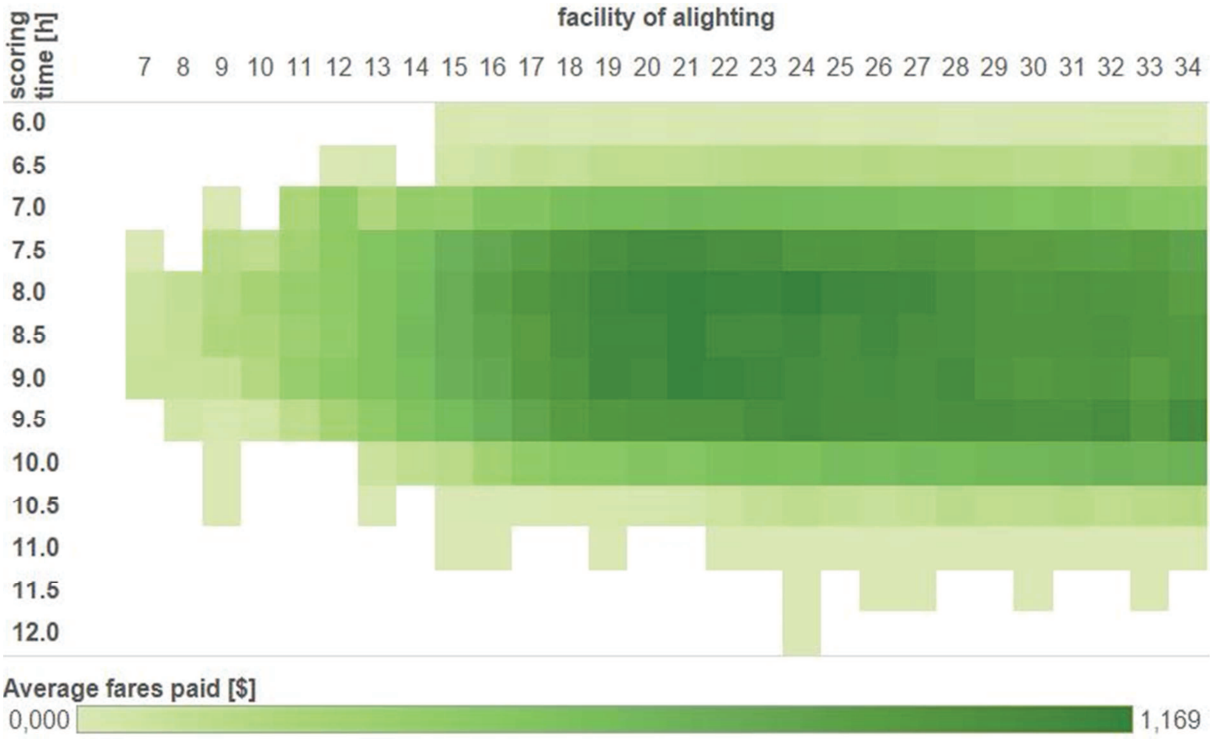

Evaluation of Dynamic Public Transport Pricing with MATSim

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Annexe

Master Thesis
Civil Engineering

Institut für Verkehrsplanung und Transportsyste
Institute for Transport Planning and Systems

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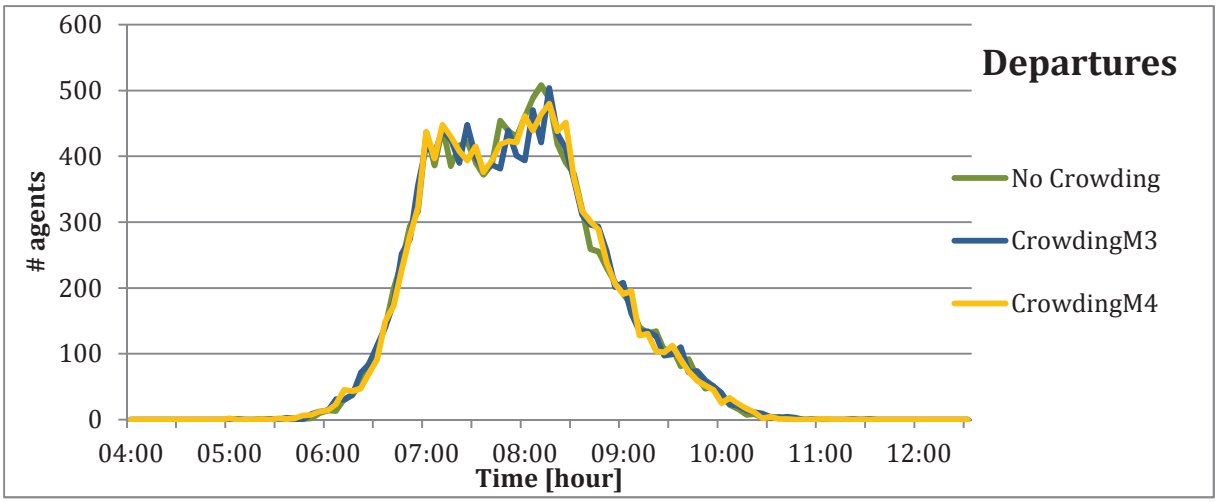
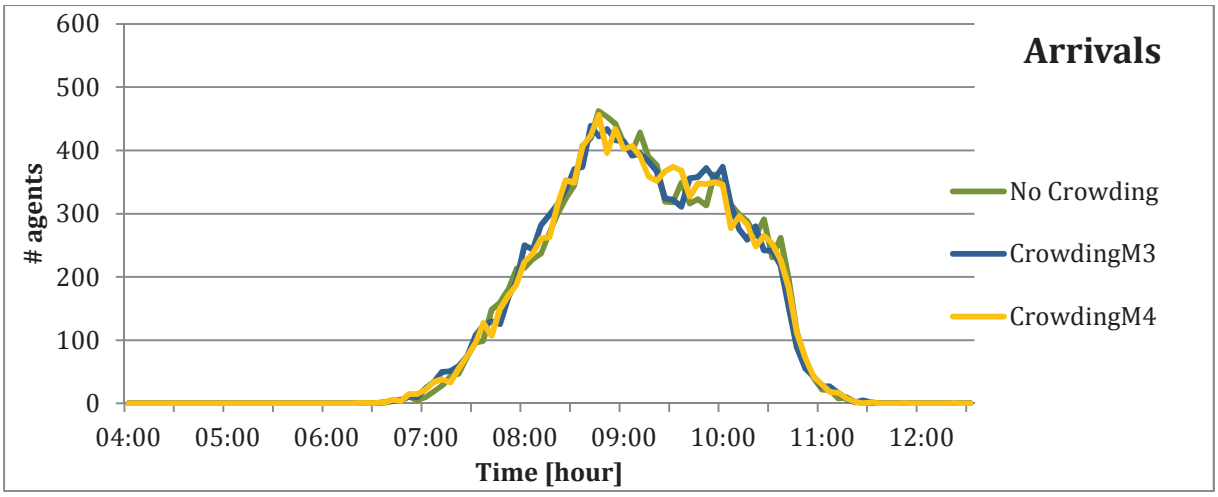
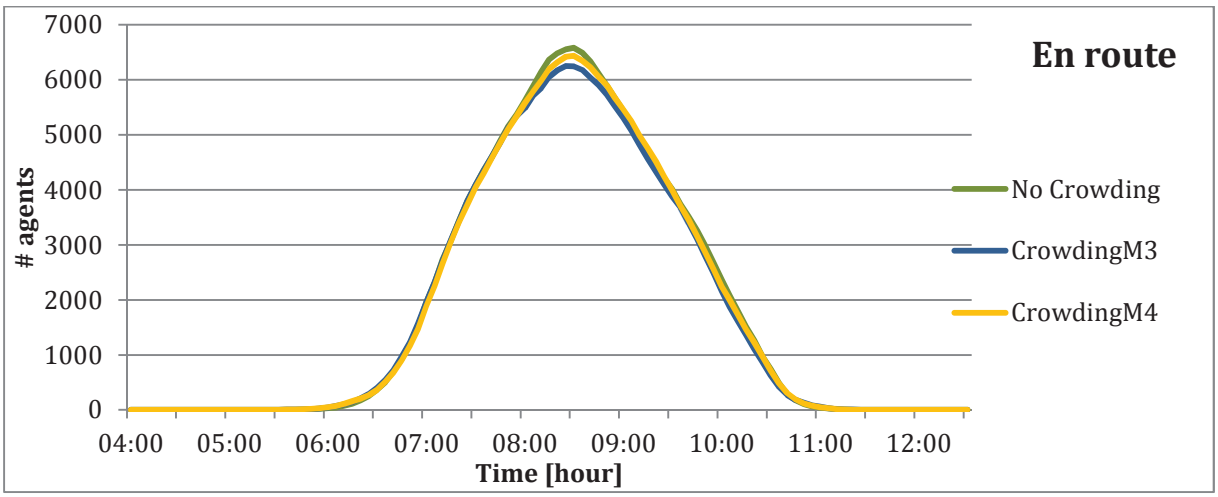
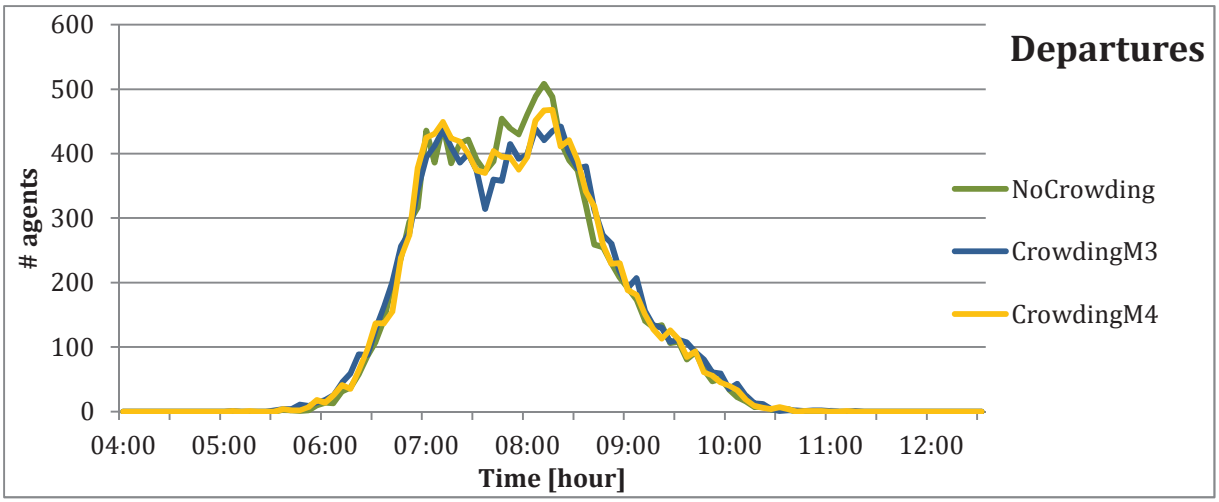
A 1 Trip distribution – OnlyPT – No Externalities

