**Experiment No. 3**                                                                 **June 12, 2013, 12:31 pm**

## Singly Constrained Gravity Model (Origin)

Input Values :

| Base Year Origin-Destination Cost Matrix | | | |
|---|---|---|---|
| Zone | 1 | 2 | 3 |
| 1 | 3 | 10 | 15 |
| 2 | 10 | 5 | 10 |
| 3 | 15 | 10 | 5 |

| Future Year Origins Total | | | |
|---|---|---|---|
| Zone | 1 | 2 | 3 |
| | 10 | 15 | 8 |

| Future Year Destinations Total |
|---|

| Zone | 1 | 2 | 3 |
|------|---|---|---|
|      | 7 | 16 | 10 |

Selected Impedence Functions : Power Function [$F_{ij} = C_{ij}{}^{B}$]

B value = -2

Calculations :

| Impedance Matrix Calculations (Fij) | | | |
|------|------|------|------|
| Zone | 1 | 2 | 3 |
| 1 | 0.1111 | 0.01 | 0.0044 |
| 2 | 0.01 | 0.04 | 0.01 |
| 3 | 0.0044 | 0.01 | 0.04 |

| Dij*Fij | | | | |
|---|---|---|---|---|
| Zone | 1 | 2 | 3 | Sum Dij*Fij |
| 1 | 0.7778 | 0.16 | 0.0444 | 0.9822 |
| 2 | 0.07 | 0.64 | 0.1 | 0.81 |
| 3 | 0.0311 | 0.16 | 0.4 | 0.5911 |

| Interaction Probabilities (Pij) | | | |
|---|---|---|---|
| Zone | 1 | 2 | 3 |
| 1 | 0.7919 | 0.1629 | 0.0452 |
| 2 | 0.0864 | 0.7901 | 0.1235 |
| 3 | 0.0526 | 0.2707 | 0.6767 |

Final Result

| Origin Destination Matrix Tij | | | | | |
|---|---|---|---|---|---|
| Zone | 1 | 2 | 3 | Sum Dj*Fij | Future year Origins Total |
| 1 | 7.9186 | 1.629 | 0.4525 | 10 | 10 |
| 2 | 1.2963 | 11.8519 | 1.8519 | 15 | 15 |
| 3 | 0.4211 | 2.1654 | 5.4135 | 8 | 8 |