**General Linear Model**

|  |  |  |
| --- | --- | --- |
| **Notes** |  |  |
| Output Created |  | 13-MAY-2024 16:38:04 |
| Comments |  |  |
| Input | Data | C:\Users\dorot\Desktop\MasterStudy\Statistics\DataAnalysis.sav |
| Active Dataset | DataSet1 |
| Filter | <none> |
| Weight | <none> |
| Split File | <none> |
| N of Rows in Working Data File | 17 |
| Missing Value Handling | Definition of Missing | User-defined missing values are treated as missing. |
| Cases Used | Statistics are based on all cases with valid data for all variables in the model. |
| Syntax |  | GLM Jerk\_V\_1 Jerk\_V\_2 Jerk\_V\_3 BY Gender /WSFACTOR=Section 3 Polynomial /METHOD=SSTYPE(3) /EMMEANS=TABLES(Gender) COMPARE ADJ(BONFERRONI) /EMMEANS=TABLES(Section) COMPARE ADJ(BONFERRONI) /EMMEANS=TABLES(Gender\*Section) COMPARE(Gender) ADJ(BONFERRONI) /EMMEANS=TABLES(Gender\*Section) COMPARE(Section) ADJ(BONFERRONI) /PRINT=DESCRIPTIVE /CRITERIA=ALPHA(.05) /WSDESIGN=Section /DESIGN=Gender. |
| Resources | Processor Time | 00:00:00,02 |
| Elapsed Time | 00:00:00,01 |

|  |  |
| --- | --- |
| **Within-Subjects Factors** |  |
| Measure: MEASURE\_1 |  |
| Section | Dependent Variable |
| 1 | Jerk\_V\_1 |
| 2 | Jerk\_V\_2 |
| 3 | Jerk\_V\_3 |

|  |  |  |  |
| --- | --- | --- | --- |
| **Between-Subjects Factors** |  |  |  |
|  |  | Value Label | N |
| Gender | 0 | Female | 9 |
| 1 | Male | 8 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Descriptive Statistics** |  |  |  |  |
|  | Gender | Mean | Std. Deviation | N |
| Jerk\_V\_1 | Female | 7195765,0133 | 7933371,70937 | 9 |
| Male | 3406217,7404 | 3163864,82990 | 8 |
| Total | 5412448,6496 | 6296819,79767 | 17 |
| Jerk\_V\_2 | Female | 15762848,7417 | 14878168,36889 | 9 |
| Male | 7031325,5597 | 9615887,39935 | 8 |
| Total | 11653896,6560 | 13088718,61315 | 17 |
| Jerk\_V\_3 | Female | 27706983,5959 | 25816417,39918 | 9 |
| Male | 12449836,9458 | 16826880,73473 | 8 |
| Total | 20527149,8782 | 22775810,42609 | 17 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Multivariate Tests**a |  |  |  |  |  |  |
| Effect |  | Value | F | Hypothesis df | Error df | Sig. |
| Section | Pillai's Trace | ,543 | 8,314b | 2,000 | 14,000 | ,004 |
| Wilks' Lambda | ,457 | 8,314b | 2,000 | 14,000 | ,004 |
| Hotelling's Trace | 1,188 | 8,314b | 2,000 | 14,000 | ,004 |
| Roy's Largest Root | 1,188 | 8,314b | 2,000 | 14,000 | ,004 |
| Section \* Gender | Pillai's Trace | ,157 | 1,303b | 2,000 | 14,000 | ,303 |
| Wilks' Lambda | ,843 | 1,303b | 2,000 | 14,000 | ,303 |
| Hotelling's Trace | ,186 | 1,303b | 2,000 | 14,000 | ,303 |
| Roy's Largest Root | ,186 | 1,303b | 2,000 | 14,000 | ,303 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| a. Design: Intercept + Gender Within Subjects Design: Section |  |  |  |  |  |  |
| b. Exact statistic |  |  |  |  |  |  |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Mauchly's Test of Sphericity**a |  |  |  |  |  |
| Measure: MEASURE\_1 |  |  |  |  |  |
| Within Subjects Effect | Mauchly's W | Approx. Chi-Square | df | Sig. | Epsilonb |
| Greenhouse-Geisser |
| Section | ,464 | 10,742 | 2 | ,005 | ,651 |

