|  |
| --- |
| The SAS System |

The GLIMMIX Procedure

| **Model Information** | |
| --- | --- |
| **Data Set** | WORK.DIFFERENCE |
| **Response Variable** | diff |
| **Response Distribution** | Shifted T(3) |
| **Link Function** | Identity |
| **Variance Function** | Default |
| **Variance Matrix** | Diagonal |
| **Estimation Technique** | Maximum Likelihood |
| **Degrees of Freedom Method** | Residual |

| **Class Level Information** | | |
| --- | --- | --- |
| **Class** | **Levels** | **Values** |
| **mort\_time** | 3 | control early late |
| **mort\_percent** | 6 | 0 10 25 50 75 90 |
| **hatch\_interval** | 2 | asynch synch |
| **moves** | 2 | 1 2 |

|  |  |
| --- | --- |
| **Number of Observations Read** | 1101 |
| **Number of Observations Used** | 1100 |

| **Dimensions** | |
| --- | --- |
| **Covariance Parameters** | 2 |
| **Columns in X** | 189 |
| **Columns in Z** | 0 |
| **Subjects (Blocks in V)** | 1 |
| **Max Obs per Subject** | 1100 |

| **Optimization Information** | |
| --- | --- |
| **Optimization Technique** | Newton-Raphson |
| **Parameters in Optimization** | 45 |
| **Lower Boundaries** | 1 |
| **Upper Boundaries** | 0 |
| **Fixed Effects** | Not Profiled |

| **Iteration History** | | | | | |
| --- | --- | --- | --- | --- | --- |
| **Iteration** | **Restarts** | **Evaluations** | **Objective Function** | **Change** | **Max Gradient** |
| **0** | **0** | 4 | 5267.5254251 | . | 1.489076 |
| **1** | **0** | 3 | 5226.0183495 | 41.50707565 | 0.22554 |
| **2** | **0** | 3 | 5217.4988975 | 8.51945192 | 0.052439 |
| **3** | **0** | 3 | 5216.7750105 | 0.72388706 | 0.004996 |
| **4** | **0** | 3 | 5216.7673975 | 0.00761293 | 0.000057 |
| **5** | **0** | 3 | 5216.7673965 | 0.00000102 | 7.804E-9 |

|  |
| --- |
| Convergence criterion (GCONV=1E-8) satisfied. |

| **Fit Statistics** | |
| --- | --- |
| **-2 Log Likelihood** | 10433.53 |
| **AIC (smaller is better)** | 10523.53 |
| **AICC (smaller is better)** | 10527.46 |
| **BIC (smaller is better)** | 10748.67 |
| **CAIC (smaller is better)** | 10793.67 |
| **HQIC (smaller is better)** | 10608.71 |
| **Pearson Chi-Square** | 277949.9 |
| **Pearson Chi-Square / DF** | 252.68 |

| **Type III Tests of Fixed Effects** | | | | |
| --- | --- | --- | --- | --- |
| **Effect** | **Num DF** | **Den DF** | **F Value** | **Pr > F** |
| **moves** | 1 | 1056 | 19.74 | <.0001 |
| **mort\_time** | 1 | 1056 | 16.27 | <.0001 |
| **mort\_time\*moves** | 1 | 1056 | 13.55 | 0.0002 |
| **mort\_percent** | 4 | 1056 | 48364.7 | <.0001 |
| **mort\_percent\*moves** | 4 | 1056 | 2.41 | 0.0477 |
| **mort\_time\*mort\_perce** | 4 | 1056 | 11682.1 | <.0001 |
| **mort\_t\*mort\_pe\*moves** | 4 | 1056 | 1.10 | 0.3570 |
| **hatch\_interval** | 1 | 1056 | 2223.65 | <.0001 |
| **hatch\_interval\*moves** | 1 | 1056 | 35.00 | <.0001 |
| **mort\_time\*hatch\_inte** | 1 | 1056 | 21.66 | <.0001 |
| **mort\_t\*hatch\_i\*moves** | 1 | 1056 | 3.15 | 0.0763 |
| **mort\_perc\*hatch\_inte** | 4 | 1056 | 170.67 | <.0001 |
| **mort\_p\*hatch\_i\*moves** | 4 | 1056 | 4.90 | 0.0006 |
| **mort\_t\*mort\_p\*hatch\_** | 4 | 1056 | 204.72 | <.0001 |
| **mort\*mort\*hatc\*moves** | 4 | 1056 | 3.55 | 0.0069 |