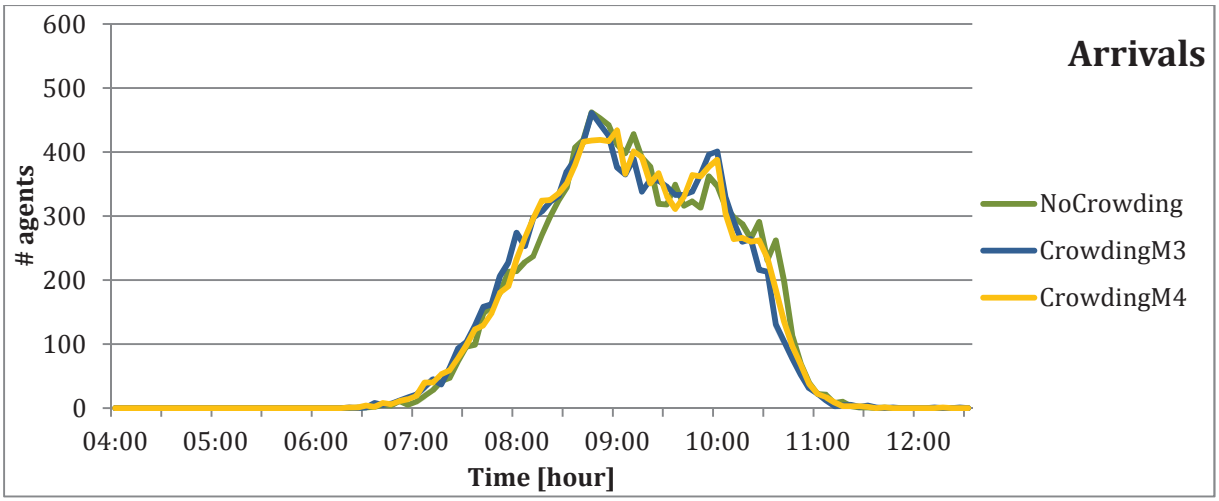


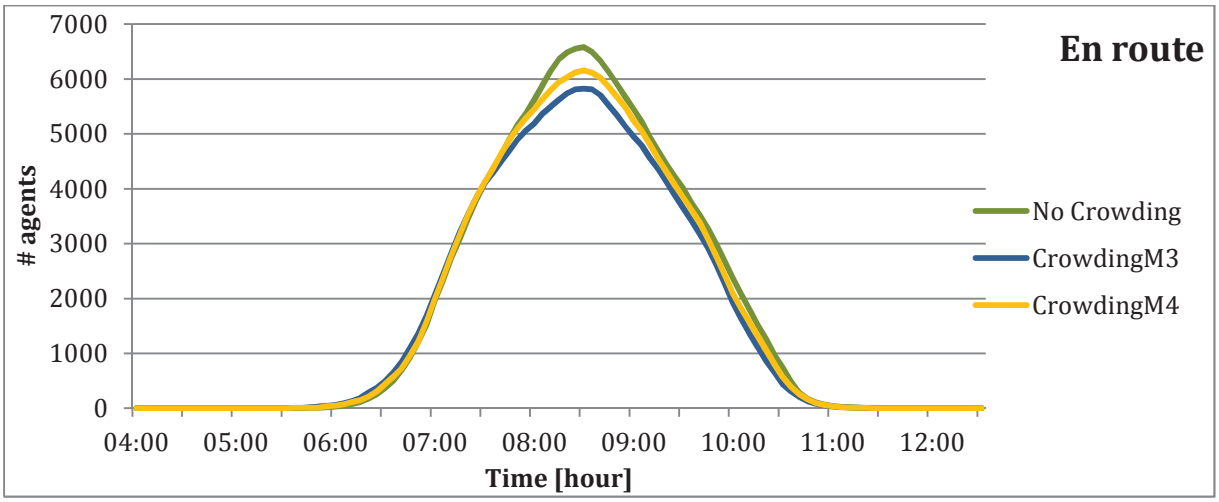




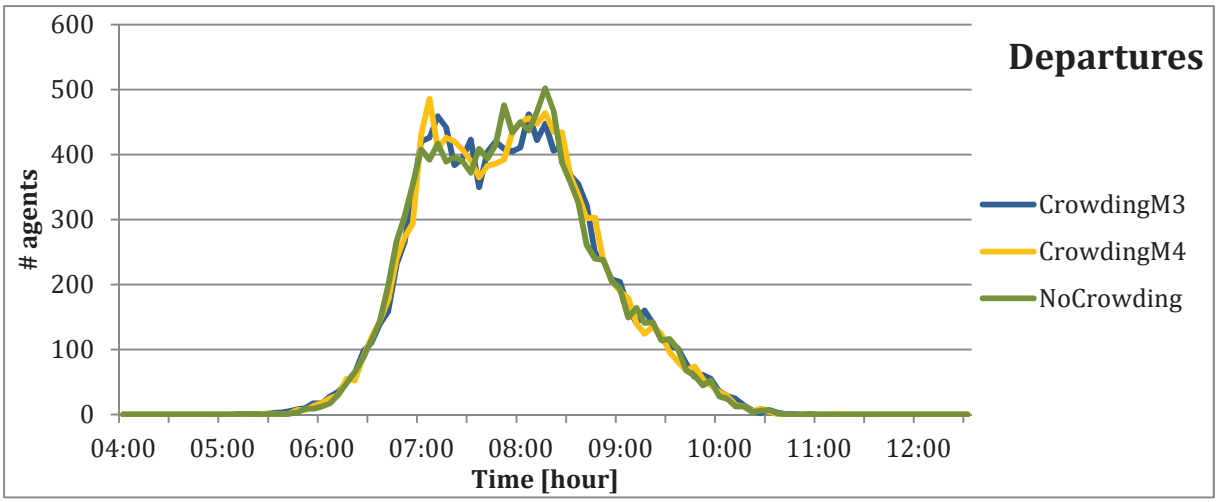
A 2 Trip distribution – Only PT – Crowding Externalities

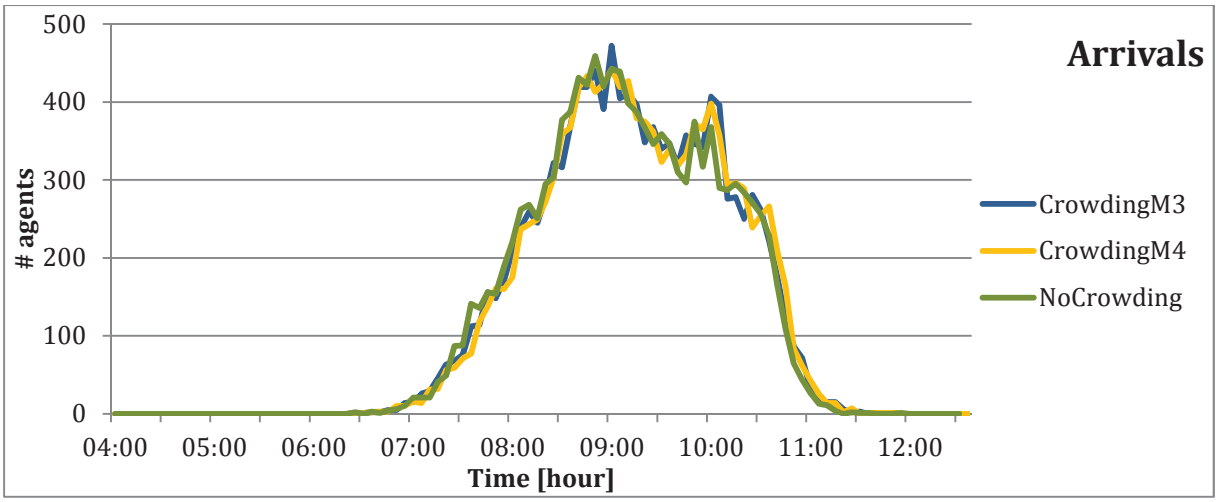


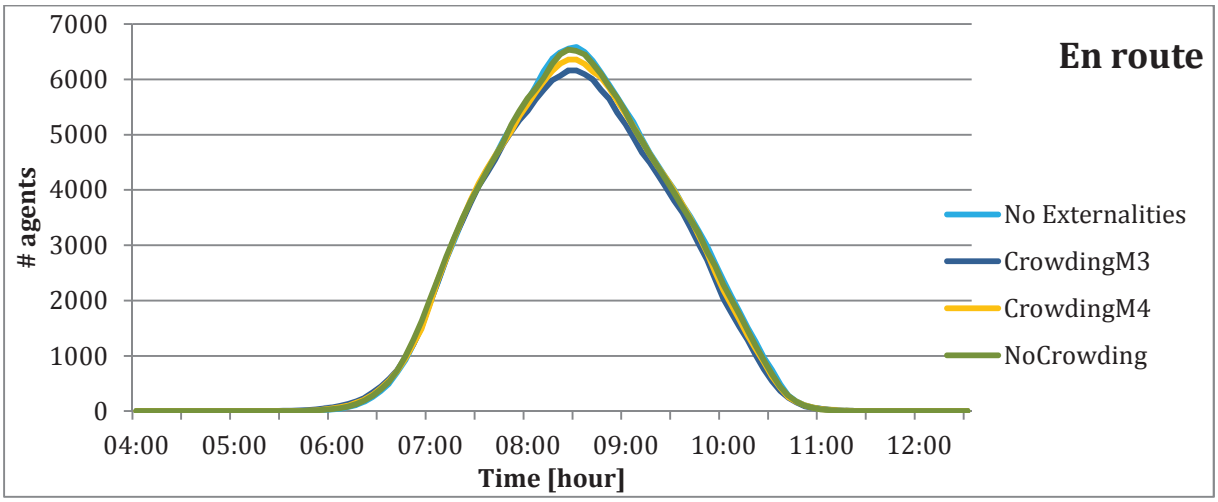




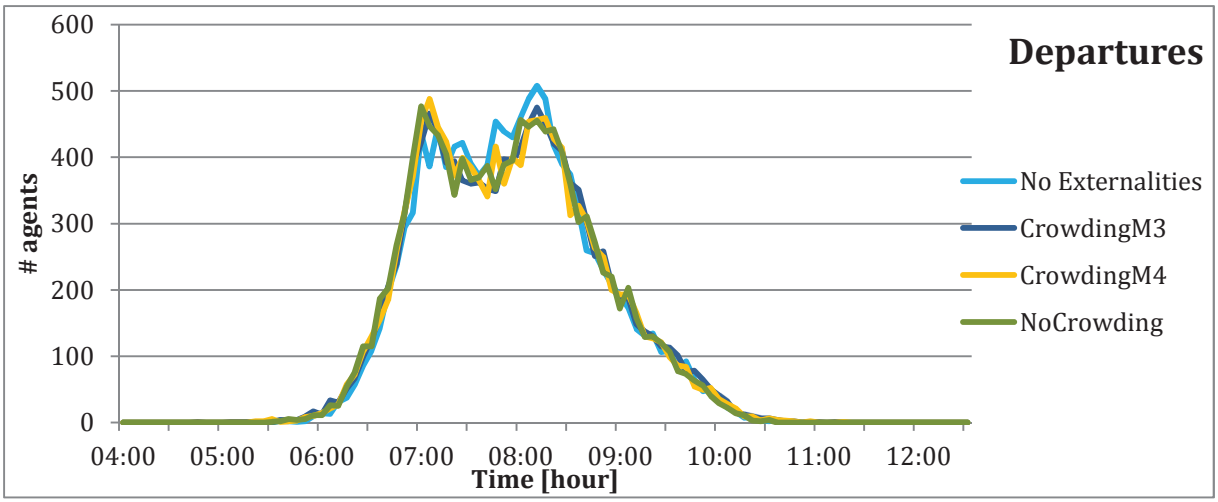
A 3 Trip distribution – OnlyPT – In Vehicle Time Delay Ext.