|  |  |  |
| --- | --- | --- |
| **Mauchly's Test of Sphericity**a |  |  |
| Measure: MEASURE\_1 |  |  |
| Within Subjects Effect | Epsilon |  |
| Huynh-Feldt | Lower-bound |
| Section | ,735 | ,500 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

|  |  |  |
| --- | --- | --- |
| Tests the null hypothesis that the error covariance matrix of the orthonormalized transformed dependent variables is proportional to an identity matrix.a |  |  |
| a. Design: Intercept + Gender Within Subjects Design: Section |  |  |
| b. May be used to adjust the degrees of freedom for the averaged tests of significance. Corrected tests are displayed in the Tests of Within-Subjects Effects table. |  |  |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Tests of Within-Subjects Effects** |  |  |  |  |  |
| Measure: MEASURE\_1 |  |  |  |  |  |
| Source |  | Type III Sum of Squares | df | Mean Square | F |
| Section | Sphericity Assumed | 1868610996540916,200 | 2 | 934305498270458,100 | 7,422 |
| Greenhouse-Geisser | 1868610996540916,200 | 1,302 | 1434830533440297,000 | 7,422 |
| Huynh-Feldt | 1868610996540916,200 | 1,470 | 1270918885334274,500 | 7,422 |
| Lower-bound | 1868610996540916,200 | 1,000 | 1868610996540916,200 | 7,422 |
| Section \* Gender | Sphericity Assumed | 280253256014189,000 | 2 | 140126628007094,500 | 1,113 |
| Greenhouse-Geisser | 280253256014189,000 | 1,302 | 215195099231245,470 | 1,113 |
| Huynh-Feldt | 280253256014189,000 | 1,470 | 190611719830503,000 | 1,113 |
| Lower-bound | 280253256014189,000 | 1,000 | 280253256014189,000 | 1,113 |
| Error(Section) | Sphericity Assumed | 3776370883838988,500 | 30 | 125879029461299,610 |  |
| Greenhouse-Geisser | 3776370883838988,500 | 19,535 | 193314794063878,940 |  |
| Huynh-Feldt | 3776370883838988,500 | 22,054 | 171230968998969,100 |  |
| Lower-bound | 3776370883838988,500 | 15,000 | 251758058922599,220 |  |

|  |  |  |
| --- | --- | --- |
| **Tests of Within-Subjects Effects** |  |  |
| Measure: MEASURE\_1 |  |  |
| Source |  | Sig. |
| Section | Sphericity Assumed | ,002 |
| Greenhouse-Geisser | ,009 |
| Huynh-Feldt | ,006 |
| Lower-bound | ,016 |
| Section \* Gender | Sphericity Assumed | ,342 |
| Greenhouse-Geisser | ,323 |
| Huynh-Feldt | ,329 |
| Lower-bound | ,308 |
| Error(Section) | Sphericity Assumed |  |
| Greenhouse-Geisser |  |
| Huynh-Feldt |  |
| Lower-bound |  |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Tests of Within-Subjects Contrasts** |  |  |  |  |  |  |
| Measure: MEASURE\_1 |  |  |  |  |  |  |
| Source | Section | Type III Sum of Squares | df | Mean Square | F | Sig. |
| Section | Linear | 1849740218849852,500 | 1 | 1849740218849852,500 | 11,155 | ,004 |
| Quadratic | 18870777691062,000 | 1 | 18870777691062,000 | ,220 | ,646 |
| Section \* Gender | Linear | 278482945714737,800 | 1 | 278482945714737,800 | 1,679 | ,215 |
| Quadratic | 1770310299451,125 | 1 | 1770310299451,125 | ,021 | ,888 |
| Error(Section) | Linear | 2487336423564973,500 | 15 | 165822428237664,900 |  |  |
| Quadratic | 1289034460274015,000 | 15 | 85935630684934,330 |  |  |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Tests of Between-Subjects Effects** |  |  |  |  |  |
| Measure: MEASURE\_1 |  |  |  |  |  |
| Transformed Variable: Average |  |  |  |  |  |
| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
| Intercept | 7637704254127115,000 | 1 | 7637704254127115,000 | 17,547 | <,001 |
| Gender | 1089359076043616,800 | 1 | 1089359076043616,800 | 2,503 | ,135 |
| Error | 6529249345123102,000 | 15 | 435283289674873,440 |  |  |