|  |
| --- |
| The SAS System |

The GLIMMIX Procedure

| **Model Information** | |
| --- | --- |
| **Data Set** | WORK.DIFFERENCE |
| **Response Variable** | diff |
| **Response Distribution** | Shifted T(3) |
| **Link Function** | Identity |
| **Variance Function** | Default |
| **Variance Matrix** | Diagonal |
| **Estimation Technique** | Maximum Likelihood |
| **Degrees of Freedom Method** | Residual |

| **Class Level Information** | | |
| --- | --- | --- |
| **Class** | **Levels** | **Values** |
| **treatment** | 44 | 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 |

|  |  |
| --- | --- |
| **Number of Observations Read** | 1101 |
| **Number of Observations Used** | 1100 |

| **Dimensions** | |
| --- | --- |
| **Covariance Parameters** | 2 |
| **Columns in X** | 45 |
| **Columns in Z** | 0 |
| **Subjects (Blocks in V)** | 1 |
| **Max Obs per Subject** | 1100 |

| **Optimization Information** | |
| --- | --- |
| **Optimization Technique** | Newton-Raphson |
| **Parameters in Optimization** | 45 |
| **Lower Boundaries** | 1 |
| **Upper Boundaries** | 0 |
| **Fixed Effects** | Not Profiled |

| **Iteration History** | | | | | |
| --- | --- | --- | --- | --- | --- |
| **Iteration** | **Restarts** | **Evaluations** | **Objective Function** | **Change** | **Max Gradient** |
| **0** | **0** | 4 | 5267.5254251 | . | 1.489076 |
| **1** | **0** | 3 | 5226.0183495 | 41.50707565 | 0.22554 |
| **2** | **0** | 3 | 5217.4988975 | 8.51945192 | 0.052439 |
| **3** | **0** | 3 | 5216.7750105 | 0.72388706 | 0.004996 |
| **4** | **0** | 3 | 5216.7673975 | 0.00761293 | 0.000057 |
| **5** | **0** | 3 | 5216.7673965 | 0.00000102 | 7.804E-9 |

|  |
| --- |
| Convergence criterion (GCONV=1E-8) satisfied. |

| **Fit Statistics** | |
| --- | --- |
| **-2 Log Likelihood** | 10433.53 |
| **AIC (smaller is better)** | 10523.53 |
| **AICC (smaller is better)** | 10527.46 |
| **BIC (smaller is better)** | 10748.67 |
| **CAIC (smaller is better)** | 10793.67 |
| **HQIC (smaller is better)** | 10608.71 |
| **Pearson Chi-Square** | 277949.9 |
| **Pearson Chi-Square / DF** | 252.68 |

| **Type III Tests of Fixed Effects** | | | | |
| --- | --- | --- | --- | --- |
| **Effect** | **Num DF** | **Den DF** | **F Value** | **Pr > F** |
| **treatment** | 43 | 1056 | 6225.75 | <.0001 |

