

Report

User :Nabeela2661

Name :Humir Yusuf Nabeela

Email ID :nomad.nabeela@gmail.com

University/College Name :



Experiment No. 4

February 14, 2019, 4:04 pm

Trip Distribution : Growth Factor Distribution Model Fratar Growth Factor Method

Input Values :

Origin-Destination Matrix For Base Year				
Zone	1	2	3	Origin Totals
1	30	5	85	120
2	45	20	105	170
3	10	30	20	60
Destination Totals	85	55	210	

Origin Totals For Future Year			
Zone	1	2	3
	140	225	60



Destination Totals For Future Year			
Zone	1	2	3
	95	50	280

Selected Accuracy : Individual Cell

Entered Accuracy Level (i.e., percentage of error): 2 %

Iteration # 1

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origins Total Base year	Origins Total Future year
1	35	5.833	99.167	140	140
2	59.559	26.471	138.971	225	225
3	10	30	20	60	60
Destinations Total Base year	104.559	62.304	258.137		
Destination Total Future year	95	50	280		

Fratar Growth Factor Matrix For Future Year



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Zone	1	2	3	Origin Totals Base Year	Origins Total Future year
1	31.8	4.681	107.566	144.047	140
2	54.114	21.243	150.741	226.098	225
3	9.086	24.076	21.694	54.855	60
Destination Total Base year	95	50	280		
Destination Total Future year	95	50	280		

Iteration # 2

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origins Total Base year	Origins Total Future year
1	30.897	4.828	104.276	140	140



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2	53.761	20.907	150.332	225	225
3	9.818	26.182	24	60	60
Destinations Total Base year	94.476	51.916	278.608		
Destination Total Future year	95	50	280		

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origin Totals Base Year	Origins Total Future year
1	31.068	4.649	104.797	140.514	140
2	54.059	20.135	151.083	225.278	225
3	9.873	25.215	24.12	59.208	60
Destination Total Base year	95	50	280		
Destination Total Future year	95	50	280		



Iteration # 3

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origins Total Base year	Origins Total Future year
1	30.78	4.965	104.255	140	140
2	54	20	151	225	225
3	10.169	25.424	24.407	60	60
Destinations Total Base year	94.95	50.388	279.662		
Destination Total Future year	95	50	280		

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origin Totals Base Year	Origins Total Future year
1	30.796	4.926	104.381	140.104	140
2	54.029	19.846	151.182	225.057	225
3	10.175	25.228	24.436	59.839	60
Destination Total Base year	95	50	280		



Destination Total Future year	95	50	280
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Final Result

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origin Totals Base Year	Origins Total Future year
1	30.78	4.965	104.255	140	140
2	54	20	151	225	225
3	10.169	25.424	24.407	60	60
Destination Total Base year	94.95	50.388	279.662		
Destination Total Future year	95	50	280		



Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origin Totals Base Year	Origins Total Future year
1	30.796	4.926	104.381	140.104	140
2	54.029	19.846	151.182	225.057	225
3	10.175	25.228	24.436	59.839	60
Destination Total Base year	95	50	280		
Destination Total Future year	95	50	280		

No. of Iteration taken to reach final result : 3

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Origin Totals For Future Year			
Zone	1	2	3
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Destination Totals For Future Year			
Zone	1	2	3
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Selected Accuracy : Individual Cell

Entered Accuracy Level (i.e., percentage of error): 2 %

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Zone	1	2	3	Origins Total Base year	Origins Total Future year
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Fratar Growth Factor Matrix For Future Year



Zone	1	2	3	Origin Totals Base Year	Origins Total Future year
1	31.8	4.681	107.566	144.047	140
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Iteration # 2

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Final Result

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Zone	1	2	3
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Destination Total Future year	95	50	280
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Destination Totals	85	55	210	

Origin Totals For Future Year			
Zone	1	2	3
	140	225	60



Destination Totals For Future Year			
Zone	1	2	3
	95	50	280

Selected Accuracy : Individual Cell

Entered Accuracy Level (i.e., percentage of error): 2 %

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Zone	1	2	3	Origins Total Base year	Origins Total Future year
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Destination Total Future year	95	50	280		

Fratar Growth Factor Matrix For Future Year



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Zone	1	2	3	Origin Totals Base Year	Origins Total Future year
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2	54.059	20.135	151.083	225.278	225
3	9.873	25.215	24.12	59.208	60
Destination Total Base year	95	50	280		
Destination Total Future year	95	50	280		



Iteration # 3

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origins Total Base year	Origins Total Future year
1	30.78	4.965	104.255	140	140
2	54	20	151	225	225
3	10.169	25.424	24.407	60	60
Destinations Total Base year	94.95	50.388	279.662		
Destination Total Future year	95	50	280		

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origin Totals Base Year	Origins Total Future year
1	30.796	4.926	104.381	140.104	140
2	54.029	19.846	151.182	225.057	225
3	10.175	25.228	24.436	59.839	60
Destination Total Base year	95	50	280		



Destination Total Future year	95	50	280
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Final Result

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origin Totals Base Year	Origins Total Future year
1	30.78	4.965	104.255	140	140
2	54	20	151	225	225
3	10.169	25.424	24.407	60	60
Destination Total Base year	94.95	50.388	279.662		
Destination Total Future year	95	50	280		



Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origin Totals Base Year	Origins Total Future year
1	30.796	4.926	104.381	140.104	140
2	54.029	19.846	151.182	225.057	225
3	10.175	25.228	24.436	59.839	60
Destination Total Base year	95	50	280		
Destination Total Future year	95	50	280		

No. of Iteration taken to reach final result : 3

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Experiment No. 4

February 14, 2019, 3:20 pm

Trip Distribution : Growth Factor Distribution Model Fratar Growth Factor Method

Input Values :

Origin-Destination Matrix For Base Year				
Zone	1	2	3	Origin Totals
1	30	45	10	85
2	5	20	30	55
3	85	105	20	210
Destination Totals	120	170	60	

Origin Totals For Future Year			
Zone	1	2	3
	140	225	60



Destination Totals For Future Year			
Zone	1	2	3
	95	50	280

Selected Accuracy : Individual Cell

Entered Accuracy Level (i.e., percentage of error): 1 %

Iteration # 1

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origins Total Base year	Origins Total Future year
1	49.412	74.118	16.471	140	140
2	20.455	81.818	122.727	225	225
3	24.286	30	5.714	60	60
Destinations Total Base year	94.152	185.936	144.912		
Destination Total Future year	95	50	280		