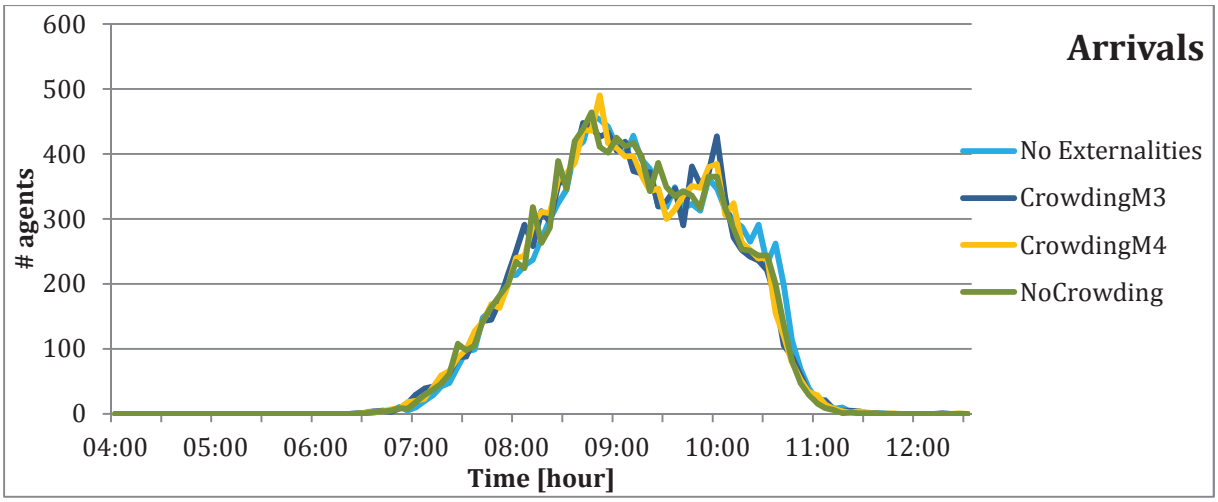


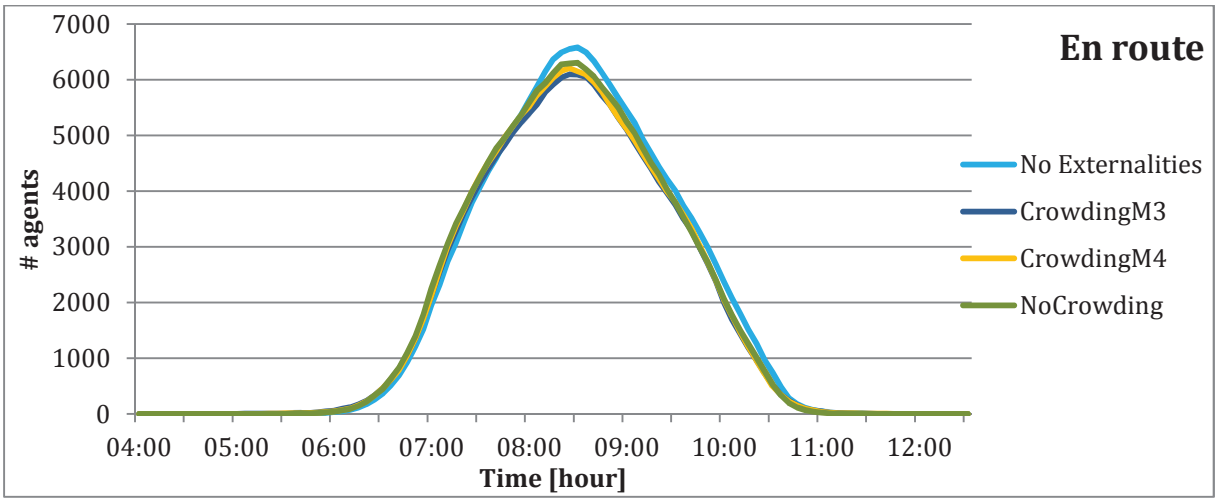




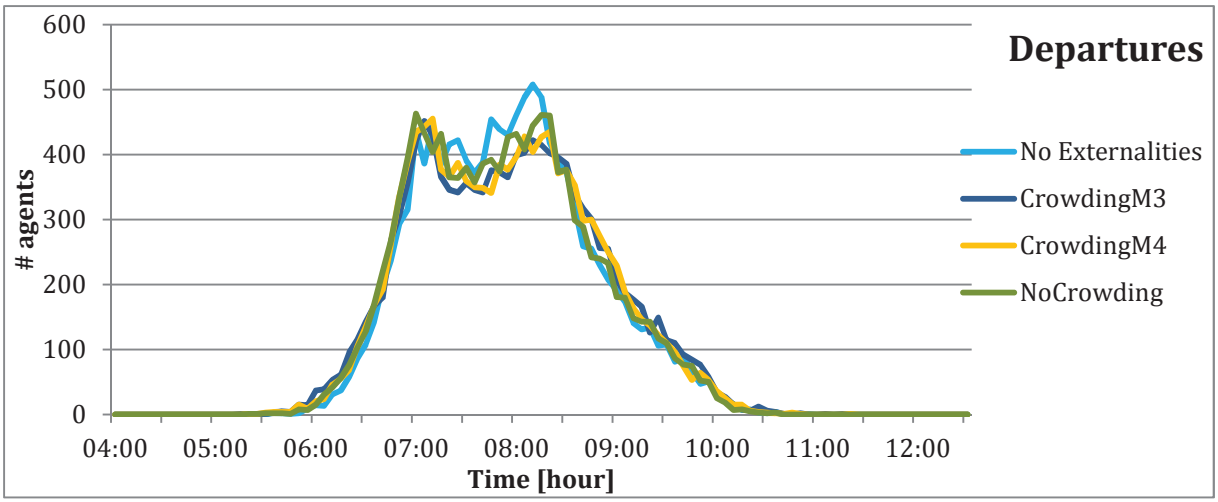
A 4 Trip distribution – Only PT – Capacity Constraint Ext.

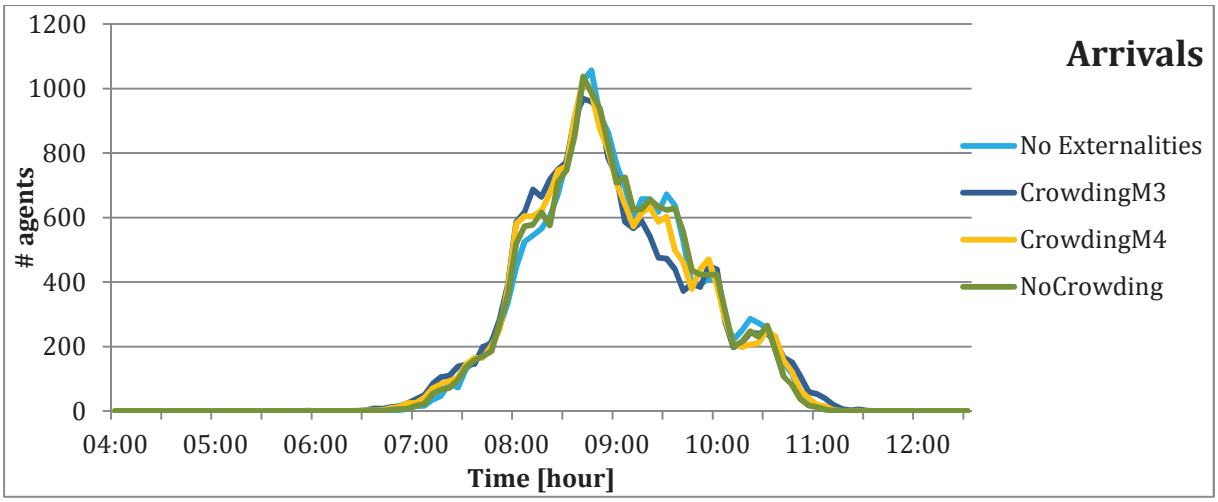


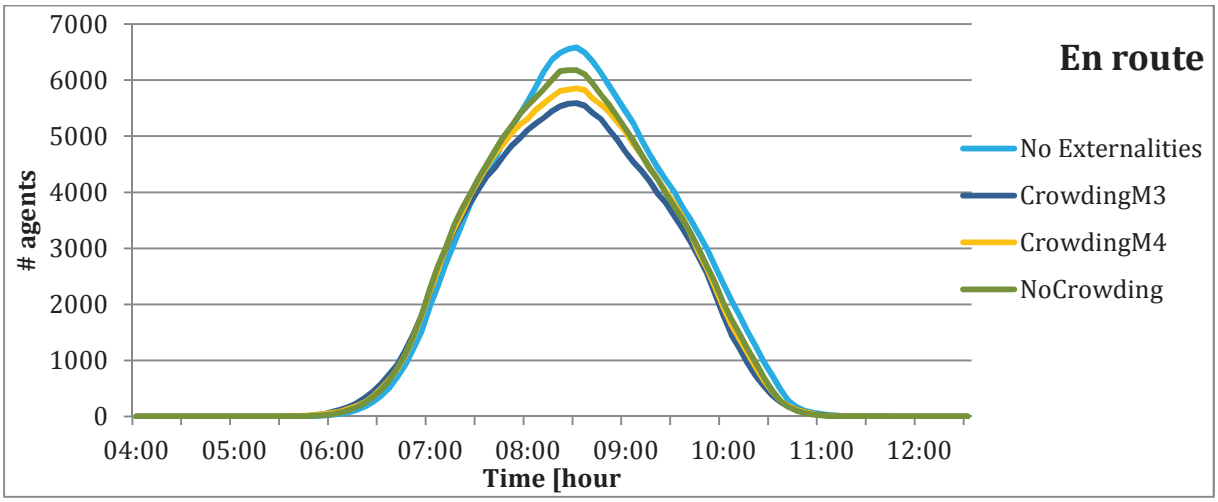




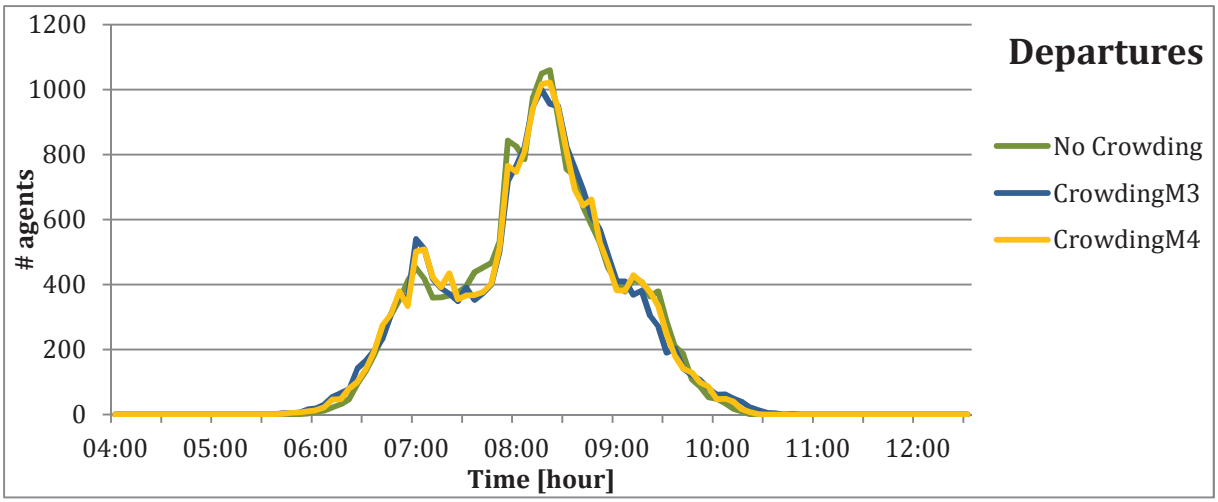
A 5 Trip distribution – Only PT – All Externalities

