Supporting Materials to

Spatio-temporal analysis of urban mobility using aggregate mobile phone derived presence and demographic data. A case study in the city of Rome, Italy.

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Table S1. Amount of units and employees in the Lazio region by economic macro-categories according to Census 2011.

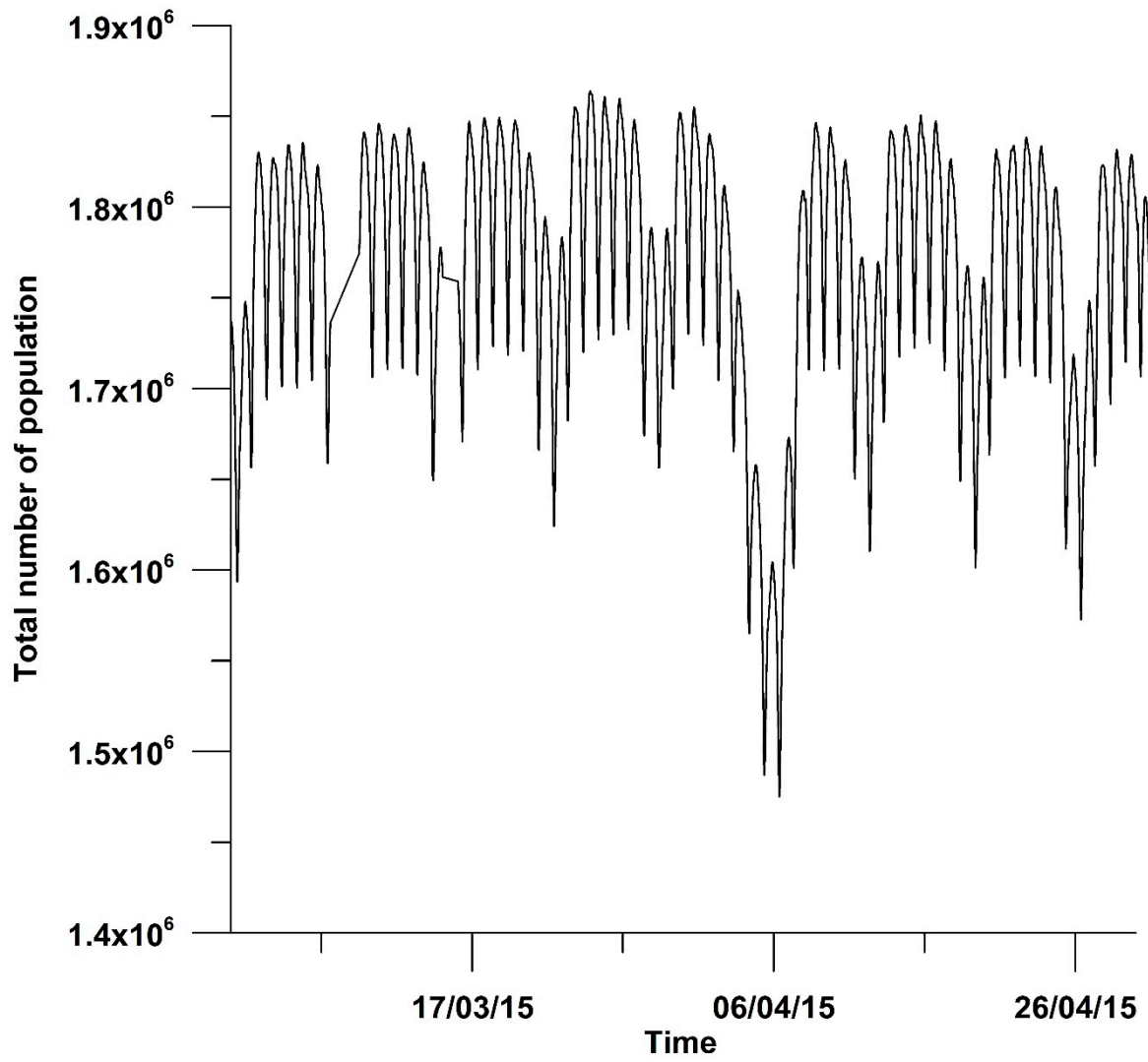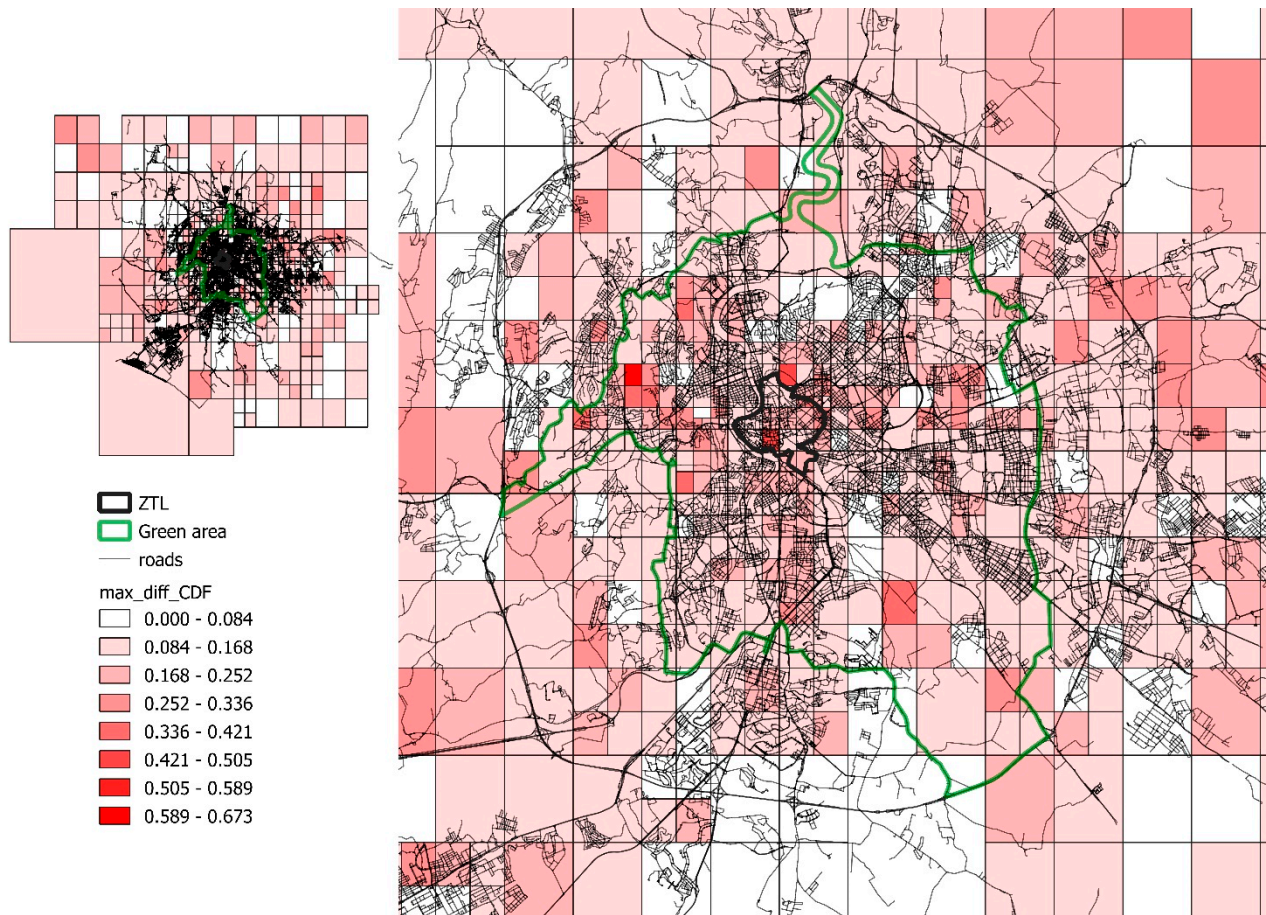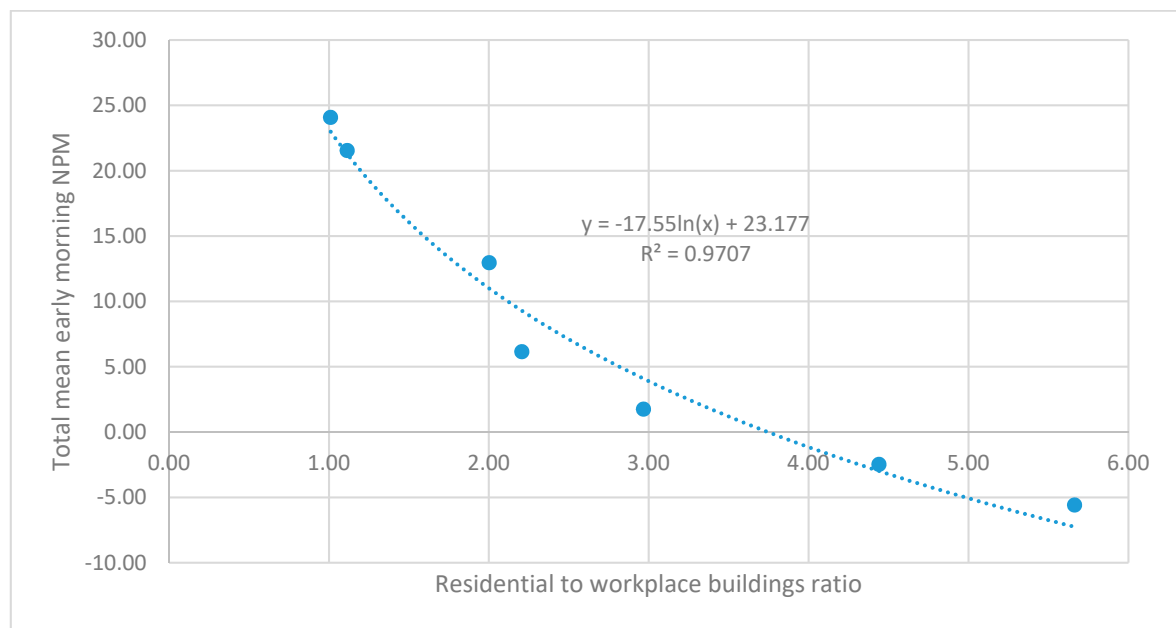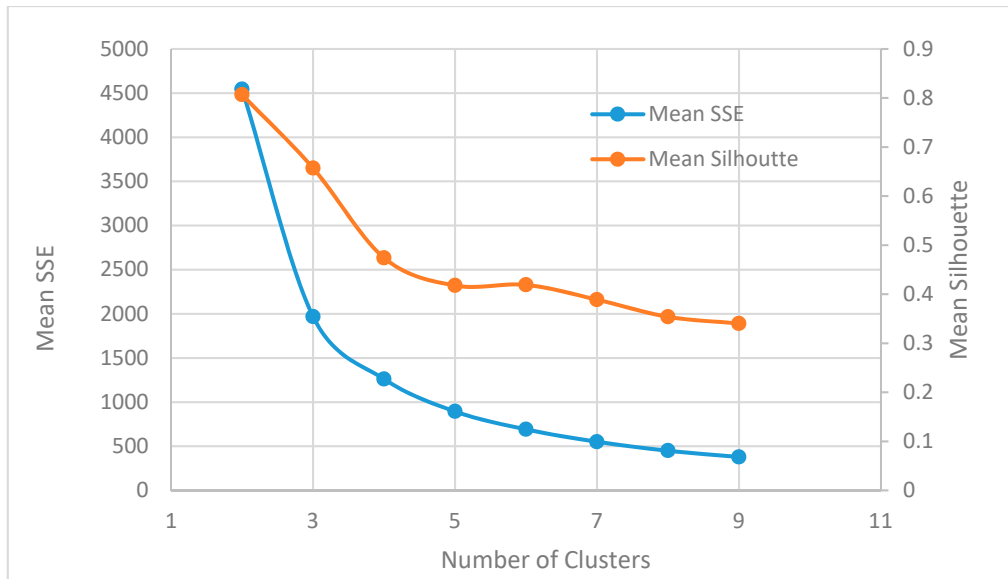| Macro-category	Number of productive units	Number of employees
Agriculture, forestry and fishing	1,397 (0.3%)	3,261 (0.1%)
Cave and mine mineral extraction	265 (0.1%)	3,556 (0.2%)
Manufacturing	25,331 (5.2%)	159,125 (6.9%)
