9009	2.0032
	Lay	Ovr	-2.2820	2.6222
		Adj	-2.7308	2.1733
	Adj	Ovr	-2.0032	2.9009
		Lay	-2.1733	2.7308
CompareValues	Ovr	Lay	-7.8258	-1.2311
		Adj	-4.5139	2.0809
	Lay	Ovr	1.2311	7.8258
		Adj	.0146	6.6093
	Adj	Ovr	-2.0809	4.5139
		Lay	-6.6093	0146
CompareRanges	Ovr	Lay	-4.8042	1.6689
		Adj	-4.0939	2.3792
	Lay	Ovr	-1.6689	4.8042
		Adj	-2.5263	3.9468
	Adj	Ovr	-2.3792	4.0939
		Lay	-3.9468	2.5263

<sup>\*.</sup> The mean difference is significant at the 0.0125 level.

#### GRAPH

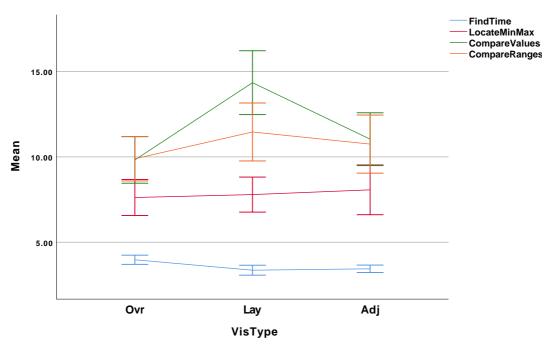
 $/ \texttt{LINE}(\texttt{MULTIPLE}) = \texttt{MEAN}(\texttt{FindTime}) \quad \texttt{MEAN}(\texttt{LocateMinMax}) \quad \texttt{MEAN}(\texttt{CompareValues}) \quad \texttt{MEAN}(\texttt{CompareRanges}) \quad \texttt{BY}$ 

VisType
/MISSING=LISTWISE
/INTERVAL CI(95.0).

### Graph

## Notes

Output Crea	ated	04-NOV-2020 09:33
Comments		
Input	Data	/Users/niklas/Document s/Doktorandhandlednin g/Kahin/radvis/statistik/ exp3_ct.sav
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	Filter	<none></none>
	Weight	<none></none>
	Split File	<none></none>
	N of Rows in Working Data File	171
Syntax		GRAPH /LINE(MULTIPLE) =MEAN(FindTime) MEAN (LocateMinMax) MEAN (CompareValues) MEAN (CompareRanges) BY VisType /MISSING=LISTWISE /INTERVAL CI(95.0).
Resources	Processor Time	00:00:00.34
	Elapsed Time	00:00:00.00



Error bars: 95% CI