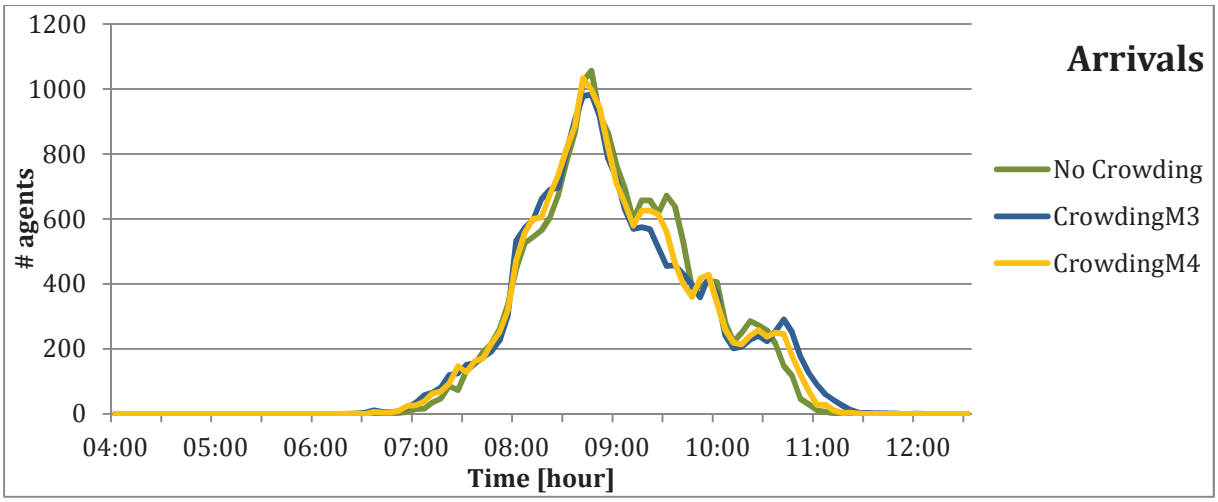


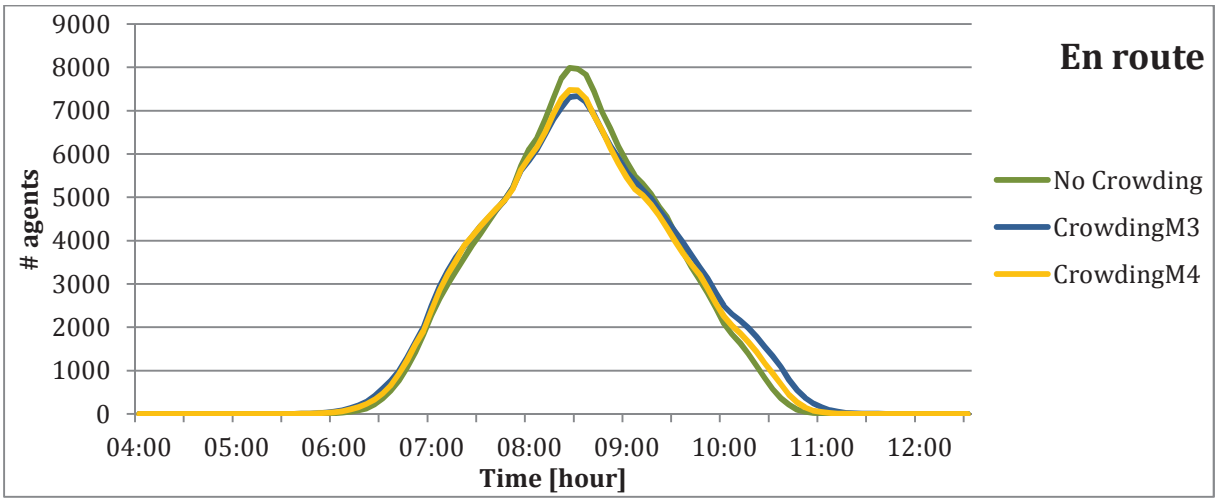




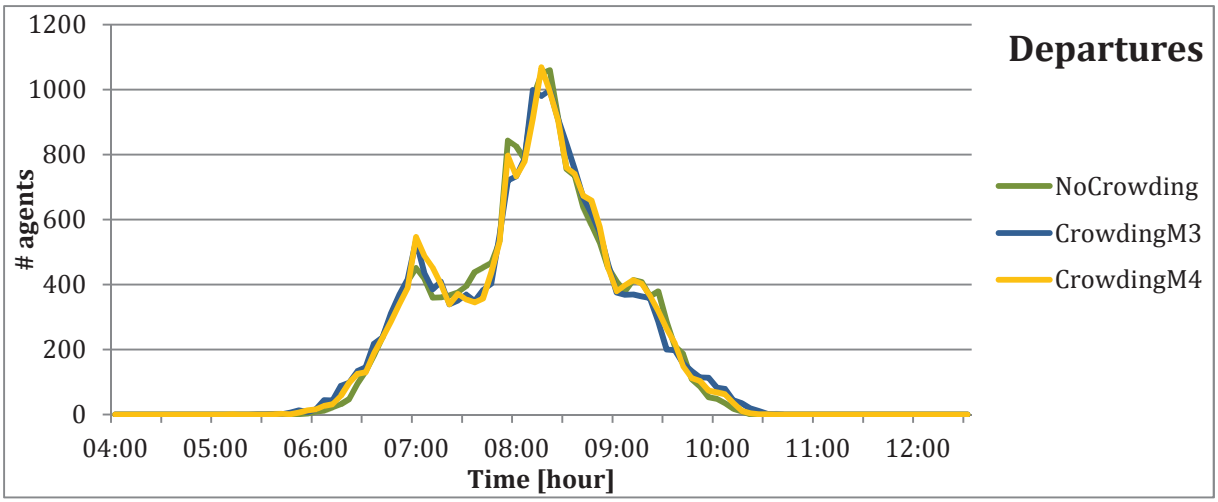
A 6 Trip distribution – With Car – No Externalities