Fratar Growth Factor Matrix For Future Year



Zone	1	2	3	Origin Totals Base Year	Origins Total Future year
1	49.857	19.931	31.825	101.612	140
2	20.639	22.002	237.134	279.775	225
3	24.504	8.067	11.041	43.613	60
Destination Total Base year	95	50	280		
Destination Total Future year	95	50	280		

Iteration # 2

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origins Total Base year	Origins Total Future year
1	68.627	27.451	43.922	140	140



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2	16.875	17.679	190.446	225	225
3	34.091	10.909	15	60	60
Destinations Total Base year	119.593	56.039	249.368		
Destination Total Future year	95	50	280		

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origin Totals Base Year	Origins Total Future year
1	54.515	24.493	49.317	128.325	140
2	13.405	15.774	213.841	243.019	225
3	27.08	9.734	16.843	53.657	60
Destination Total Base year	95	50	280		
Destination Total Future year	95	50	280		



Iteration # 3

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origins Total Base year	Origins Total Future year
1	60.156	26.25	53.594	140	140
2	12.037	14.815	198.148	225	225
3	30	11.111	18.889	60	60
Destinations Total Base year	102.193	52.176	270.631		
Destination Total Future year	95	50	280		

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origin Totals Base Year	Origins Total Future year
1	55.922	25.155	55.449	136.526	140
2	11.19	14.197	205.008	230.395	225
3	27.888	10.648	19.543	58.079	60
Destination Total Base year	95	50	280		



Destination Total Future year	95	50	280
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Iteration # 4

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origins Total Base year	Origins Total Future year
1	57.647	25.735	56.618	140	140
2	10.761	13.696	200.543	225	225
3	28.475	11.186	20.339	60	60
Destinations Total Base year	96.883	50.617	277.5		
Destination Total Future year	95	50	280		



Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origin Totals Base Year	Origins Total Future year
1	56.527	25.421	57.128	139.076	140
2	10.552	13.529	202.35	226.43	225
3	27.921	11.05	20.522	59.493	60
Destination Total Base year	95	50	280		
Destination Total Future year	95	50	280		

Iteration # 5

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origins Total Base year	Origins Total Future year



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1	57.41	25.18	57.41	140	140
2	10.903	13.877	200.22	225	225
3	28	11	21	60	60
Destinations Total Base year	96.313	50.057	278.63		
Destination Total Future year	95	50	280		

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origin Totals Base Year	Origins Total Future year
1	56.627	25.151	57.692	139.471	140
2	10.754	13.861	201.204	225.82	225
3	27.618	10.988	21.103	59.709	60
Destination Total Base year	95	50	280		
Destination Total Future year	95	50	280		



Final Result

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origin Totals Base Year	Origins Total Future year
1	57.41	25.18	57.41	140	140
2	10.903	13.877	200.22	225	225
3	28	11	21	60	60
Destination Total Base year	96.313	50.057	278.63		
Destination Total Future year	95	50	280		

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origin Totals Base Year	Origins Total Future year
1	56.627	25.151	57.692	139.471	140
2	10.754	13.861	201.204	225.82	225
3	27.618	10.988	21.103	59.709	60



Destination Total Base year	95	50	280
Destination Total Future year	95	50	280

No. of Iteration taken to reach final result : 5



Experiment No. 4

February 14, 2019, 4:01 pm

Trip Distribution : Growth Factor Distribution Model Fratar Growth Factor Method

Input Values :

Origin-Destination Matrix For Base Year				
Zone	1	2	3	Origin Totals
1	30	5	85	120
2	45	20	105	170
3	10	30	20	60
Destination Totals	85	55	210	

Origin Totals For Future Year			
Zone	1	2	3
	140	225	60



Destination Totals For Future Year			
Zone	1	2	3
	95	50	280

Selected Accuracy : Individual Cell

Entered Accuracy Level (i.e., percentage of error): 3 %

Iteration # 1

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origins Total Base year	Origins Total Future year
1	35	5.833	99.167	140	140
2	59.559	26.471	138.971	225	225
3	10	30	20	60	60
Destinations Total Base year	104.559	62.304	258.137		
Destination Total Future year	95	50	280		

Fratar Growth Factor Matrix For Future Year



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Zone	1	2	3	Origin Totals Base Year	Origins Total Future year
1	31.8	4.681	107.566	144.047	140
2	54.114	21.243	150.741	226.098	225
3	9.086	24.076	21.694	54.855	60
Destination Total Base year	95	50	280		
Destination Total Future year	95	50	280		

Final Result

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origin Totals Base Year	Origins Total Future year



1	15.135	1.892	122.973	140	140
2	28.602	5.72	190.678	225	225
3	7.869	9.836	42.295	60	60
Destination Total Base year	51.606	17.448	355.946		
Destination Total Future year	95	50	280		

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origin Totals Base Year	Origins Total Future year
1	13.751	1.518	133.388	148.658	140
2	25.987	4.591	206.827	237.405	225
3	7.149	7.894	45.877	60.92	60
Destination Total Base year	46.888	14.003	386.093		
Destination Total Future year	95	50	280		

No. of Iteration taken to reach final result : 7



Experiment No. 4

February 14, 2019, 3:20 pm

Trip Distribution : Growth Factor Distribution Model Fratar Growth Factor Method

Input Values :

Origin-Destination Matrix For Base Year				
Zone	1	2	3	Origin Totals
1	30	45	10	85
2	5	20	30	55
3	85	105	20	210
Destination Totals	120	170	60	

Origin Totals For Future Year			
Zone	1	2	3
	140	225	60



Destination Totals For Future Year			
Zone	1	2	3
	95	50	280

Selected Accuracy : Individual Cell

Entered Accuracy Level (i.e., percentage of error): 1 %

Iteration # 1

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origins Total Base year	Origins Total Future year
1	49.412	74.118	16.471	140	140
2	20.455	81.818	122.727	225	225
3	24.286	30	5.714	60	60
Destinations Total Base year	94.152	185.936	144.912		
Destination Total Future year	95	50	280		

Fratar Growth Factor Matrix For Future Year



Zone	1	2	3	Origin Totals Base Year	Origins Total Future year
1	49.857	19.931	31.825	101.612	140
2	20.639	22.002	237.134	279.775	225
3	24.504	8.067	11.041	43.613	60
Destination Total Base year	95	50	280		
Destination Total Future year	95	50	280		

Iteration # 2

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origins Total Base year	Origins Total Future year
1	68.627	27.451	43.922	140	140