Supply of electric energy, gas vapor and air conditioning	853 (0.2%)	10,857 (0.5%)
Supply of water; sewage, handling of waste	1,211 (0.2%)	19,544 (0.8%)
Constructions	50,165 (10.2%)	139,419 (6%)
Wholesale and retail commerce	115,124 (23.5%)	306,410 (13.2%)
Transport and storage services	16,041 (3.3%)	145,741 (6.3%)
Accommodations and food services	31,074 (6.3%)	125,076 (5.4%)
Information and communication services	15,407 (3.1%)	110,058 (4.7%)
Financial and insurance services	13,497 (2.8%)	69,352 (3%)
Real estate services	21,556 (4.4%)	22,951 (1%)
Professional, scientific and technical services	79,078 (16.1%)	158,402 (6.8%)
Renting, travel agencies and enterprise support services	21,661 (4.4%)	161,787 (7%)
Public administration, and defense, social insurance	1,939 (0.4%)	129,756 (5.6%)
Education	8,570 (1.7%)	158,989 (6.9%)
Health and social assistance	37,176 (7.6%)	230,386 (9.9%)
Artistic, sports and entertainment activities	22,240 (4.5%)	169,848 (7.3%)
Other services	28,117 (5.7%)	192,945 (8.3%)
TOTAL	490,702 (100%)	2,317,463 (100%)

Figure S1. Time series of the total population located in the grid domain during the study period.

Figure S2. Map of the maximum difference of mobile phone and census age population CDFs for the city of Rome.

Figure S3. Plot of Total mean early morning NMP mobility vs. mean density of residential to workplace buildings ratio.

Figure S4. Plot of Sum Squared Error (SSE) and Silhoutte vs. number of clusters.