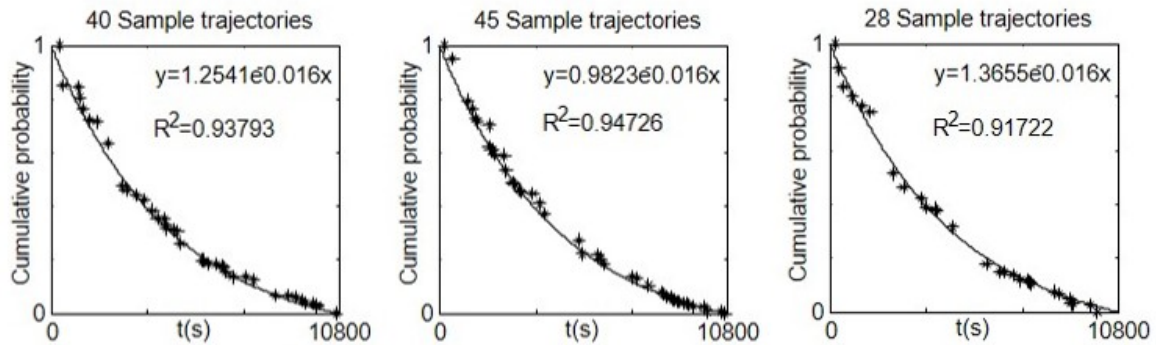


## Appendix A: Process for estimating $\lambda$

$\lambda$  was specified through the following steps. Firstly, three NTPs were defined for modeling potential movements across the study area. Tohid Square-Azar Bridge, Azadi Square-Shariati Square, and Takhti Square-Vafaei Square was considered as prism anchors for representing mobility across the central, southern, and northern parts of the study area, respectively. Secondly, a rout including sample trajectories was selected from each NTP. Thirdly, ordinary least square (OLS) method was used for calibrating  $\lambda$ . The results for three NTPs are displayed in Figure 1A. As the coefficient of determination ( $R^2$ ) was acceptable, 0.016 value was considered for transition rate and used in the model calculation process.



**Figure 1A:** Sample trajectories along routes from three selected NTPs

## Appendix B: Detailed outputs of accessibility to the markets in the first policy “market exclusion and area expansion”