**Estimated Marginal Means**

**1. Gender**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Estimates** |  |  |  |  |
| Measure: MEASURE\_1 |  |  |  |  |
| Gender | Mean | Std. Error | 95% Confidence Interval |  |
| Lower Bound | Upper Bound |
| Female | 16888532,450 | 4015171,643 | 8330396,677 | 25446668,224 |
| Male | 7629126,749 | 4258732,644 | -1448147,011 | 16706400,508 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Pairwise Comparisons** |  |  |  |  |  |  |
| Measure: MEASURE\_1 |  |  |  |  |  |  |
| (I) Gender | (J) Gender | Mean Difference (I-J) | Std. Error | Sig.a | 95% Confidence Interval for Differencea |  |
| Lower Bound | Upper Bound |
| Female | Male | 9259405,702 | 5853068,175 | ,135 | -3216113,799 | 21734925,203 |
| Male | Female | -9259405,702 | 5853068,175 | ,135 | -21734925,203 | 3216113,799 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Based on estimated marginal means |  |  |  |  |  |  |
| a. Adjustment for multiple comparisons: Bonferroni. |  |  |  |  |  |  |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Univariate Tests** |  |  |  |  |  |
| Measure: MEASURE\_1 |  |  |  |  |  |
|  | Sum of Squares | df | Mean Square | F | Sig. |
| Contrast | 363119692014538,800 | 1 | 363119692014538,800 | 2,503 | ,135 |
| Error | 2176416448374366,500 | 15 | 145094429891624,440 |  |  |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| The F tests the effect of Gender. This test is based on the linearly independent pairwise comparisons among the estimated marginal means. |  |  |  |  |  |

**2. Section**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Estimates** |  |  |  |  |
| Measure: MEASURE\_1 |  |  |  |  |
| Section | Mean | Std. Error | 95% Confidence Interval |  |
| Lower Bound | Upper Bound |
| 1 | 5300991,377 | 1502375,852 | 2098753,050 | 8503229,704 |
| 2 | 11397087,151 | 3084771,255 | 4822052,862 | 17972121,439 |
| 3 | 20078410,271 | 5364846,424 | 8643510,798 | 31513309,744 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Pairwise Comparisons** |  |  |  |  |  |  |
| Measure: MEASURE\_1 |  |  |  |  |  |  |
| (I) Section | (J) Section | Mean Difference (I-J) | Std. Error | Sig.b | 95% Confidence Interval for Differenceb |  |
| Lower Bound | Upper Bound |
| 1 | 2 | -6096095,774\* | 2003614,463 | ,025 | -11493310,833 | -698880,714 |
| 3 | -14777418,894\* | 4424506,627 | ,013 | -26695886,362 | -2858951,426 |
| 2 | 1 | 6096095,774\* | 2003614,463 | ,025 | 698880,714 | 11493310,833 |
| 3 | -8681323,120 | 4581640,150 | ,233 | -21023067,338 | 3660421,098 |
| 3 | 1 | 14777418,894\* | 4424506,627 | ,013 | 2858951,426 | 26695886,362 |
| 2 | 8681323,120 | 4581640,150 | ,233 | -3660421,098 | 21023067,338 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Based on estimated marginal means |  |  |  |  |  |  |
| \*. The mean difference is significant at the ,05 level. |  |  |  |  |  |  |
| b. Adjustment for multiple comparisons: Bonferroni. |  |  |  |  |  |  |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Multivariate Tests** |  |  |  |  |  |
|  | Value | F | Hypothesis df | Error df | Sig. |
| Pillai's trace | ,543 | 8,314a | 2,000 | 14,000 | ,004 |
| Wilks' lambda | ,457 | 8,314a | 2,000 | 14,000 | ,004 |
| Hotelling's trace | 1,188 | 8,314a | 2,000 | 14,000 | ,004 |
| Roy's largest root | 1,188 | 8,314a | 2,000 | 14,000 | ,004 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Each F tests the multivariate effect of Section. These tests are based on the linearly independent pairwise comparisons among the estimated marginal means. |  |  |  |  |  |
| a. Exact statistic |  |  |  |  |  |

