

Report

User :Nabeela2661

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Email ID :nomad.nabeela@gmail.com

University/College Name :

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Experiment No. 7

February 14, 2019, 6:47 pm

Calibration Of Singly Constrained Gravity Model (Origin)

Input Values :

Base Year Origin-Destination Cost Matrix		
Origin	Destination	Cost
1	1	5
1	2	15
1	3	25

Origin	Destination	Cost
2	1	15
2	2	5
2	3	15

Origin	Destination	Cost
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3	1	25
3	2	15
3	3	5

Given Base Year Trip Matrix		
Origin	Destination	No. of Trips
1	1	30
1	2	5
1	3	85

Origin	Destination	No. of Trips
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2	1	45
2	2	20
2	3	105

Origin	Destination	No. of Trips
3	1	10
3	2	30
3	3	20

Sum Totals of Origin		Sum Totals of Destination	
Origin	Totals	Destination	Totals
O1	120	D1	85
O2	170	D2	55



O3	60	D3	210
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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	29
1	2	18
1	3	71

Origin	Destination	No. of Trips
2	1	41
2	2	26



2	3	101
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Origin	Destination	No. of Trips
3	1	14
3	2	9
3	3	36

Minimum Residual = 1154.9656696079	Optimal Beta = 0.001
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Target Oi	Modelled Oi	Target Dj	Modelled Dj
120	120	85	85.135114971906
170	170	55	55.25877639996
60	60	210	209.60610862813



Beta	Residual SSE
0.001	1154.9656696079
0.002	1154.9656696079
0.003	1154.9656696079
0.004	1154.9656696079
0.005	1154.9656696079
0.006	1154.9656696079
0.007	1154.9656696079
0.008	1154.9656696079
0.009	1154.9656696079
0.01	1154.9656696079
0.011	1154.9656696079
0.012	1154.9656696079
0.013	1154.9656696079
0.014	1154.9656696079



0.015	1154.9656696079
0.016	1154.9656696079
0.017	1154.9656696079
0.018	1154.9656696079
0.019	1154.9656696079
0.02	1154.9656696079
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0.042	1154.9656696079
0.043	1154.9656696079
0.044	1154.9656696079



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0.84	1154.9656696079
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0.863	1154.9656696079
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0.866	1154.9656696079
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0.868	1154.9656696079
0.869	1154.9656696079



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0.87	1154.9656696079
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0.876	1154.9656696079
0.877	1154.9656696079
0.878	1154.9656696079
0.879	1154.9656696079
0.88	1154.9656696079
0.881	1154.9656696079
0.882	1154.9656696079
0.883	1154.9656696079
0.884	1154.9656696079



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0.885	1154.9656696079
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0.989	1154.9656696079



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0.991	1154.9656696079
0.992	1154.9656696079
0.993	1154.9656696079
0.994	1154.9656696079
0.995	1154.9656696079
0.996	1154.9656696079
0.997	1154.9656696079
0.998	1154.9656696079
0.999	1154.9656696079



Experiment No. 7

February 14, 2019, 10:50 pm

Calibration Of Singly Constrained Gravity Model (Origin)

Input Values :

Base Year Origin-Destination Cost Matrix		
Origin	Destination	Cost
1	1	5
1	2	15
1	3	25

Origin	Destination	Cost
2	1	15
2	2	5
2	3	15

Origin	Destination	Cost
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3	1	25
3	2	15
3	3	5

Given Base Year Trip Matrix		
Origin	Destination	No. of Trips
1	1	30
1	2	5
1	3	85

Origin	Destination	No. of Trips
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2	1	45
2	2	20
2	3	105

Origin	Destination	No. of Trips
3	1	10
3	2	30
3	3	20

Sum Totals of Origin		Sum Totals of Destination	
Origin	Totals	Destination	Totals
O1	120	D1	85
O2	170	D2	55



O3	60	D3	210
----	----	----	-----

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	29
1	2	18
1	3	71

Origin	Destination	No. of Trips
2	1	41
2	2	26



2	3	101
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Origin	Destination	No. of Trips
3	1	14
3	2	9
3	3	36

Minimum Residual = 1154.9656696079	Optimal Beta = 0.001
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Target Oi	Modelled Oi	Target Dj	Modelled Dj
120	120	85	85.135114971906
170	170	55	55.25877639996
60	60	210	209.60610862813