ID	If ID1 is doubled			If ID2 is excluded			If ID3 is doubled			If ID4 is doubled		
	t = 45	t = 90	t = 135	t = 45	t = 90	t = 135	t = 45	t = 90	t = 135	t = 45	t = 90	t = 135
1	36.65724	57.32867	23.72459	18.32862	28.66434	11.8623	18.32862	28.66434	11.8623	9.164311	14.33217	5.931149
3	8.322179	18.27317	9.40388	8.322179	18.27317	9.40388	16.64436	36.54635	18.80776	4.16109	9.136587	4.70194
4	55.96146	93.09187	56.91685	55.96146	93.09187	56.91685	55.96146	93.09187	56.91685	27.98073	46.54593	28.45842
5	19.17471	28.92263	14.28007	19.17471	28.92263	14.28007	19.17471	28.92263	14.28007	9.587354	14.46131	7.140036
6	11.70418	17.66515	8.632752	11.70418	17.66515	8.632752	11.70418	17.66515	8.632752	5.85209	8.832576	4.316376
7	24.17333	45.73492	27.76805	24.17333	45.73492	27.76805	24.17333	45.73492	27.76805	12.08667	22.86746	13.88402
8	31.96044	51.91163	24.24788	31.96044	51.91163	24.24788	31.96044	51.91163	24.24788	15.98022	25.95582	12.12394
9	14.21597	20.74175	8.344916	14.21597	20.74175	8.344916	14.21597	20.74175	8.344916	7.107987	10.37088	4.172458
10	13.81484	23.04748	11.30231	13.81484	23.04748	11.30231	13.81484	23.04748	11.30231	6.90742	11.52374	5.651156
11	12.05859	18.45316	9.970842	12.05859	18.45316	9.970842	12.05859	18.45316	9.970842	6.029295	9.226581	4.985421
12	28.74228	47.42695	30.59998	28.74228	47.42695	30.59998	28.74228	47.42695	30.59998	14.37114	23.71347	15.29999
Sum	256.7852	422.5974	225.1921	238.4566	393.9331	213.3298	246.7788	412.2062	222.7337	119.2283	196.9665	106.6649
ID	If ID5 is doubled			If ID6 is doubled			If ID7 is doubled			If ID8 is doubled		
	t = 45	t = 90	t = 135	t = 45	t = 90	t = 135	t = 45	t = 90	t = 135	t = 45	t = 90	t = 135
1	18.32862	28.66434	11.8623	18.32862	28.66434	11.8623	9.164311	53.07847	21.96571	28.12135	43.97929	18.20016
3	8.322179	18.27317	9.40388	8.322179	18.27317	9.40388	4.16109	38.83689	17.4134	12.7686	28.03627	14.42824
4	55.96146	93.09187	56.91685	55.96146	93.09187	56.91685	27.98073	172.3805	105.3943	85.86088	142.8295	87.32672
5	38.34941	57.84525	28.56014	19.17471	28.92263	14.28007	9.587354	53.55675	26.44277	29.41948	44.37558	21.90971
6	11.70418	17.66515	8.632752	23.40836	35.3303	17.2655	5.85209	32.711	15.98548	17.95756	27.10339	13.24511
7	24.17333	45.73492	27.76805	24.17333	45.73492	27.76805	12.08667	84.6885	51.41878	37.0888	70.17045	42.60412
8	31.96044	51.91163	24.24788	31.96044	51.91163	24.24788	15.98022	96.12607	44.9004	49.03645	79.64729	37.20318
9	14.21597	20.74175	8.344916	14.21597	20.74175	8.344916	7.107987	38.40802	15.45249	21.81137	31.82378	12.80349
10	13.81484	23.04748	11.30231	13.81484	23.04748	11.30231	6.90742	42.6776	20.92877	21.19591	35.36143	17.34098
11	12.05859	18.45316	9.970842	12.05859	18.45316	9.970842	6.029295	34.17018	18.46326	18.50132	28.31243	15.29812
12	28.74228	47.42695	30.59998	28.74228	47.42695	30.59998	14.37114	87.82166	56.66275	44.09888	72.7665	46.94912
Sum	257.6313	422.8557	227.6099	250.1608	411.5982	221.9626	119.2283	729.4557	395.0282	365.8606	604.4059	327.3089
ID	If ID9 is doubled			If ID10 is doubled			If ID11 is doubled			If ID12 is doubled		
	t = 45	t = 90	t = 135	t = 45	t = 90	t = 135	t = 45	t = 90	t = 135	t = 45	t = 90	t = 135
1	18.32862	28.66434	11.8623	18.32862	28.66434	11.8623	18.32862	28.66434	11.8623	18.32862	28.66434	11.8623
3	8.322179	18.27317	9.40388	8.322179	18.27317	9.40388	8.322179	18.27317	9.40388	8.322179	18.27317	9.40388
4	55.96146	93.09187	56.91685	55.96146	93.09187	56.91685	55.96146	93.09187	56.91685	55.96146	93.09187	56.91685
5	19.17471	28.92263	14.28007	19.17471	28.92263	14.28007	19.17471	28.92263	14.28007	19.17471	28.92263	14.28007
6	11.70418	17.66515	8.632752	11.70418	17.66515	8.632752	11.70418	17.66515	8.632752	11.70418	17.66515	8.632752
7	24.17333	45.73492	27.76805	24.17333	45.73492	27.76805	24.17333	45.73492	27.76805	24.17333	45.73492	27.76805
8	31.96044	51.91163	24.24788	31.96044	51.91163	24.24788	31.96044	51.91163	24.24788	31.96044	51.91163	24.24788
9	28.43195	41.4835	16.68983	14.21597	20.74175	8.344916	14.21597	20.74175	8.344916	14.21597	20.74175	8.344916
10	13.81484	23.04748	11.30231	27.62968	46.09497	22.60462	13.81484	23.04748	11.30231	13.81484	23.04748	11.30231
11	12.05859	18.45316	9.970842	12.05859	18.45316	9.970842	24.11718	36.90632	19.94168	12.05859	18.45316	9.970842
12	28.74228	47.42695	30.59998	28.74228	47.42695	30.59998	28.74228	47.42695	30.59998	57.48456	94.85389	61.19996
Sum	252.6726	414.6748	221.6747	252.2714	416.9805	224.6321	250.5152	412.3862	223.3007	267.1989	441.36	243.9298

Figure 1B: Results of accessibility computation for the first policy