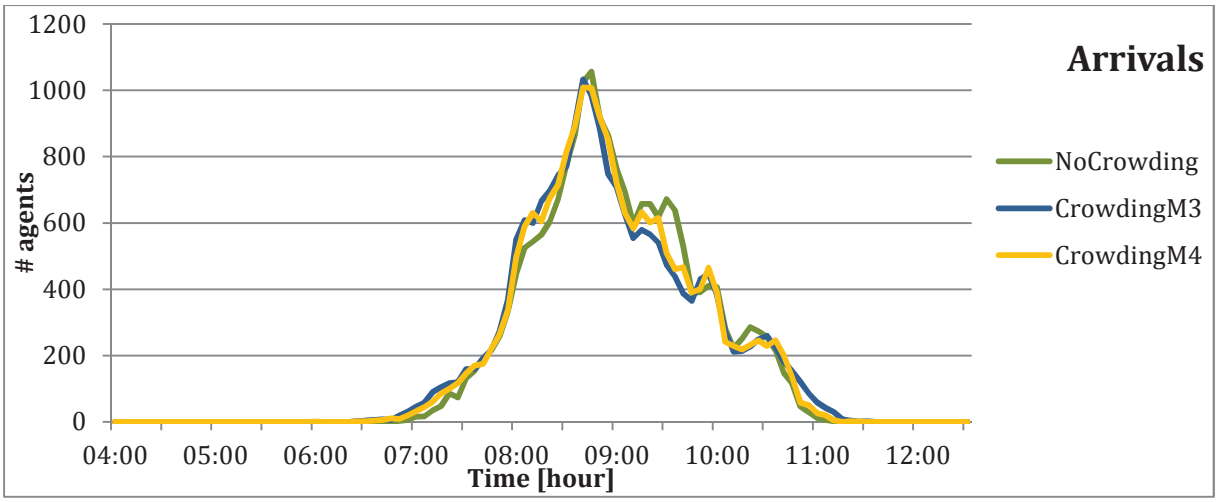


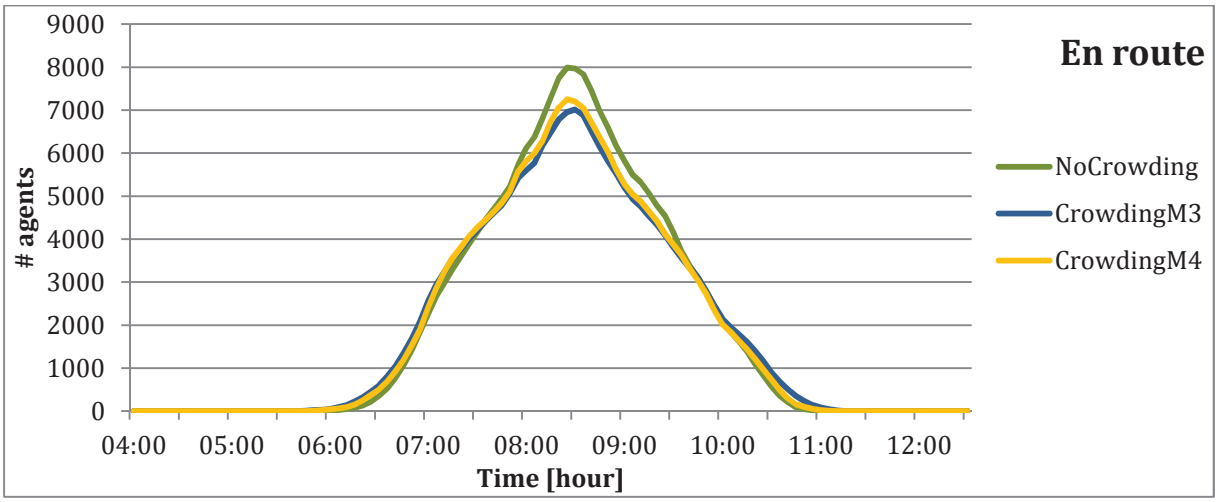




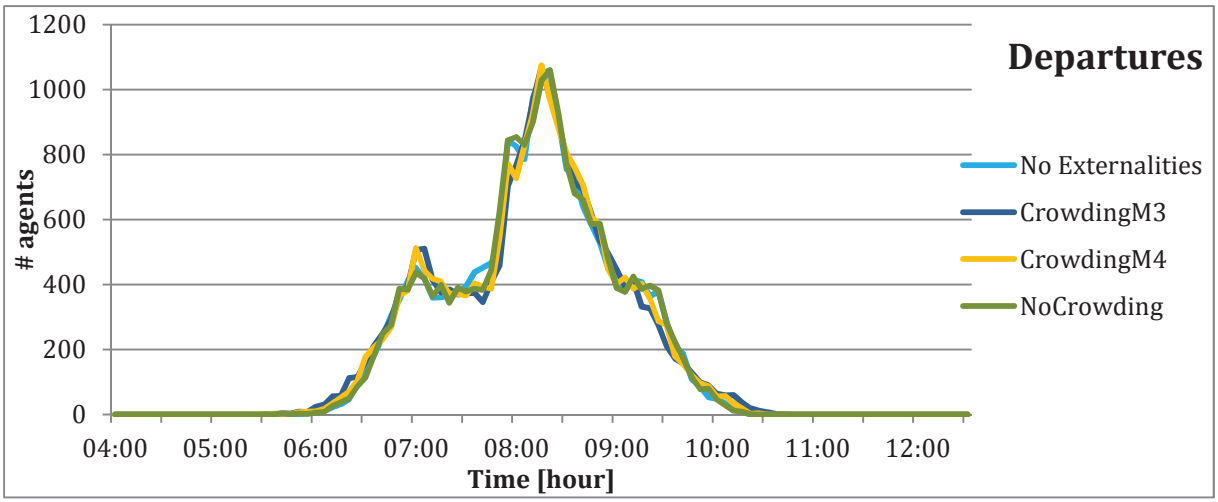
A 7 Trip distribution – With Car – Crowding Externalities

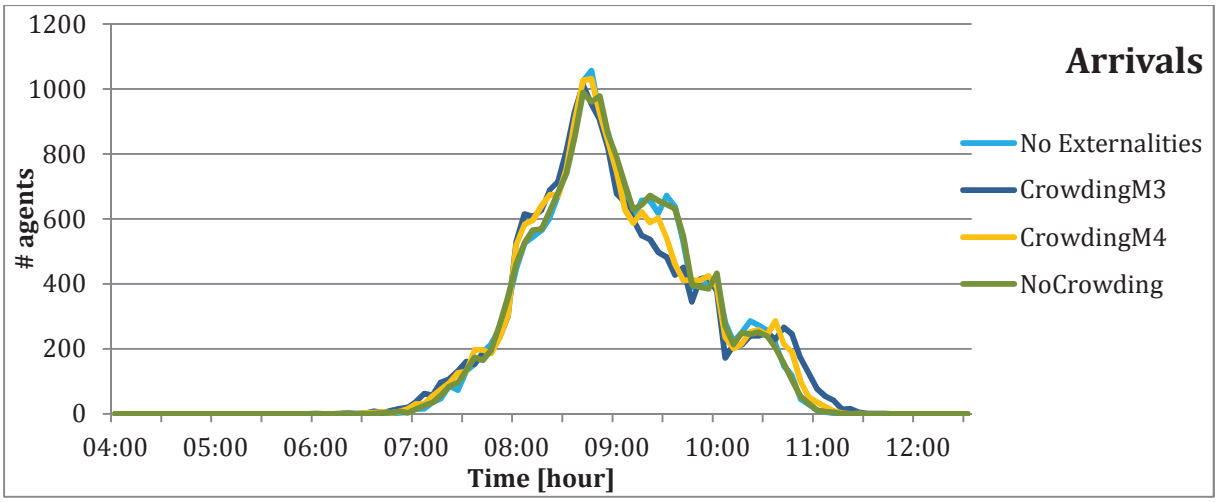


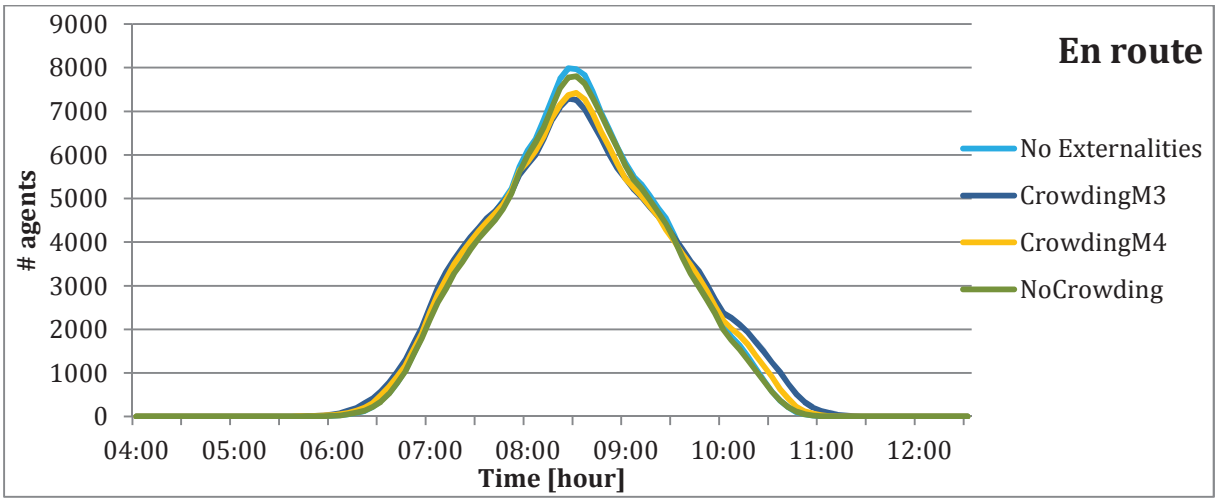




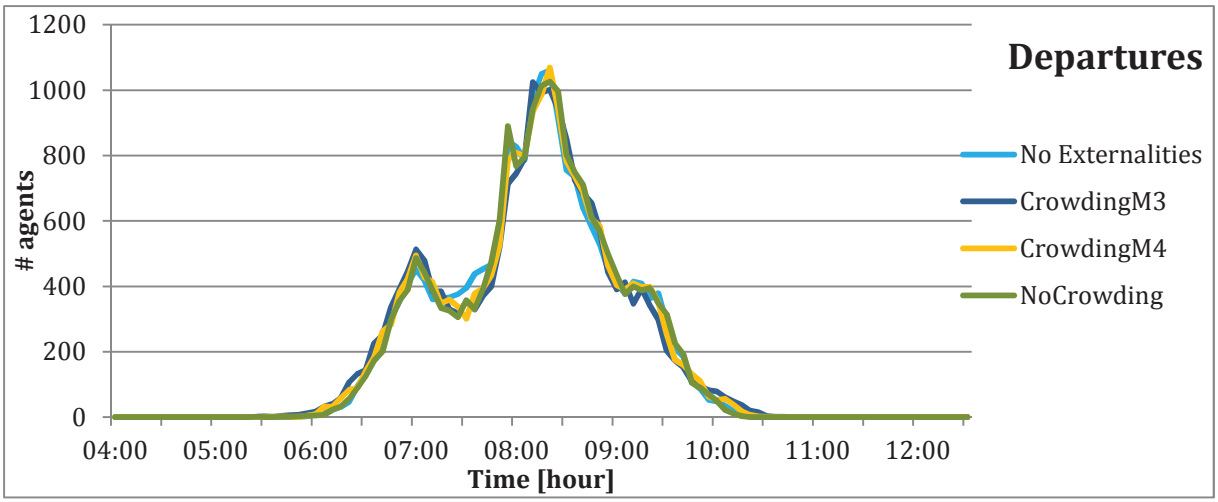
A 8 Trip distribution – WithCar – In VehicleTime Delay Ext.