| **Estimates** | | | | | |
| --- | --- | --- | --- | --- | --- |
| **Label** | **Estimate** | **Standard Error** | **DF** | **t Value** | **Pr > |t|** |
| **moves = 1 asynch 10% early** | 20.8795 | 5.8108 | 1056 | 3.59 | 0.0003 |
| **moves = 1 asynch 25% early** | 91.9242 | 5.0916 | 1056 | 18.05 | <.0001 |
| **moves = 1 asynch 50% early** | 179.46 | 5.5434 | 1056 | 32.37 | <.0001 |
| **moves = 1 asynch 75% early** | -701.27 | 5.9250 | 1056 | -118.36 | <.0001 |
| **moves = 1 asynch 90% early** | -831.35 | 5.0882 | 1056 | -163.39 | <.0001 |
| **moves = 1 asynch 10% late** | -32.9924 | 5.1210 | 1056 | -6.44 | <.0001 |
| **moves = 1 asynch 25% late** | -97.0326 | 5.1541 | 1056 | -18.83 | <.0001 |
| **moves = 1 asynch 50% late** | -226.55 | 5.4622 | 1056 | -41.48 | <.0001 |
| **moves = 1 asynch 75% late** | -376.46 | 5.0246 | 1056 | -74.92 | <.0001 |
| **moves = 1 asynch 90% late** | -468.01 | 5.2403 | 1056 | -89.31 | <.0001 |
| **moves = 1 synch 10% early** | 71.1650 | 6.3259 | 1056 | 11.25 | <.0001 |
| **moves = 1 synch 25% early** | 196.03 | 5.4846 | 1056 | 35.74 | <.0001 |
| **moves = 1 synch 50% early** | 140.10 | 6.4142 | 1056 | 21.84 | <.0001 |
| **moves = 1 synch 75% early** | -596.53 | 5.5849 | 1056 | -106.81 | <.0001 |
| **moves = 1 synch 90% early** | -700.75 | 5.2256 | 1056 | -134.10 | <.0001 |
| **moves = 1 synch 10% late** | -19.8051 | 6.5871 | 1056 | -3.01 | 0.0027 |
| **moves = 1 synch 25% late** | -58.3707 | 5.5806 | 1056 | -10.46 | <.0001 |
| **moves = 1 synch 50% late** | -149.04 | 5.4239 | 1056 | -27.48 | <.0001 |
| **moves = 1 synch 75% late** | -310.10 | 5.8382 | 1056 | -53.12 | <.0001 |
| **moves = 1 synch 90% late** | -396.54 | 5.5590 | 1056 | -71.33 | <.0001 |
| **moves = 2 asynch 10% early** | 31.4301 | 5.4823 | 1056 | 5.73 | <.0001 |
| **moves = 2 asynch 25% early** | 96.3547 | 5.3592 | 1056 | 17.98 | <.0001 |
| **moves = 2 asynch 50% early** | 183.46 | 5.3457 | 1056 | 34.32 | <.0001 |
| **moves = 2 asynch 75% early** | -684.20 | 6.4364 | 1056 | -106.30 | <.0001 |
| **moves = 2 asynch 90% early** | -839.00 | 5.1015 | 1056 | -164.46 | <.0001 |
| **moves = 2 asynch 10% late** | -35.3078 | 5.2962 | 1056 | -6.67 | <.0001 |
| **moves = 2 asynch 25% late** | -99.1680 | 5.7098 | 1056 | -17.37 | <.0001 |
| **moves = 2 asynch 50% late** | -249.92 | 5.4444 | 1056 | -45.90 | <.0001 |
| **moves = 2 asynch 75% late** | -387.06 | 5.3860 | 1056 | -71.86 | <.0001 |
| **moves = 2 asynch 90% late** | -471.79 | 5.8827 | 1056 | -80.20 | <.0001 |
| **moves = 2 synch 10% early** | 67.8912 | 6.3907 | 1056 | 10.62 | <.0001 |
| **moves = 2 synch 25% early** | 222.20 | 5.8026 | 1056 | 38.29 | <.0001 |
| **moves = 2 synch 50% early** | 147.05 | 7.0830 | 1056 | 20.76 | <.0001 |
| **moves = 2 synch 75% early** | -577.91 | 5.8415 | 1056 | -98.93 | <.0001 |
| **moves = 2 synch 90% early** | -675.12 | 5.6110 | 1056 | -120.32 | <.0001 |
| **moves = 2 synch 10% late** | -23.0121 | 6.0483 | 1056 | -3.80 | 0.0002 |
| **moves = 2 synch 25% late** | -41.1644 | 5.7914 | 1056 | -7.11 | <.0001 |
| **moves = 2 synch 50% late** | -130.35 | 5.9480 | 1056 | -21.92 | <.0001 |
| **moves = 2 synch 75% late** | -304.39 | 5.8589 | 1056 | -51.95 | <.0001 |
| **moves = 2 synch 90% late** | -385.51 | 5.5239 | 1056 | -69.79 | <.0001 |