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2	16.875	17.679	190.446	225	225
3	34.091	10.909	15	60	60
Destinations Total Base year	119.593	56.039	249.368		
Destination Total Future year	95	50	280		

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origin Totals Base Year	Origins Total Future year
1	54.515	24.493	49.317	128.325	140
2	13.405	15.774	213.841	243.019	225
3	27.08	9.734	16.843	53.657	60
Destination Total Base year	95	50	280		
Destination Total Future year	95	50	280		



Iteration # 3

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origins Total Base year	Origins Total Future year
1	60.156	26.25	53.594	140	140
2	12.037	14.815	198.148	225	225
3	30	11.111	18.889	60	60
Destinations Total Base year	102.193	52.176	270.631		
Destination Total Future year	95	50	280		

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origin Totals Base Year	Origins Total Future year
1	55.922	25.155	55.449	136.526	140
2	11.19	14.197	205.008	230.395	225
3	27.888	10.648	19.543	58.079	60
Destination Total Base year	95	50	280		



Destination Total Future year	95	50	280
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Iteration # 4

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origins Total Base year	Origins Total Future year
1	57.647	25.735	56.618	140	140
2	10.761	13.696	200.543	225	225
3	28.475	11.186	20.339	60	60
Destinations Total Base year	96.883	50.617	277.5		
Destination Total Future year	95	50	280		



Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origin Totals Base Year	Origins Total Future year
1	56.527	25.421	57.128	139.076	140
2	10.552	13.529	202.35	226.43	225
3	27.921	11.05	20.522	59.493	60
Destination Total Base year	95	50	280		
Destination Total Future year	95	50	280		

Iteration # 5

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origins Total Base year	Origins Total Future year



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1	57.41	25.18	57.41	140	140
2	10.903	13.877	200.22	225	225
3	28	11	21	60	60
Destinations Total Base year	96.313	50.057	278.63		
Destination Total Future year	95	50	280		

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origin Totals Base Year	Origins Total Future year
1	56.627	25.151	57.692	139.471	140
2	10.754	13.861	201.204	225.82	225
3	27.618	10.988	21.103	59.709	60
Destination Total Base year	95	50	280		
Destination Total Future year	95	50	280		



Final Result

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origin Totals Base Year	Origins Total Future year
1	57.41	25.18	57.41	140	140
2	10.903	13.877	200.22	225	225
3	28	11	21	60	60
Destination Total Base year	96.313	50.057	278.63		
Destination Total Future year	95	50	280		

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origin Totals Base Year	Origins Total Future year
1	56.627	25.151	57.692	139.471	140
2	10.754	13.861	201.204	225.82	225
3	27.618	10.988	21.103	59.709	60



Destination Total Base year	95	50	280
Destination Total Future year	95	50	280

No. of Iteration taken to reach final result : 5



Experiment No. 4

February 14, 2019, 4:01 pm

**Trip Distribution : Growth Factor Distribution Model
Fratar Growth Factor Method**

Input Values :

Origin-Destination Matrix For Base Year				
Zone	1	2	3	Origin Totals
1	30	5	85	120
2	45	20	105	170
3	10	30	20	60
Destination Totals	85	55	210	

Origin Totals For Future Year			
Zone	1	2	3
	140	225	60



Destination Totals For Future Year			
Zone	1	2	3
	95	50	280

Selected Accuracy : Individual Cell

Entered Accuracy Level (i.e., percentage of error): 3 %

Iteration # 1

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origins Total Base year	Origins Total Future year
1	35	5.833	99.167	140	140
2	59.559	26.471	138.971	225	225
3	10	30	20	60	60
Destinations Total Base year	104.559	62.304	258.137		
Destination Total Future year	95	50	280		

Fratar Growth Factor Matrix For Future Year



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Zone	1	2	3	Origin Totals Base Year	Origins Total Future year
1	31.8	4.681	107.566	144.047	140
2	54.114	21.243	150.741	226.098	225
3	9.086	24.076	21.694	54.855	60
Destination Total Base year	95	50	280		
Destination Total Future year	95	50	280		

Final Result

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origin Totals Base Year	Origins Total Future year



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1	15.135	1.892	122.973	140	140
2	28.602	5.72	190.678	225	225
3	7.869	9.836	42.295	60	60
Destination Total Base year	51.606	17.448	355.946		
Destination Total Future year	95	50	280		

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origin Totals Base Year	Origins Total Future year
1	13.751	1.518	133.388	148.658	140
2	25.987	4.591	206.827	237.405	225
3	7.149	7.894	45.877	60.92	60
Destination Total Base year	46.888	14.003	386.093		
Destination Total Future year	95	50	280		

No. of Iteration taken to reach final result : 7



Experiment No. 4

February 14, 2019, 3:20 pm

Trip Distribution : Growth Factor Distribution Model Fratar Growth Factor Method

Input Values :

Origin-Destination Matrix For Base Year				
Zone	1	2	3	Origin Totals
1	30	45	10	85
2	5	20	30	55
3	85	105	20	210
Destination Totals	120	170	60	

Origin Totals For Future Year			
Zone	1	2	3
	140	225	60



Destination Totals For Future Year			
Zone	1	2	3
	95	50	280

Selected Accuracy : Individual Cell

Entered Accuracy Level (i.e., percentage of error): 1 %

Iteration # 1

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origins Total Base year	Origins Total Future year
1	49.412	74.118	16.471	140	140
2	20.455	81.818	122.727	225	225
3	24.286	30	5.714	60	60
Destinations Total Base year	94.152	185.936	144.912		
Destination Total Future year	95	50	280		

Fratar Growth Factor Matrix For Future Year



Zone	1	2	3	Origin Totals Base Year	Origins Total Future year
1	49.857	19.931	31.825	101.612	140
2	20.639	22.002	237.134	279.775	225
3	24.504	8.067	11.041	43.613	60
Destination Total Base year	95	50	280		
Destination Total Future year	95	50	280		

Iteration # 2

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origins Total Base year	Origins Total Future year
1	68.627	27.451	43.922	140	140



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2	16.875	17.679	190.446	225	225
3	34.091	10.909	15	60	60
Destinations Total Base year	119.593	56.039	249.368		
Destination Total Future year	95	50	280		

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origin Totals Base Year	Origins Total Future year
1	54.515	24.493	49.317	128.325	140
2	13.405	15.774	213.841	243.019	225
3	27.08	9.734	16.843	53.657	60
Destination Total Base year	95	50	280		
Destination Total Future year	95	50	280		