**3. Gender \* Section**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Estimates** |  |  |  |  |  |
| Measure: MEASURE\_1 |  |  |  |  |  |
| Gender | Section | Mean | Std. Error | 95% Confidence Interval |  |
| Lower Bound | Upper Bound |
| Female | 1 | 7195765,013 | 2061242,664 | 2802330,274 | 11589199,752 |
| 2 | 15762848,742 | 4232271,245 | 6741976,120 | 24783721,364 |
| 3 | 27706983,596 | 7360508,570 | 12018430,949 | 43395536,243 |
| Male | 1 | 3406217,740 | 2186277,998 | -1253723,505 | 8066158,985 |
| 2 | 7031325,560 | 4489001,546 | -2536754,745 | 16599405,865 |
| 3 | 12449836,946 | 7806998,284 | -4190386,000 | 29090059,891 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Pairwise Comparisons** |  |  |  |  |  |  |
| Measure: MEASURE\_1 |  |  |  |  |  |  |
| Section | (I) Gender | (J) Gender | Mean Difference (I-J) | Std. Error | Sig.a | 95% Confidence Interval for Differencea |
| Lower Bound |
| 1 | Female | Male | 3789547,273 | 3004751,704 | ,227 | -2614929,381 |
| Male | Female | -3789547,273 | 3004751,704 | ,227 | -10194023,927 |
| 2 | Female | Male | 8731523,182 | 6169542,509 | ,177 | -4418545,395 |
| Male | Female | -8731523,182 | 6169542,509 | ,177 | -21881591,759 |
| 3 | Female | Male | 15257146,650 | 10729692,848 | ,175 | -7612652,296 |
| Male | Female | -15257146,650 | 10729692,848 | ,175 | -38126945,596 |

|  |  |  |  |
| --- | --- | --- | --- |
| **Pairwise Comparisons** |  |  |  |
| Measure: MEASURE\_1 |  |  |  |
| Section | (I) Gender | (J) Gender | 95% Confidence Interval for Difference |
| Upper Bound |
| 1 | Female | Male | 10194023,927 |
| Male | Female | 2614929,381 |
| 2 | Female | Male | 21881591,759 |
| Male | Female | 4418545,395 |
| 3 | Female | Male | 38126945,596 |
| Male | Female | 7612652,296 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| Based on estimated marginal means |  |  |  |
| a. Adjustment for multiple comparisons: Bonferroni. |  |  |  |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Univariate Tests** |  |  |  |  |  |  |
| Measure: MEASURE\_1 |  |  |  |  |  |  |
| Section |  | Sum of Squares | df | Mean Square | F | Sig. |
| 1 | Contrast | 60821654964572,020 | 1 | 60821654964572,020 | 1,591 | ,227 |
| Error | 573577378065301,900 | 15 | 38238491871020,125 |  |  |
| 2 | Contrast | 322896693507121,000 | 1 | 322896693507121,000 | 2,003 | ,177 |
| Error | 2418136185442056,500 | 15 | 161209079029470,440 |  |  |
| 3 | Contrast | 985893983586112,400 | 1 | 985893983586112,400 | 2,022 | ,175 |
| Error | 7313906665454731,000 | 15 | 487593777696982,060 |  |  |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Each F tests the simple effects of Gender within each level combination of the other effects shown. These tests are based on the linearly independent pairwise comparisons among the estimated marginal means. |  |  |  |  |  |  |