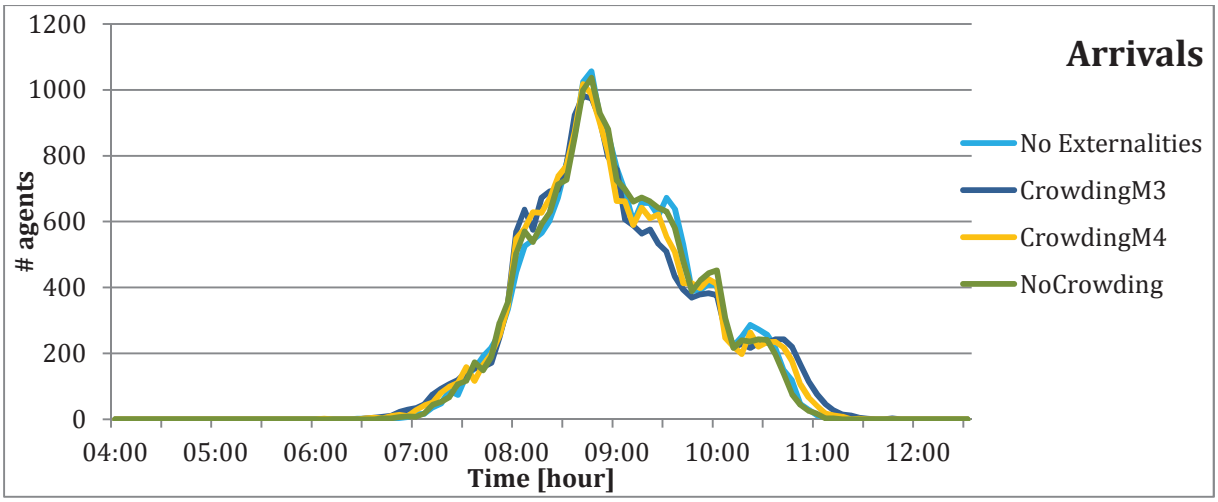


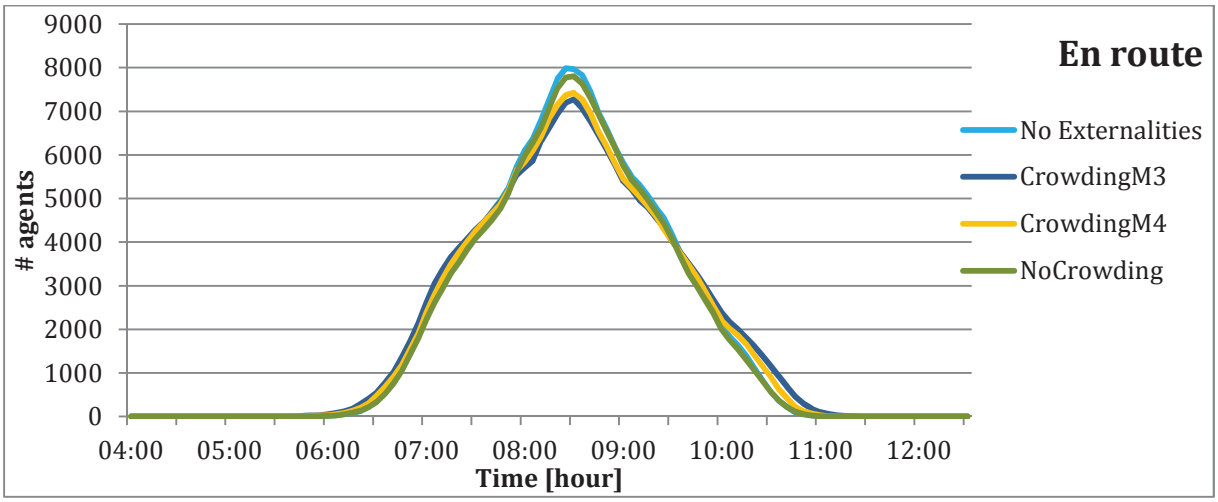




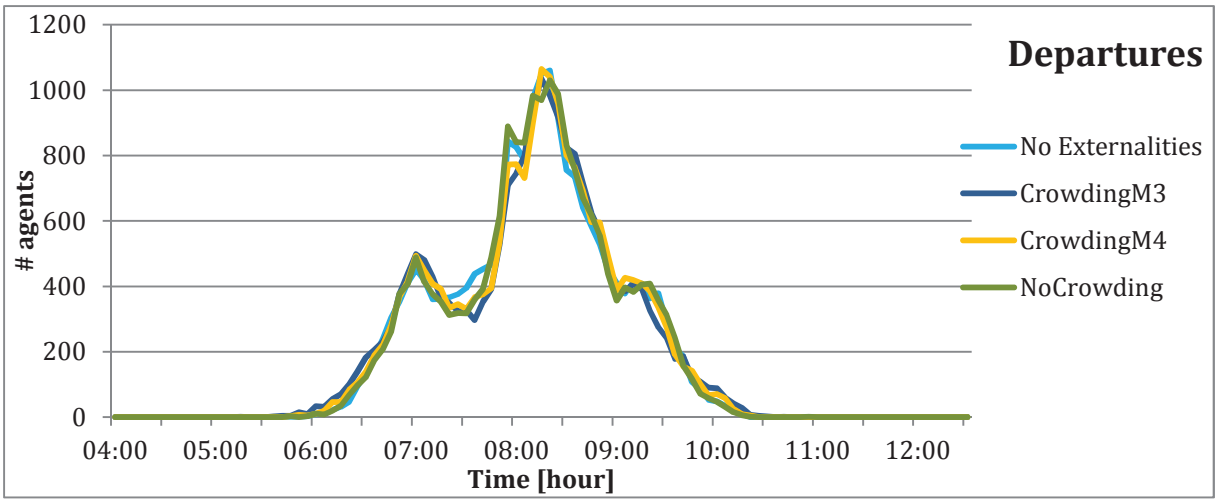
A 9 Trip distribution – WithCar – Capacity Constraint Ext.

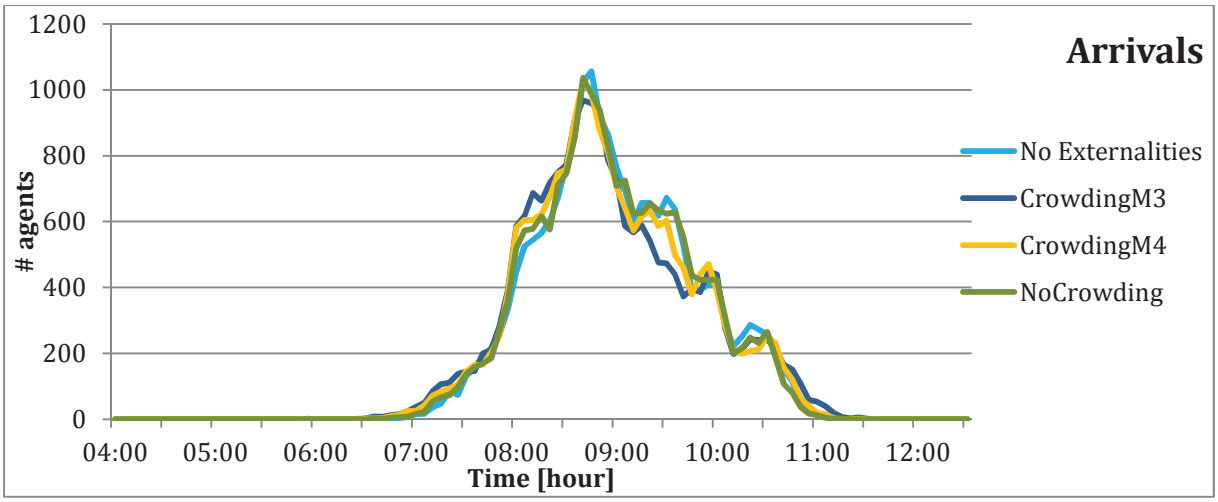


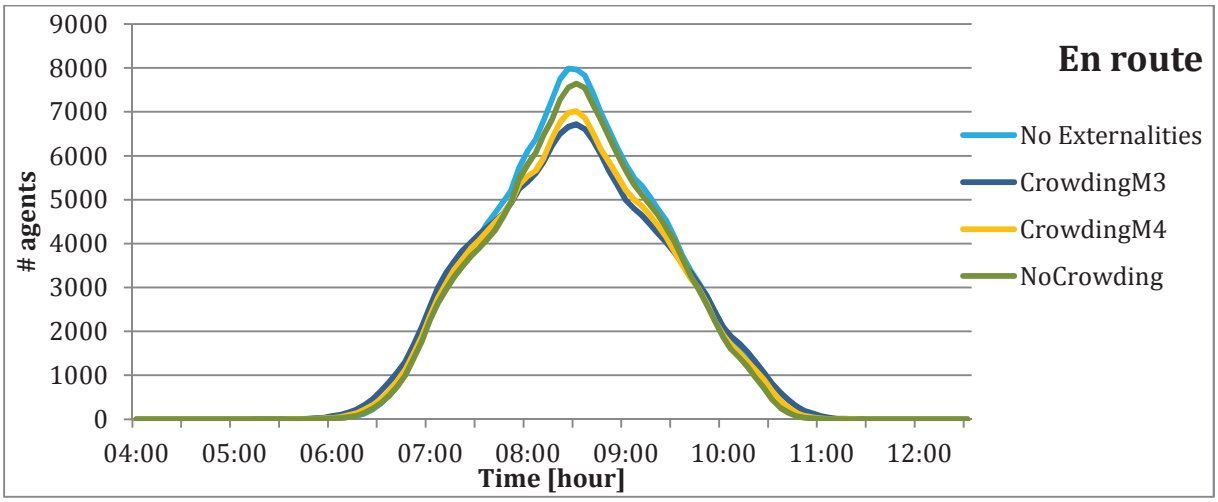




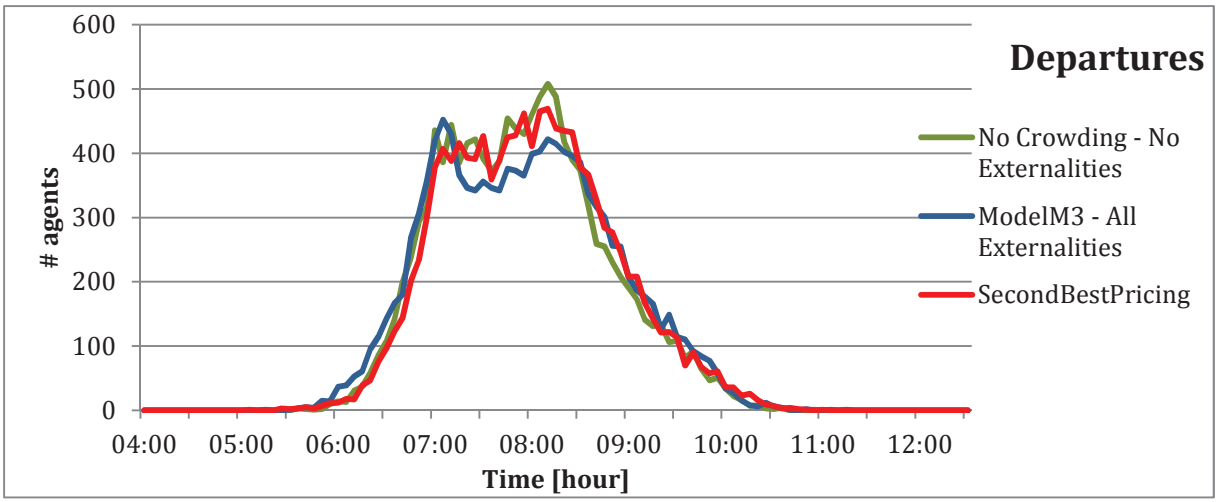
A 10 Trip distribution – WithCar – All Externalities