Iteration # 3

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origins Total Base year	Origins Total Future year
1	60.156	26.25	53.594	140	140
2	12.037	14.815	198.148	225	225
3	30	11.111	18.889	60	60
Destinations Total Base year	102.193	52.176	270.631		
Destination Total Future year	95	50	280		

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origin Totals Base Year	Origins Total Future year
1	55.922	25.155	55.449	136.526	140
2	11.19	14.197	205.008	230.395	225
3	27.888	10.648	19.543	58.079	60
Destination Total Base year	95	50	280		



Destination Total Future year	95	50	280
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Iteration # 4

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origins Total Base year	Origins Total Future year
1	57.647	25.735	56.618	140	140
2	10.761	13.696	200.543	225	225
3	28.475	11.186	20.339	60	60
Destinations Total Base year	96.883	50.617	277.5		
Destination Total Future year	95	50	280		



Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origin Totals Base Year	Origins Total Future year
1	56.527	25.421	57.128	139.076	140
2	10.552	13.529	202.35	226.43	225
3	27.921	11.05	20.522	59.493	60
Destination Total Base year	95	50	280		
Destination Total Future year	95	50	280		

Iteration # 5

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origins Total Base year	Origins Total Future year



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1	57.41	25.18	57.41	140	140
2	10.903	13.877	200.22	225	225
3	28	11	21	60	60
Destinations Total Base year	96.313	50.057	278.63		
Destination Total Future year	95	50	280		

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origin Totals Base Year	Origins Total Future year
1	56.627	25.151	57.692	139.471	140
2	10.754	13.861	201.204	225.82	225
3	27.618	10.988	21.103	59.709	60
Destination Total Base year	95	50	280		
Destination Total Future year	95	50	280		



Final Result

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origin Totals Base Year	Origins Total Future year
1	57.41	25.18	57.41	140	140
2	10.903	13.877	200.22	225	225
3	28	11	21	60	60
Destination Total Base year	96.313	50.057	278.63		
Destination Total Future year	95	50	280		

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origin Totals Base Year	Origins Total Future year
1	56.627	25.151	57.692	139.471	140
2	10.754	13.861	201.204	225.82	225
3	27.618	10.988	21.103	59.709	60



Destination Total Base year	95	50	280
Destination Total Future year	95	50	280

No. of Iteration taken to reach final result : 5



Experiment No. 4

February 14, 2019, 4:06 pm

Trip Distribution : Growth Factor Distribution Model Fratar Growth Factor Method

Input Values :

Origin-Destination Matrix For Base Year				
Zone	1	2	3	Origin Totals
1	30	5	85	120
2	45	20	105	170
3	10	30	20	60
Destination Totals	85	55	210	

Origin Totals For Future Year			
Zone	1	2	3
	140	225	60



Destination Totals For Future Year			
Zone	1	2	3
	95	50	280

Selected Accuracy : Individual Cell

Entered Accuracy Level (i.e., percentage of error): 3 %

Iteration # 1

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origins Total Base year	Origins Total Future year
1	35	5.833	99.167	140	140
2	59.559	26.471	138.971	225	225
3	10	30	20	60	60
Destinations Total Base year	104.559	62.304	258.137		
Destination Total Future year	95	50	280		

Fratar Growth Factor Matrix For Future Year



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Zone	1	2	3	Origin Totals Base Year	Origins Total Future year
1	31.8	4.681	107.566	144.047	140
2	54.114	21.243	150.741	226.098	225
3	9.086	24.076	21.694	54.855	60
Destination Total Base year	95	50	280		
Destination Total Future year	95	50	280		

Iteration # 2

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origins Total Base year	Origins Total Future year
1	30.897	4.828	104.276	140	140



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2	53.761	20.907	150.332	225	225
3	9.818	26.182	24	60	60
Destinations Total Base year	94.476	51.916	278.608		
Destination Total Future year	95	50	280		

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origin Totals Base Year	Origins Total Future year
1	31.068	4.649	104.797	140.514	140
2	54.059	20.135	151.083	225.278	225
3	9.873	25.215	24.12	59.208	60
Destination Total Base year	95	50	280		
Destination Total Future year	95	50	280		



Iteration # 3

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origins Total Base year	Origins Total Future year
1	30.78	4.965	104.255	140	140
2	54	20	151	225	225
3	10.169	25.424	24.407	60	60
Destinations Total Base year	94.95	50.388	279.662		
Destination Total Future year	95	50	280		

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origin Totals Base Year	Origins Total Future year
1	30.796	4.926	104.381	140.104	140
2	54.029	19.846	151.182	225.057	225
3	10.175	25.228	24.436	59.839	60
Destination Total Base year	95	50	280		



Destination Total Future year	95	50	280
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Final Result

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origin Totals Base Year	Origins Total Future year
1	30.78	4.965	104.255	140	140
2	54	20	151	225	225
3	10.169	25.424	24.407	60	60
Destination Total Base year	94.95	50.388	279.662		
Destination Total Future year	95	50	280		



Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origin Totals Base Year	Origins Total Future year
1	30.796	4.926	104.381	140.104	140
2	54.029	19.846	151.182	225.057	225
3	10.175	25.228	24.436	59.839	60
Destination Total Base year	95	50	280		
Destination Total Future year	95	50	280		

No. of Iteration taken to reach final result : 3



Experiment No. 4

February 14, 2019, 4:01 pm

Trip Distribution : Growth Factor Distribution Model Fratar Growth Factor Method

Input Values :

Origin-Destination Matrix For Base Year				
Zone	1	2	3	Origin Totals
1	30	5	85	120
2	45	20	105	170
3	10	30	20	60
Destination Totals	85	55	210	

Origin Totals For Future Year			
Zone	1	2	3
	140	225	60



Destination Totals For Future Year			
Zone	1	2	3
	95	50	280

Selected Accuracy : Individual Cell

Entered Accuracy Level (i.e., percentage of error): 3 %

Iteration # 1

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origins Total Base year	Origins Total Future year
1	35	5.833	99.167	140	140
2	59.559	26.471	138.971	225	225
3	10	30	20	60	60
Destinations Total Base year	104.559	62.304	258.137		
Destination Total Future year	95	50	280		

Fratar Growth Factor Matrix For Future Year



Zone	1	2	3	Origin Totals Base Year	Origins Total Future year
1	31.8	4.681	107.566	144.047	140
2	54.114	21.243	150.741	226.098	225
3	9.086	24.076	21.694	54.855	60
Destination Total Base year	95	50	280		
Destination Total Future year	95	50	280		

