



Experiment No. 7

November 17, 2021, 2:24 am

Calibration Of Singly Constrained Gravity Model (Destination)

Input Values :

Base Year Origin-Destination Cost Matrix		
Origin	Destination	Cost
1	1	0
1	2	23.11
1	3	21.51
1	4	28.06

Origin	Destination	Cost
2	1	23.11
2	2	0
2	3	27.61
2	4	31



Origin	Destination	Cost
3	1	21.51
3	2	27.61
3	3	0
3	4	29.28

Origin	Destination	Cost
4	1	28.06
4	2	30.75
4	3	29.28
4	4	0



Given Base Year Trip Matrix

Origin	Destination	No. of Trips
1	1	0
1	2	1731
1	3	2
1	4	186

Origin	Destination	No. of Trips
2	1	1213
2	2	0
2	3	3
2	4	391

Origin	Destination	No. of Trips
3	1	55



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3	2	166
3	3	0
3	4	18

Origin	Destination	No. of Trips
4	1	228
4	2	687
4	3	1
4	4	0

Sum Totals of Origin		Sum Totals of Destination	
Origin	Totals	Destination	Totals
O1	1919	D1	1496



O2	1607	D2	2584
O3	239	D3	6
O4	916	D4	595

Selected Frictional Functions : Exponential Function [$F_{ij} = e^{-BC_{ij}}$]

Solution :

Trip Matrix with respect to Optimal Beta Value (Minimum SSE)		
Origin	Destination	No. of Trips
1	1	622
1	2	509
1	3	75
1	4	288



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Origin	Destination	No. of Trips
2	1	1052
2	2	902
2	3	130
2	4	498

Origin	Destination	No. of Trips
3	1	2
3	2	2
3	3	0
3	4	1

Origin	Destination	No. of Trips
4	1	242
4	2	202



4	3	30
4	4	119

Minimum Residual = 3043202.2309118	Optimal Beta = 0.001
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Target Oi	Modelled Oi	Target Dj	Modelled Dj
1919	1920.1989145356	1496	1496
1607	1616.1004316717	2584	2584
239	236.88138529714	6	6
916	907.81926849556	595	595

Beta	Residual SSE
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0.001	3043202.2309118
0.002	3043202.2309118
0.003	3043202.2309118
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0.007	3043202.2309118
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0.01	3043202.2309118
0.011	3043202.2309118
0.012	3043202.2309118
0.013	3043202.2309118
0.014	3043202.2309118
0.015	3043202.2309118



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0.016	3043202.2309118
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0.027	3043202.2309118
0.028	3043202.2309118
0.029	3043202.2309118
0.03	3043202.2309118



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0.043	3043202.2309118
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0.045	3043202.2309118



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0.046	3043202.2309118
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