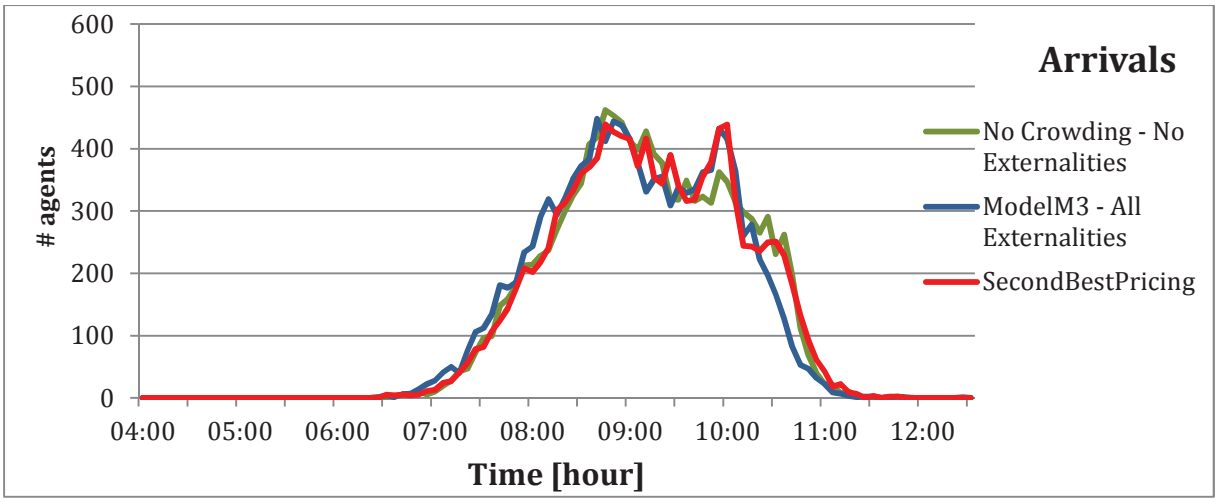


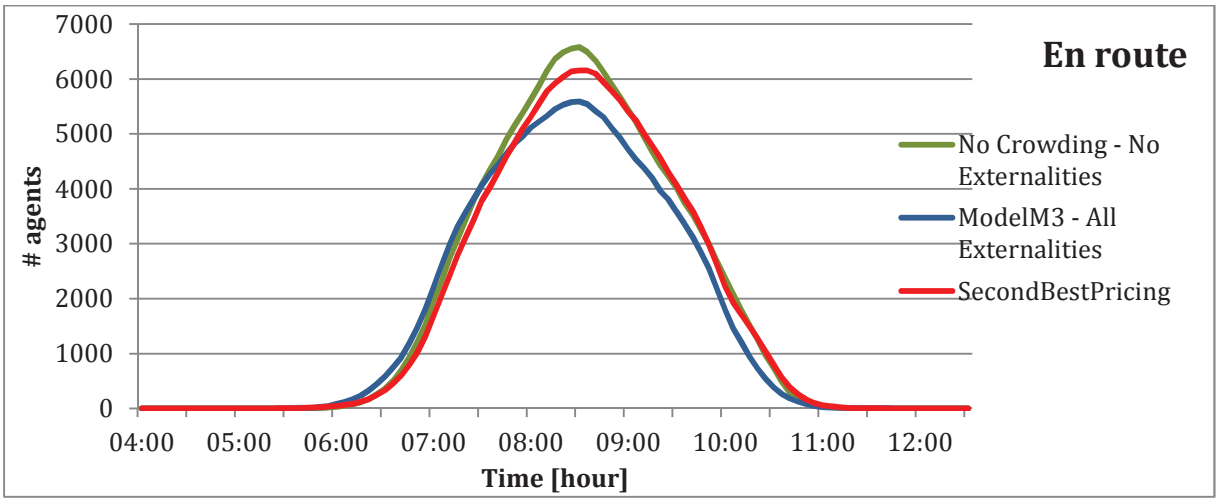




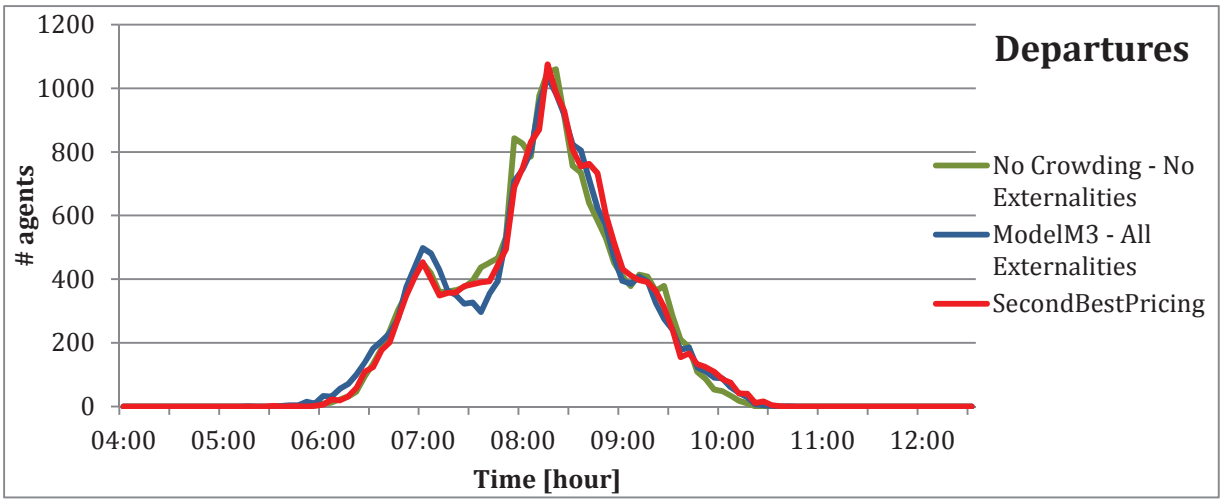
A 11 Trip distribution – OnlyPT – Second-Best Pricing

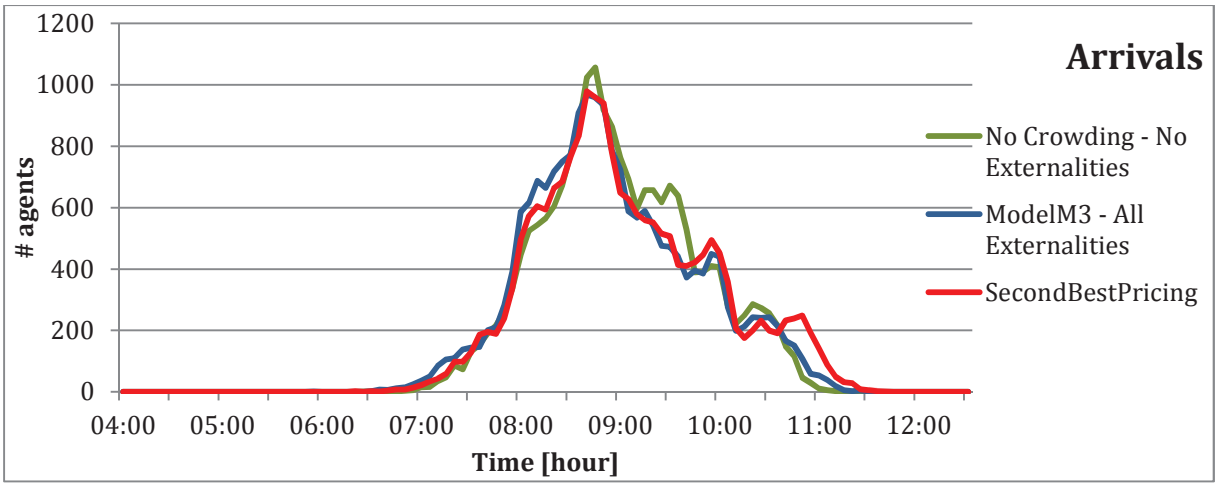


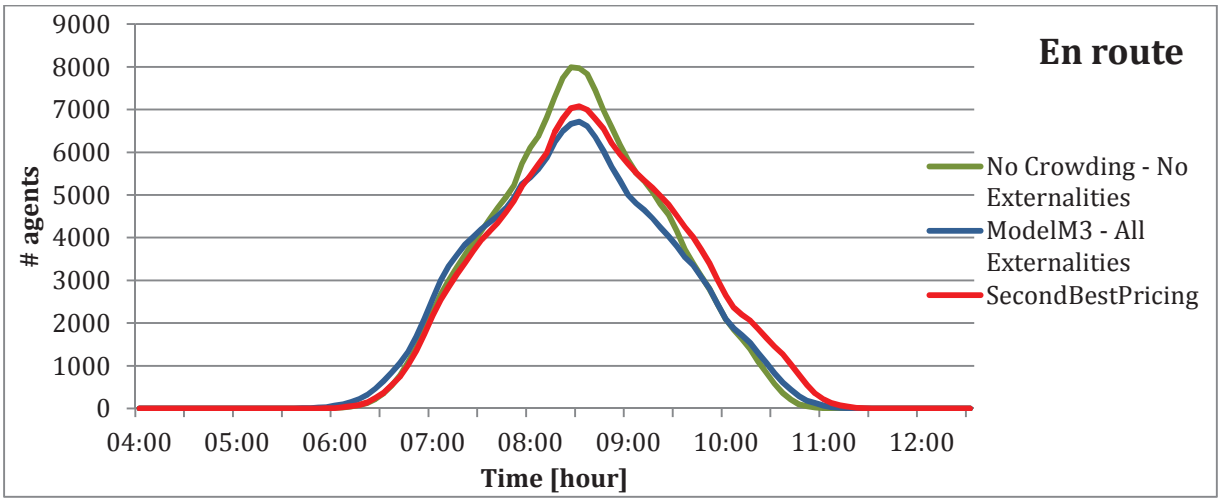




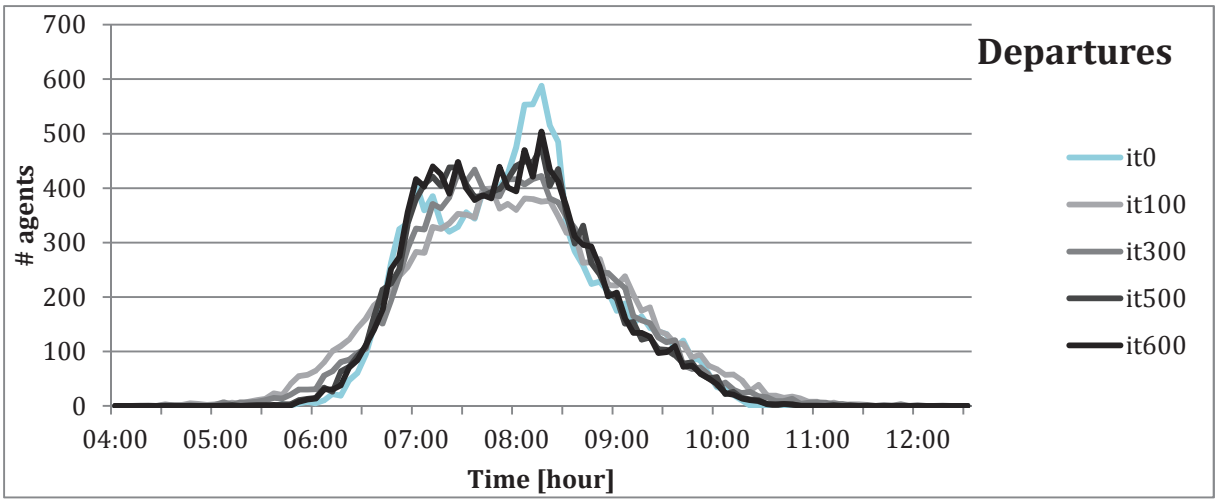
A 12 Trip distribution – WithCar – Second-Best Pricing