Final Result

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origin Totals Base Year	Origins Total Future year



1	15.135	1.892	122.973	140	140
2	28.602	5.72	190.678	225	225
3	7.869	9.836	42.295	60	60
Destination Total Base year	51.606	17.448	355.946		
Destination Total Future year	95	50	280		

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origin Totals Base Year	Origins Total Future year
1	13.751	1.518	133.388	148.658	140
2	25.987	4.591	206.827	237.405	225
3	7.149	7.894	45.877	60.92	60
Destination Total Base year	46.888	14.003	386.093		
Destination Total Future year	95	50	280		

No. of Iteration taken to reach final result : 7



Experiment No. 4

February 14, 2019, 3:20 pm

Trip Distribution : Growth Factor Distribution Model Fratar Growth Factor Method

Input Values :

Origin-Destination Matrix For Base Year				
Zone	1	2	3	Origin Totals
1	30	45	10	85
2	5	20	30	55
3	85	105	20	210
Destination Totals	120	170	60	

Origin Totals For Future Year			
Zone	1	2	3
	140	225	60



Destination Totals For Future Year			
Zone	1	2	3
	95	50	280

Selected Accuracy : Individual Cell

Entered Accuracy Level (i.e., percentage of error): 1 %

Iteration # 1

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origins Total Base year	Origins Total Future year
1	49.412	74.118	16.471	140	140
2	20.455	81.818	122.727	225	225
3	24.286	30	5.714	60	60
Destinations Total Base year	94.152	185.936	144.912		
Destination Total Future year	95	50	280		

Fratar Growth Factor Matrix For Future Year



Zone	1	2	3	Origin Totals Base Year	Origins Total Future year
1	49.857	19.931	31.825	101.612	140
2	20.639	22.002	237.134	279.775	225
3	24.504	8.067	11.041	43.613	60
Destination Total Base year	95	50	280		
Destination Total Future year	95	50	280		

Iteration # 2

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origins Total Base year	Origins Total Future year
1	68.627	27.451	43.922	140	140



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2	16.875	17.679	190.446	225	225
3	34.091	10.909	15	60	60
Destinations Total Base year	119.593	56.039	249.368		
Destination Total Future year	95	50	280		

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origin Totals Base Year	Origins Total Future year
1	54.515	24.493	49.317	128.325	140
2	13.405	15.774	213.841	243.019	225
3	27.08	9.734	16.843	53.657	60
Destination Total Base year	95	50	280		
Destination Total Future year	95	50	280		



Iteration # 3

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origins Total Base year	Origins Total Future year
1	60.156	26.25	53.594	140	140
2	12.037	14.815	198.148	225	225
3	30	11.111	18.889	60	60
Destinations Total Base year	102.193	52.176	270.631		
Destination Total Future year	95	50	280		

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origin Totals Base Year	Origins Total Future year
1	55.922	25.155	55.449	136.526	140
2	11.19	14.197	205.008	230.395	225
3	27.888	10.648	19.543	58.079	60
Destination Total Base year	95	50	280		



Destination Total Future year	95	50	280
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Iteration # 4

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origins Total Base year	Origins Total Future year
1	57.647	25.735	56.618	140	140
2	10.761	13.696	200.543	225	225
3	28.475	11.186	20.339	60	60
Destinations Total Base year	96.883	50.617	277.5		
Destination Total Future year	95	50	280		



Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origin Totals Base Year	Origins Total Future year
1	56.527	25.421	57.128	139.076	140
2	10.552	13.529	202.35	226.43	225
3	27.921	11.05	20.522	59.493	60
Destination Total Base year	95	50	280		
Destination Total Future year	95	50	280		

Iteration # 5

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origins Total Base year	Origins Total Future year



1	57.41	25.18	57.41	140	140
2	10.903	13.877	200.22	225	225
3	28	11	21	60	60
Destinations Total Base year	96.313	50.057	278.63		
Destination Total Future year	95	50	280		

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origin Totals Base Year	Origins Total Future year
1	56.627	25.151	57.692	139.471	140
2	10.754	13.861	201.204	225.82	225
3	27.618	10.988	21.103	59.709	60
Destination Total Base year	95	50	280		
Destination Total Future year	95	50	280		



Final Result

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origin Totals Base Year	Origins Total Future year
1	57.41	25.18	57.41	140	140
2	10.903	13.877	200.22	225	225
3	28	11	21	60	60
Destination Total Base year	96.313	50.057	278.63		
Destination Total Future year	95	50	280		

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origin Totals Base Year	Origins Total Future year
1	56.627	25.151	57.692	139.471	140
2	10.754	13.861	201.204	225.82	225
3	27.618	10.988	21.103	59.709	60



Destination Total Base year	95	50	280
Destination Total Future year	95	50	280

No. of Iteration taken to reach final result : 5



Experiment No. 4

February 14, 2019, 4:06 pm

Trip Distribution : Growth Factor Distribution Model Fratar Growth Factor Method

Input Values :

Origin-Destination Matrix For Base Year				
Zone	1	2	3	Origin Totals
1	30	5	85	120
2	45	20	105	170
3	10	30	20	60
Destination Totals	85	55	210	

Origin Totals For Future Year			
Zone	1	2	3
	140	225	60



Destination Totals For Future Year			
Zone	1	2	3
	95	50	280

Selected Accuracy : Individual Cell

Entered Accuracy Level (i.e., percentage of error): 3 %

Iteration # 1

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origins Total Base year	Origins Total Future year
1	35	5.833	99.167	140	140
2	59.559	26.471	138.971	225	225
3	10	30	20	60	60
Destinations Total Base year	104.559	62.304	258.137		
Destination Total Future year	95	50	280		

Fratar Growth Factor Matrix For Future Year



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Zone	1	2	3	Origin Totals Base Year	Origins Total Future year
1	31.8	4.681	107.566	144.047	140
2	54.114	21.243	150.741	226.098	225
3	9.086	24.076	21.694	54.855	60
Destination Total Base year	95	50	280		
Destination Total Future year	95	50	280		

Iteration # 2

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origins Total Base year	Origins Total Future year
1	30.897	4.828	104.276	140	140



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2	53.761	20.907	150.332	225	225
3	9.818	26.182	24	60	60
Destinations Total Base year	94.476	51.916	278.608		
Destination Total Future year	95	50	280		