Beta	Residual SSE
0.001	1154.9656696079
0.002	1154.9656696079
0.003	1154.9656696079
0.004	1154.9656696079
0.005	1154.9656696079
0.006	1154.9656696079
0.007	1154.9656696079
0.008	1154.9656696079
0.009	1154.9656696079
0.01	1154.9656696079
0.011	1154.9656696079
0.012	1154.9656696079
0.013	1154.9656696079
0.014	1154.9656696079



0.015	1154.9656696079
0.016	1154.9656696079
0.017	1154.9656696079
0.018	1154.9656696079
0.019	1154.9656696079
0.02	1154.9656696079
0.021	1154.9656696079
0.022	1154.9656696079
0.023	1154.9656696079
0.024	1154.9656696079
0.025	1154.9656696079
0.026	1154.9656696079
0.027	1154.9656696079
0.028	1154.9656696079
0.029	1154.9656696079



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0.03	1154.9656696079
0.031	1154.9656696079
0.032	1154.9656696079
0.033	1154.9656696079
0.034	1154.9656696079
0.035	1154.9656696079
0.036	1154.9656696079
0.037	1154.9656696079
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0.96	1154.9656696079
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0.965	1154.9656696079
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0.97	1154.9656696079
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0.989	1154.9656696079



0.99	1154.9656696079
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0.992	1154.9656696079
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0.996	1154.9656696079
0.997	1154.9656696079
0.998	1154.9656696079
0.999	1154.9656696079



Experiment No. 7

February 14, 2019, 6:47 pm

Calibration Of Singly Constrained Gravity Model (Origin)

Input Values :

Base Year Origin-Destination Cost Matrix		
Origin	Destination	Cost
1	1	5
1	2	15
1	3	25

Origin	Destination	Cost
2	1	15
2	2	5
2	3	15

Origin	Destination	Cost
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3	1	25
3	2	15
3	3	5

Given Base Year Trip Matrix		
Origin	Destination	No. of Trips
1	1	30
1	2	5
1	3	85

Origin	Destination	No. of Trips
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2	1	45
2	2	20
2	3	105

Origin	Destination	No. of Trips
3	1	10
3	2	30
3	3	20

Sum Totals of Origin		Sum Totals of Destination	
Origin	Totals	Destination	Totals
O1	120	D1	85
O2	170	D2	55



O3	60	D3	210
----	----	----	-----

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	29
1	2	18
1	3	71

Origin	Destination	No. of Trips
2	1	41
2	2	26



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2	3	101
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Origin	Destination	No. of Trips
3	1	14
3	2	9
3	3	36

Minimum Residual = 1154.9656696079	Optimal Beta = 0.001
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Target Oi	Modelled Oi	Target Dj	Modelled Dj
120	120	85	85.135114971906
170	170	55	55.25877639996
60	60	210	209.60610862813



Beta	Residual SSE
0.001	1154.9656696079
0.002	1154.9656696079
0.003	1154.9656696079
0.004	1154.9656696079
0.005	1154.9656696079
0.006	1154.9656696079
0.007	1154.9656696079
0.008	1154.9656696079
0.009	1154.9656696079
0.01	1154.9656696079
0.011	1154.9656696079
0.012	1154.9656696079
0.013	1154.9656696079
0.014	1154.9656696079



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0.018	1154.9656696079
0.019	1154.9656696079
0.02	1154.9656696079
0.021	1154.9656696079
0.022	1154.9656696079
0.023	1154.9656696079
0.024	1154.9656696079
0.025	1154.9656696079
0.026	1154.9656696079
0.027	1154.9656696079
0.028	1154.9656696079
0.029	1154.9656696079



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0.03	1154.9656696079
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0.032	1154.9656696079
0.033	1154.9656696079
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0.035	1154.9656696079
0.036	1154.9656696079
0.037	1154.9656696079
0.038	1154.9656696079
0.039	1154.9656696079
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0.042	1154.9656696079
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0.07	1154.9656696079
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0.072	1154.9656696079
0.073	1154.9656696079
0.074	1154.9656696079



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0.079	1154.9656696079
0.08	1154.9656696079
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0.112	1154.9656696079
0.113	1154.9656696079
0.114	1154.9656696079
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0.117	1154.9656696079
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