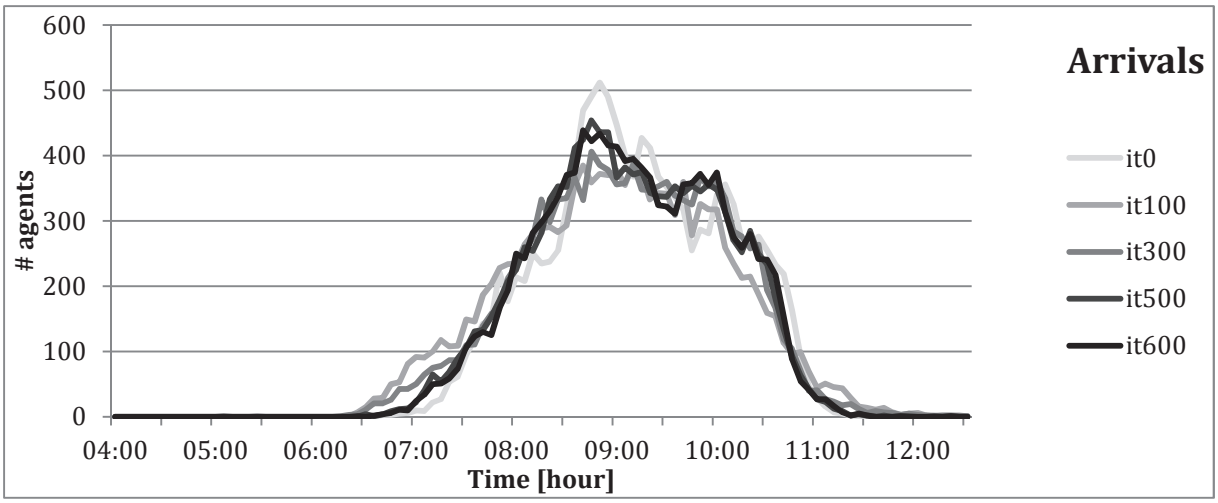


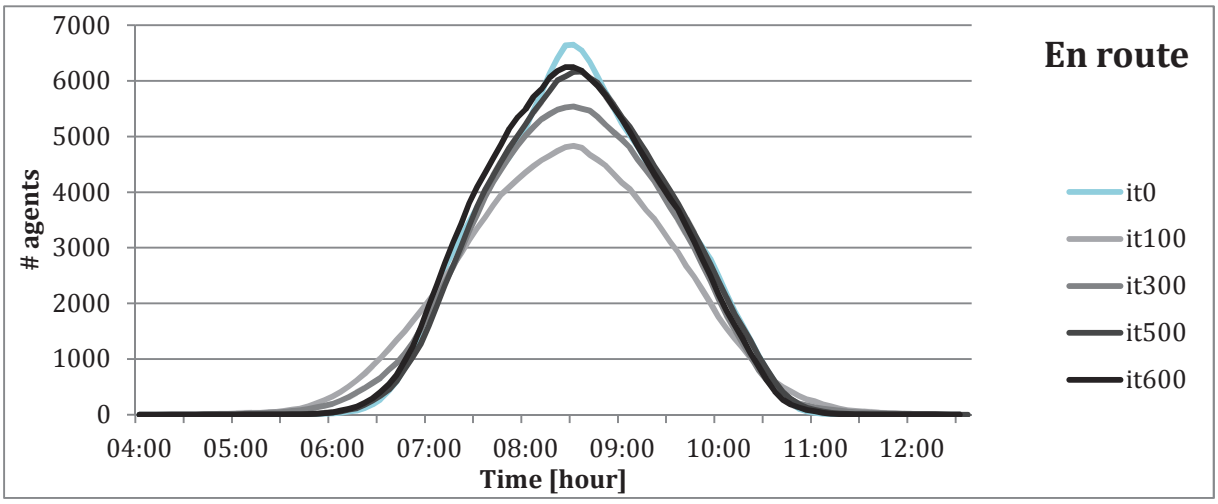




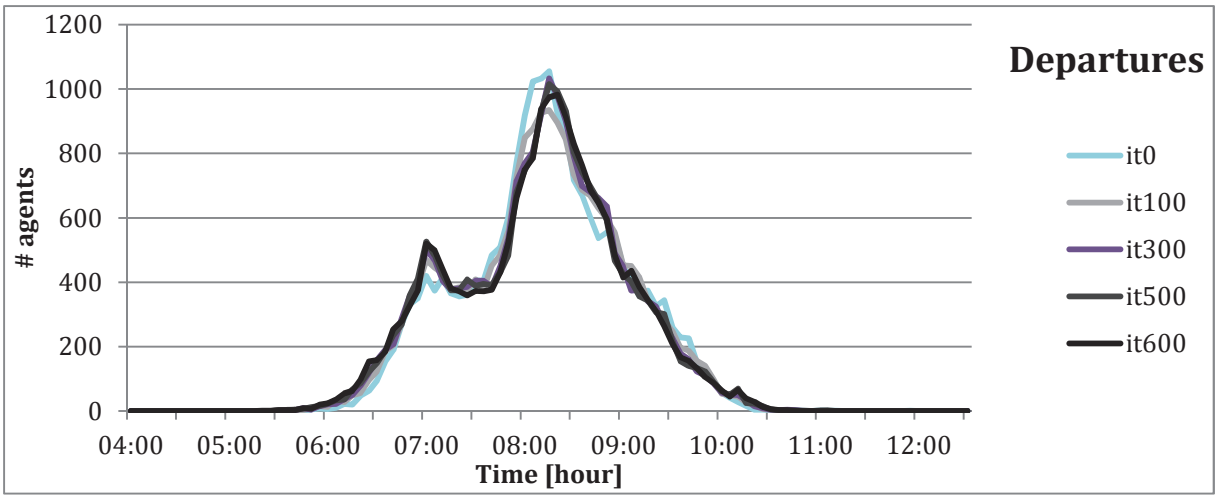
A 13 Trip distribution – OnlyPT – Behavior along iterations

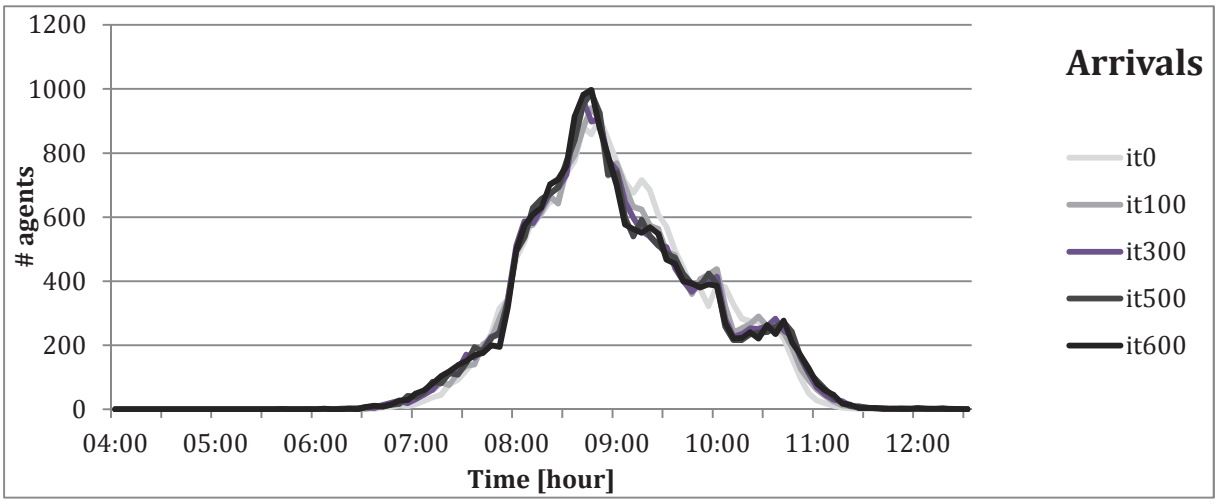


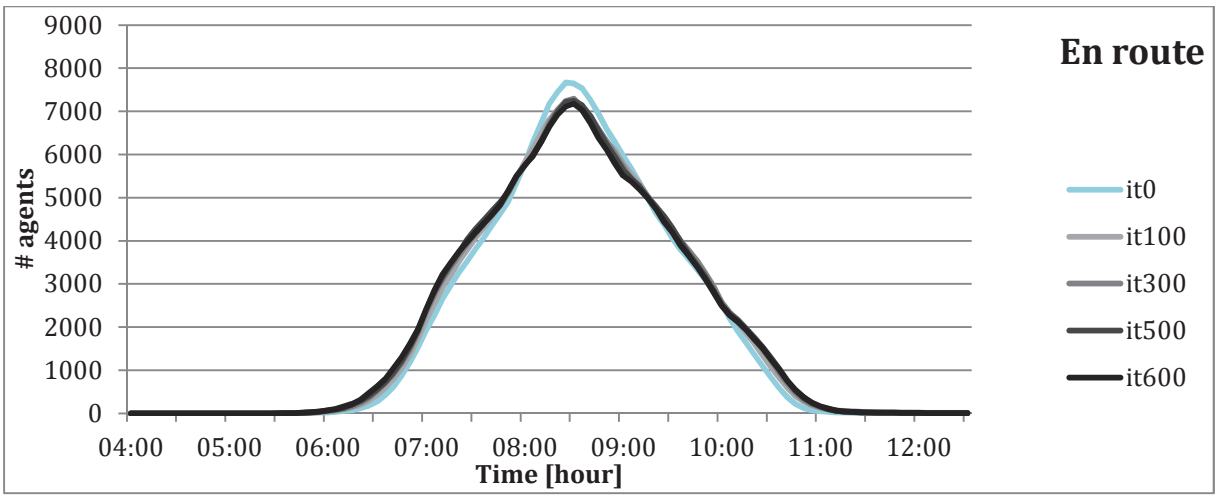




A 14 Trip distribution – With Car – Behavior along iterations







A 15 Mode repartition – With Car

		No Crowding			Model M3			Model M4		
		PT	Car	Walk	PT	Car	Walk	PT	Car	Walk
original demand	[# agents]	11214	7365	1421	11214	7365	1421	11214	7365	1421
	[%]	56,07	36,825	7,105	56,07	36,825	7,105	56,07	36,825	7,105
No externalities	[# agents]	11250	7364	1386	11972	6887	1141	11566	7241	1193
	[%]	56,25	36,82	6,93	59,86	34,435	5,705	57,83	36,205	5,965
Crowding externalities	[# agents]				11728	7121	1151	11434	7354	1212
	[%]				58,64	35,605	5,755	57,17	36,77	6,06
In Vehicle Time Delay ext.	[# agents]	11177	7441	1382	11931	6922	1147	11531	7283	1186
	[%]	55,885	37,205	6,91	59,655	34,61	5,735	57,655	36,415	5,93
Capacity Constraint ext.	[# agents]	11175	7432	1393	11941	6914	1145	11533	7280	1187
	[%]	55,875	37,16	6,965	59,705	34,57	5,725	57,665	36,4	5,935
All externalities	[# agents]	11122	7482	1396	11677	7168	1155	11333	7483	1184
	[%]	55,61	37,41	6,98	58,385	35,84	5,775	56,665	37,415	5,92
Second-Best pricing	[# agents]				11923	6933	1144			
	[%]				59,615	34,665	5,72			

A 16 Second-Best Pricing - Parameters

Polynomial Functions : $A*X^2 + B*X + C$, with X = trip duration

Crowding	A	B	C	R^2	Std error
04:00 – 06:30	0	0	0	-	-
06:30 – 07:30	-2.256e-007	0.0018564	-0.0410816	0.812	0.255
07:30 – 08:30	-2.684e-007	0.0022329	-0.207564	0.950	0.183
08:30 – 09:30	-2.998e-007	0.0022514	-0.232516	0.929	0.199
09:30 – 10:30	-9.683e-008	0.0016766	-0.0853464	0.830	0.252
10:30 – end	0	0	0	-	-

In Vehicle Time Delay	A	B	C	R^2	Std error
04:00 – 06:30	0	0	0	-	-
06:30 – 07:30	-1.439e-008	-9.25e-005	0,254729	0,486	0,041
07:30 – 08:30	-6.569e-008	6.065e-005	0,183248	0,541	0,036
08:30 – 09:30	-4.725e-008	1.192e-005	0,205789	0,558	0,035
09:30 – 10:30	1.789e-008	-0,0001241	0,228548	0,217	0,054
10:30 – end	0	0	0	-	-

Capacity Constraint	A	B	C	R^2	Std error
All, 04:00 – 06:30	0	0	0	-	-
Stations 0 - 12	0	0	0	-	-
Stations 13 - 18	-8.061e-007	0.0013432	0.0684468	-	-
Station 13 – 18, 09:30 – 10:30	0	0	0	-	-
Stations 19 - 34	-4.165e-007	0.0014985	-0.449811	0.253	0.42
Stations 19-34, 09:30 – 10:30	1.828e-007	-4.777e-005	0.0475427	0.197	0.236
All, 10:30 – end	0	0	0	-	-