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origin Totals Base Year	Origins Total Future year
1	31.068	4.649	104.797	140.514	140
2	54.059	20.135	151.083	225.278	225
3	9.873	25.215	24.12	59.208	60
Destination Total Base year	95	50	280		
Destination Total Future year	95	50	280		



Iteration # 3

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origins Total Base year	Origins Total Future year
1	30.78	4.965	104.255	140	140
2	54	20	151	225	225
3	10.169	25.424	24.407	60	60
Destinations Total Base year	94.95	50.388	279.662		
Destination Total Future year	95	50	280		

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origin Totals Base Year	Origins Total Future year
1	30.796	4.926	104.381	140.104	140
2	54.029	19.846	151.182	225.057	225
3	10.175	25.228	24.436	59.839	60
Destination Total Base year	95	50	280		



Destination Total Future year	95	50	280
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Final Result

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origin Totals Base Year	Origins Total Future year
1	30.78	4.965	104.255	140	140
2	54	20	151	225	225
3	10.169	25.424	24.407	60	60
Destination Total Base year	94.95	50.388	279.662		
Destination Total Future year	95	50	280		



Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origin Totals Base Year	Origins Total Future year
1	30.796	4.926	104.381	140.104	140
2	54.029	19.846	151.182	225.057	225
3	10.175	25.228	24.436	59.839	60
Destination Total Base year	95	50	280		
Destination Total Future year	95	50	280		

No. of Iteration taken to reach final result : 3



Experiment No. 4

February 14, 2019, 4:01 pm

Trip Distribution : Growth Factor Distribution Model Fratar Growth Factor Method

Input Values :

Origin-Destination Matrix For Base Year				
Zone	1	2	3	Origin Totals
1	30	5	85	120
2	45	20	105	170
3	10	30	20	60
Destination Totals	85	55	210	

Origin Totals For Future Year			
Zone	1	2	3
	140	225	60



Destination Totals For Future Year			
Zone	1	2	3
	95	50	280

Selected Accuracy : Individual Cell

Entered Accuracy Level (i.e., percentage of error): 3 %

Iteration # 1

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origins Total Base year	Origins Total Future year
1	35	5.833	99.167	140	140
2	59.559	26.471	138.971	225	225
3	10	30	20	60	60
Destinations Total Base year	104.559	62.304	258.137		
Destination Total Future year	95	50	280		

Fratar Growth Factor Matrix For Future Year



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Zone	1	2	3	Origin Totals Base Year	Origins Total Future year
1	31.8	4.681	107.566	144.047	140
2	54.114	21.243	150.741	226.098	225
3	9.086	24.076	21.694	54.855	60
Destination Total Base year	95	50	280		
Destination Total Future year	95	50	280		

Final Result

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origin Totals Base Year	Origins Total Future year



1	15.135	1.892	122.973	140	140
2	28.602	5.72	190.678	225	225
3	7.869	9.836	42.295	60	60
Destination Total Base year	51.606	17.448	355.946		
Destination Total Future year	95	50	280		

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origin Totals Base Year	Origins Total Future year
1	13.751	1.518	133.388	148.658	140
2	25.987	4.591	206.827	237.405	225
3	7.149	7.894	45.877	60.92	60
Destination Total Base year	46.888	14.003	386.093		
Destination Total Future year	95	50	280		

No. of Iteration taken to reach final result : 7



Experiment No. 4

February 14, 2019, 3:20 pm

Trip Distribution : Growth Factor Distribution Model Fratar Growth Factor Method

Input Values :

Origin-Destination Matrix For Base Year				
Zone	1	2	3	Origin Totals
1	30	45	10	85
2	5	20	30	55
3	85	105	20	210
Destination Totals	120	170	60	

Origin Totals For Future Year			
Zone	1	2	3
	140	225	60



Destination Totals For Future Year			
Zone	1	2	3
	95	50	280

Selected Accuracy : Individual Cell

Entered Accuracy Level (i.e., percentage of error): 1 %

Iteration # 1

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origins Total Base year	Origins Total Future year
1	49.412	74.118	16.471	140	140
2	20.455	81.818	122.727	225	225
3	24.286	30	5.714	60	60
Destinations Total Base year	94.152	185.936	144.912		
Destination Total Future year	95	50	280		

Fratar Growth Factor Matrix For Future Year



Zone	1	2	3	Origin Totals Base Year	Origins Total Future year
1	49.857	19.931	31.825	101.612	140
2	20.639	22.002	237.134	279.775	225
3	24.504	8.067	11.041	43.613	60
Destination Total Base year	95	50	280		
Destination Total Future year	95	50	280		

Iteration # 2

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origins Total Base year	Origins Total Future year
1	68.627	27.451	43.922	140	140



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2	16.875	17.679	190.446	225	225
3	34.091	10.909	15	60	60
Destinations Total Base year	119.593	56.039	249.368		
Destination Total Future year	95	50	280		

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origin Totals Base Year	Origins Total Future year
1	54.515	24.493	49.317	128.325	140
2	13.405	15.774	213.841	243.019	225
3	27.08	9.734	16.843	53.657	60
Destination Total Base year	95	50	280		
Destination Total Future year	95	50	280		



Iteration # 3

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origins Total Base year	Origins Total Future year
1	60.156	26.25	53.594	140	140
2	12.037	14.815	198.148	225	225
3	30	11.111	18.889	60	60
Destinations Total Base year	102.193	52.176	270.631		
Destination Total Future year	95	50	280		

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origin Totals Base Year	Origins Total Future year
1	55.922	25.155	55.449	136.526	140
2	11.19	14.197	205.008	230.395	225
3	27.888	10.648	19.543	58.079	60
Destination Total Base year	95	50	280		



Destination Total Future year	95	50	280
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Iteration # 4

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origins Total Base year	Origins Total Future year
1	57.647	25.735	56.618	140	140
2	10.761	13.696	200.543	225	225
3	28.475	11.186	20.339	60	60
Destinations Total Base year	96.883	50.617	277.5		
Destination Total Future year	95	50	280		



Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origin Totals Base Year	Origins Total Future year
1	56.527	25.421	57.128	139.076	140
2	10.552	13.529	202.35	226.43	225
3	27.921	11.05	20.522	59.493	60
Destination Total Base year	95	50	280		
Destination Total Future year	95	50	280		

Iteration # 5

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origins Total Base year	Origins Total Future year



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1	57.41	25.18	57.41	140	140
2	10.903	13.877	200.22	225	225
3	28	11	21	60	60
Destinations Total Base year	96.313	50.057	278.63		
Destination Total Future year	95	50	280		