**4. Gender \* Section**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Estimates** |  |  |  |  |  |
| Measure: MEASURE\_1 |  |  |  |  |  |
| Gender | Section | Mean | Std. Error | 95% Confidence Interval |  |
| Lower Bound | Upper Bound |
| Female | 1 | 7195765,013 | 2061242,664 | 2802330,274 | 11589199,752 |
| 2 | 15762848,742 | 4232271,245 | 6741976,120 | 24783721,364 |
| 3 | 27706983,596 | 7360508,570 | 12018430,949 | 43395536,243 |
| Male | 1 | 3406217,740 | 2186277,998 | -1253723,505 | 8066158,985 |
| 2 | 7031325,560 | 4489001,546 | -2536754,745 | 16599405,865 |
| 3 | 12449836,946 | 7806998,284 | -4190386,000 | 29090059,891 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Pairwise Comparisons** |  |  |  |  |  |  |
| Measure: MEASURE\_1 |  |  |  |  |  |  |
| Gender | (I) Section | (J) Section | Mean Difference (I-J) | Std. Error | Sig.b | 95% Confidence Interval for Differenceb |
| Lower Bound |
| Female | 1 | 2 | -8567083,728\* | 2748936,365 | ,021 | -15972001,700 |
| 3 | -20511218,583\* | 6070373,011 | ,012 | -36863221,046 |
| 2 | 1 | 8567083,728\* | 2748936,365 | ,021 | 1162165,757 |
| 3 | -11944134,854 | 6285958,427 | ,230 | -28876868,227 |
| 3 | 1 | 20511218,583\* | 6070373,011 | ,012 | 4159216,120 |
| 2 | 11944134,854 | 6285958,427 | ,230 | -4988598,518 |
| Male | 1 | 2 | -3625107,819 | 2915687,317 | ,699 | -11479209,387 |
| 3 | -9043619,205 | 6438602,881 | ,542 | -26387536,947 |
| 2 | 1 | 3625107,819 | 2915687,317 | ,699 | -4228993,748 |
| 3 | -5418511,386 | 6667265,745 | 1,000 | -23378387,274 |
| 3 | 1 | 9043619,205 | 6438602,881 | ,542 | -8300298,536 |
| 2 | 5418511,386 | 6667265,745 | 1,000 | -12541364,501 |

|  |  |  |  |
| --- | --- | --- | --- |
| **Pairwise Comparisons** |  |  |  |
| Measure: MEASURE\_1 |  |  |  |
| Gender | (I) Section | (J) Section | 95% Confidence Interval for Difference |
| Upper Bound |
| Female | 1 | 2 | -1162165,757 |
| 3 | -4159216,120 |
| 2 | 1 | 15972001,700 |
| 3 | 4988598,518 |
| 3 | 1 | 36863221,046 |
| 2 | 28876868,227 |
| Male | 1 | 2 | 4228993,748 |
| 3 | 8300298,536 |
| 2 | 1 | 11479209,387 |
| 3 | 12541364,501 |
| 3 | 1 | 26387536,947 |
| 2 | 23378387,274 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| Based on estimated marginal means |  |  |  |
| \*. The mean difference is significant at the ,05 level. |  |  |  |
| b. Adjustment for multiple comparisons: Bonferroni. |  |  |  |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Multivariate Tests** |  |  |  |  |  |  |
| Gender |  | Value | F | Hypothesis df | Error df | Sig. |
| Female | Pillai's trace | ,551 | 8,605a | 2,000 | 14,000 | ,004 |
| Wilks' lambda | ,449 | 8,605a | 2,000 | 14,000 | ,004 |
| Hotelling's trace | 1,229 | 8,605a | 2,000 | 14,000 | ,004 |
| Roy's largest root | 1,229 | 8,605a | 2,000 | 14,000 | ,004 |
| Male | Pillai's trace | ,170 | 1,434a | 2,000 | 14,000 | ,271 |
| Wilks' lambda | ,830 | 1,434a | 2,000 | 14,000 | ,271 |
| Hotelling's trace | ,205 | 1,434a | 2,000 | 14,000 | ,271 |
| Roy's largest root | ,205 | 1,434a | 2,000 | 14,000 | ,271 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Each F tests the multivariate simple effects of Section within each level combination of the other effects shown. These tests are based on the linearly independent pairwise comparisons among the estimated marginal means. |  |  |  |  |  |  |
| a. Exact statistic |  |  |  |  |  |  |