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origin Totals Base Year	Origins Total Future year
1	56.627	25.151	57.692	139.471	140
2	10.754	13.861	201.204	225.82	225
3	27.618	10.988	21.103	59.709	60
Destination Total Base year	95	50	280		
Destination Total Future year	95	50	280		



Final Result

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origin Totals Base Year	Origins Total Future year
1	57.41	25.18	57.41	140	140
2	10.903	13.877	200.22	225	225
3	28	11	21	60	60
Destination Total Base year	96.313	50.057	278.63		
Destination Total Future year	95	50	280		

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origin Totals Base Year	Origins Total Future year
1	56.627	25.151	57.692	139.471	140
2	10.754	13.861	201.204	225.82	225
3	27.618	10.988	21.103	59.709	60



Destination Total Base year	95	50	280
Destination Total Future year	95	50	280

No. of Iteration taken to reach final result : 5



Experiment No. 4

February 14, 2019, 4:14 pm

Trip Distribution : Growth Factor Distribution Model Fratar Growth Factor Method

Input Values :

Origin-Destination Matrix For Base Year				
Zone	1	2	3	Origin Totals
1	30	5	85	120
2	45	20	105	170
3	10	30	20	60
Destination Totals	85	55	210	

Origin Totals For Future Year			
Zone	1	2	3
	140	225	60



Destination Totals For Future Year			
Zone	1	2	3
	95	50	280

Selected Accuracy : Individual Cell

Entered Accuracy Level (i.e., percentage of error): 2 %

Iteration # 1

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origins Total Base year	Origins Total Future year
1	35	5.833	99.167	140	140
2	59.559	26.471	138.971	225	225
3	10	30	20	60	60
Destinations Total Base year	104.559	62.304	258.137		
Destination Total Future year	95	50	280		

Fratar Growth Factor Matrix For Future Year



Zone	1	2	3	Origin Totals Base Year	Origins Total Future year
1	31.8	4.681	107.566	144.047	140
2	54.114	21.243	150.741	226.098	225
3	9.086	24.076	21.694	54.855	60
Destination Total Base year	95	50	280		
Destination Total Future year	95	50	280		

Iteration # 2

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origins Total Base year	Origins Total Future year
1	30.897	4.828	104.276	140	140



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2	53.761	20.907	150.332	225	225
3	9.818	26.182	24	60	60
Destinations Total Base year	94.476	51.916	278.608		
Destination Total Future year	95	50	280		

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origin Totals Base Year	Origins Total Future year
1	31.068	4.649	104.797	140.514	140
2	54.059	20.135	151.083	225.278	225
3	9.873	25.215	24.12	59.208	60
Destination Total Base year	95	50	280		
Destination Total Future year	95	50	280		



Iteration # 3

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origins Total Base year	Origins Total Future year
1	30.78	4.965	104.255	140	140
2	54	20	151	225	225
3	10.169	25.424	24.407	60	60
Destinations Total Base year	94.95	50.388	279.662		
Destination Total Future year	95	50	280		

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origin Totals Base Year	Origins Total Future year
1	30.796	4.926	104.381	140.104	140
2	54.029	19.846	151.182	225.057	225
3	10.175	25.228	24.436	59.839	60
Destination Total Base year	95	50	280		



Destination Total Future year	95	50	280
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Final Result

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origin Totals Base Year	Origins Total Future year
1	30.78	4.965	104.255	140	140
2	54	20	151	225	225
3	10.169	25.424	24.407	60	60
Destination Total Base year	94.95	50.388	279.662		
Destination Total Future year	95	50	280		



Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origin Totals Base Year	Origins Total Future year
1	30.796	4.926	104.381	140.104	140
2	54.029	19.846	151.182	225.057	225
3	10.175	25.228	24.436	59.839	60
Destination Total Base year	95	50	280		
Destination Total Future year	95	50	280		

No. of Iteration taken to reach final result : 3



Experiment No. 4

February 14, 2019, 4:06 pm

Trip Distribution : Growth Factor Distribution Model Fratar Growth Factor Method

Input Values :

Origin-Destination Matrix For Base Year				
Zone	1	2	3	Origin Totals
1	30	5	85	120
2	45	20	105	170
3	10	30	20	60
Destination Totals	85	55	210	

Origin Totals For Future Year			
Zone	1	2	3
	140	225	60



Destination Totals For Future Year			
Zone	1	2	3
	95	50	280

Selected Accuracy : Individual Cell

Entered Accuracy Level (i.e., percentage of error): 3 %

Iteration # 1

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origins Total Base year	Origins Total Future year
1	35	5.833	99.167	140	140
2	59.559	26.471	138.971	225	225
3	10	30	20	60	60
Destinations Total Base year	104.559	62.304	258.137		
Destination Total Future year	95	50	280		

Fratar Growth Factor Matrix For Future Year



Zone	1	2	3	Origin Totals Base Year	Origins Total Future year
1	31.8	4.681	107.566	144.047	140
2	54.114	21.243	150.741	226.098	225
3	9.086	24.076	21.694	54.855	60
Destination Total Base year	95	50	280		
Destination Total Future year	95	50	280		

Iteration # 2

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origins Total Base year	Origins Total Future year
1	30.897	4.828	104.276	140	140



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2	53.761	20.907	150.332	225	225
3	9.818	26.182	24	60	60
Destinations Total Base year	94.476	51.916	278.608		
Destination Total Future year	95	50	280		

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origin Totals Base Year	Origins Total Future year
1	31.068	4.649	104.797	140.514	140
2	54.059	20.135	151.083	225.278	225
3	9.873	25.215	24.12	59.208	60
Destination Total Base year	95	50	280		
Destination Total Future year	95	50	280		



Iteration # 3

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origins Total Base year	Origins Total Future year
1	30.78	4.965	104.255	140	140
2	54	20	151	225	225
3	10.169	25.424	24.407	60	60
Destinations Total Base year	94.95	50.388	279.662		
Destination Total Future year	95	50	280		

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origin Totals Base Year	Origins Total Future year
1	30.796	4.926	104.381	140.104	140
2	54.029	19.846	151.182	225.057	225
3	10.175	25.228	24.436	59.839	60
Destination Total Base year	95	50	280		



Destination Total Future year	95	50	280
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Final Result

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origin Totals Base Year	Origins Total Future year
1	30.78	4.965	104.255	140	140
2	54	20	151	225	225
3	10.169	25.424	24.407	60	60
Destination Total Base year	94.95	50.388	279.662		
Destination Total Future year	95	50	280		



Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origin Totals Base Year	Origins Total Future year
1	30.796	4.926	104.381	140.104	140
2	54.029	19.846	151.182	225.057	225
3	10.175	25.228	24.436	59.839	60
Destination Total Base year	95	50	280		
Destination Total Future year	95	50	280		

No. of Iteration taken to reach final result : 3



Experiment No. 4

February 14, 2019, 4:01 pm

Trip Distribution : Growth Factor Distribution Model Fratar Growth Factor Method

Input Values :

Origin-Destination Matrix For Base Year				
Zone	1	2	3	Origin Totals
1	30	5	85	120
2	45	20	105	170
3	10	30	20	60
Destination Totals	85	55	210	

Origin Totals For Future Year			
Zone	1	2	3
	140	225	60



Destination Totals For Future Year			
Zone	1	2	3
	95	50	280

Selected Accuracy : Individual Cell

Entered Accuracy Level (i.e., percentage of error): 3 %

Iteration # 1

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origins Total Base year	Origins Total Future year
1	35	5.833	99.167	140	140
2	59.559	26.471	138.971	225	225
3	10	30	20	60	60
Destinations Total Base year	104.559	62.304	258.137		
Destination Total Future year	95	50	280		

Fratar Growth Factor Matrix For Future Year



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Zone	1	2	3	Origin Totals Base Year	Origins Total Future year
1	31.8	4.681	107.566	144.047	140
2	54.114	21.243	150.741	226.098	225
3	9.086	24.076	21.694	54.855	60
Destination Total Base year	95	50	280		
Destination Total Future year	95	50	280		

Final Result

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origin Totals Base Year	Origins Total Future year



1	15.135	1.892	122.973	140	140
2	28.602	5.72	190.678	225	225
3	7.869	9.836	42.295	60	60
Destination Total Base year	51.606	17.448	355.946		
Destination Total Future year	95	50	280		

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origin Totals Base Year	Origins Total Future year
1	13.751	1.518	133.388	148.658	140
2	25.987	4.591	206.827	237.405	225
3	7.149	7.894	45.877	60.92	60
Destination Total Base year	46.888	14.003	386.093		
Destination Total Future year	95	50	280		

No. of Iteration taken to reach final result : 7



Experiment No. 4

February 14, 2019, 3:20 pm

Trip Distribution : Growth Factor Distribution Model Fratar Growth Factor Method

Input Values :

Origin-Destination Matrix For Base Year				
Zone	1	2	3	Origin Totals
1	30	45	10	85
2	5	20	30	55
3	85	105	20	210
Destination Totals	120	170	60	

Origin Totals For Future Year			
Zone	1	2	3
	140	225	60



Destination Totals For Future Year			
Zone	1	2	3
	95	50	280

Selected Accuracy : Individual Cell

Entered Accuracy Level (i.e., percentage of error): 1 %

Iteration # 1

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origins Total Base year	Origins Total Future year
1	49.412	74.118	16.471	140	140
2	20.455	81.818	122.727	225	225
3	24.286	30	5.714	60	60
Destinations Total Base year	94.152	185.936	144.912		
Destination Total Future year	95	50	280		

Fratar Growth Factor Matrix For Future Year



Zone	1	2	3	Origin Totals Base Year	Origins Total Future year
1	49.857	19.931	31.825	101.612	140
2	20.639	22.002	237.134	279.775	225
3	24.504	8.067	11.041	43.613	60
Destination Total Base year	95	50	280		
Destination Total Future year	95	50	280		

Iteration # 2

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origins Total Base year	Origins Total Future year
1	68.627	27.451	43.922	140	140



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2	16.875	17.679	190.446	225	225
3	34.091	10.909	15	60	60
Destinations Total Base year	119.593	56.039	249.368		
Destination Total Future year	95	50	280		

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origin Totals Base Year	Origins Total Future year
1	54.515	24.493	49.317	128.325	140
2	13.405	15.774	213.841	243.019	225
3	27.08	9.734	16.843	53.657	60
Destination Total Base year	95	50	280		
Destination Total Future year	95	50	280		



Iteration # 3

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origins Total Base year	Origins Total Future year
1	60.156	26.25	53.594	140	140
2	12.037	14.815	198.148	225	225
3	30	11.111	18.889	60	60
Destinations Total Base year	102.193	52.176	270.631		
Destination Total Future year	95	50	280		

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origin Totals Base Year	Origins Total Future year
1	55.922	25.155	55.449	136.526	140
2	11.19	14.197	205.008	230.395	225
3	27.888	10.648	19.543	58.079	60
Destination Total Base year	95	50	280		



Destination Total Future year	95	50	280
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Iteration # 4

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origins Total Base year	Origins Total Future year
1	57.647	25.735	56.618	140	140
2	10.761	13.696	200.543	225	225
3	28.475	11.186	20.339	60	60
Destinations Total Base year	96.883	50.617	277.5		
Destination Total Future year	95	50	280		



Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origin Totals Base Year	Origins Total Future year
1	56.527	25.421	57.128	139.076	140
2	10.552	13.529	202.35	226.43	225
3	27.921	11.05	20.522	59.493	60
Destination Total Base year	95	50	280		
Destination Total Future year	95	50	280		

Iteration # 5

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origins Total Base year	Origins Total Future year



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1	57.41	25.18	57.41	140	140
2	10.903	13.877	200.22	225	225
3	28	11	21	60	60
Destinations Total Base year	96.313	50.057	278.63		
Destination Total Future year	95	50	280		

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origin Totals Base Year	Origins Total Future year
1	56.627	25.151	57.692	139.471	140
2	10.754	13.861	201.204	225.82	225
3	27.618	10.988	21.103	59.709	60
Destination Total Base year	95	50	280		
Destination Total Future year	95	50	280		



Final Result

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origin Totals Base Year	Origins Total Future year
1	57.41	25.18	57.41	140	140
2	10.903	13.877	200.22	225	225
3	28	11	21	60	60
Destination Total Base year	96.313	50.057	278.63		
Destination Total Future year	95	50	280		

Fratar Growth Factor Matrix For Future Year					
Zone	1	2	3	Origin Totals Base Year	Origins Total Future year
1	56.627	25.151	57.692	139.471	140
2	10.754	13.861	201.204	225.82	225
3	27.618	10.988	21.103	59.709	60



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Destination Total Base year	95	50	280
Destination Total Future year	95	50	280

No. of Iteration taken to reach final result : 5