Article

Residential Buildings' Real Estate Values Linked to Summer Surface Thermal Anomaly Patterns and Urban Features: A Florence (Italy) Case Study

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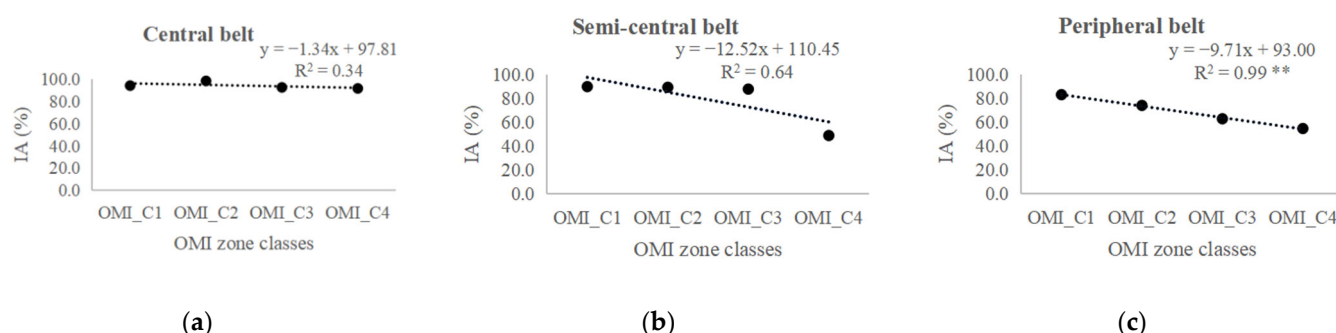
Supplementary materials

Figure S1. Impervious area (IA) according to four OMI zone classes (from OMI_C1 to OMI_C4) for three different urban belts: central (a), semi-central (b), and peripheral (c).
Note: Significant levels: ** p-value < 0.01.

Figure S2. Tree cover (TC) according to four OMI zone classes (from OMI_C1 to OMI_C4) for three different urban belts: central (a), semi-central (b), and peripheral (c).
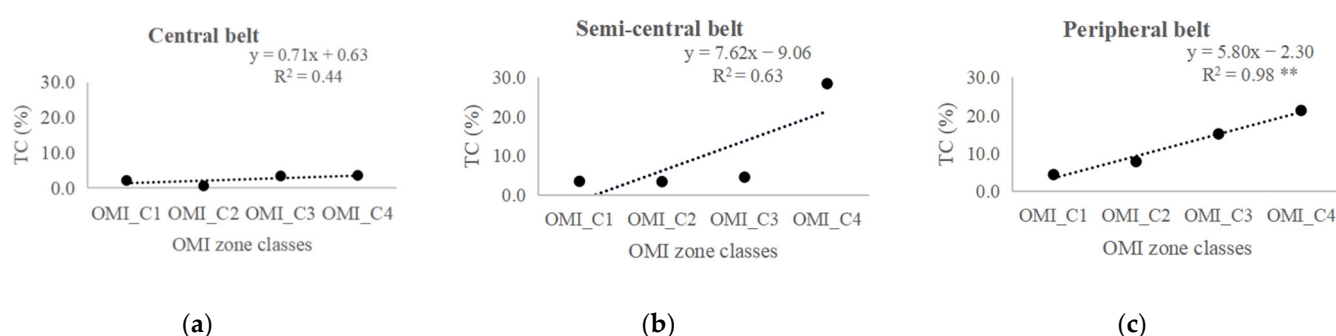Note: Significant levels: ** p-value < 0.01.

Central belt

$y = 0.23x + 2.15$
$R^2 = 0.05$

Semi-central belt

$y = 4.93x - 1.56$
$R^2 = 0.65$

Peripheral belt

$y = 3.86x + 9.29$
$R^2 = 0.96$ *

(a)

(b)

(c)

Figure S3. Grassland area (GA) according to four OMI zone classes (from OMI_C1 to OMI_C4) for three different urban belts: central (a), semi-central (b), and peripheral (c).
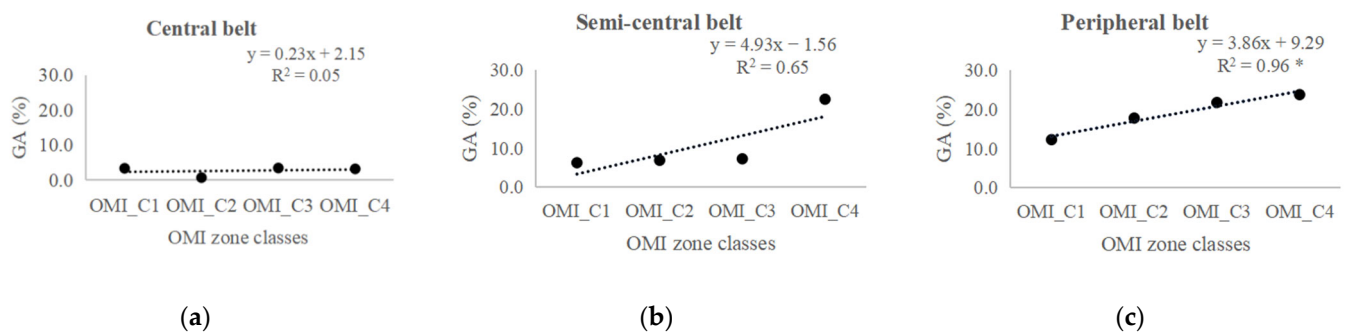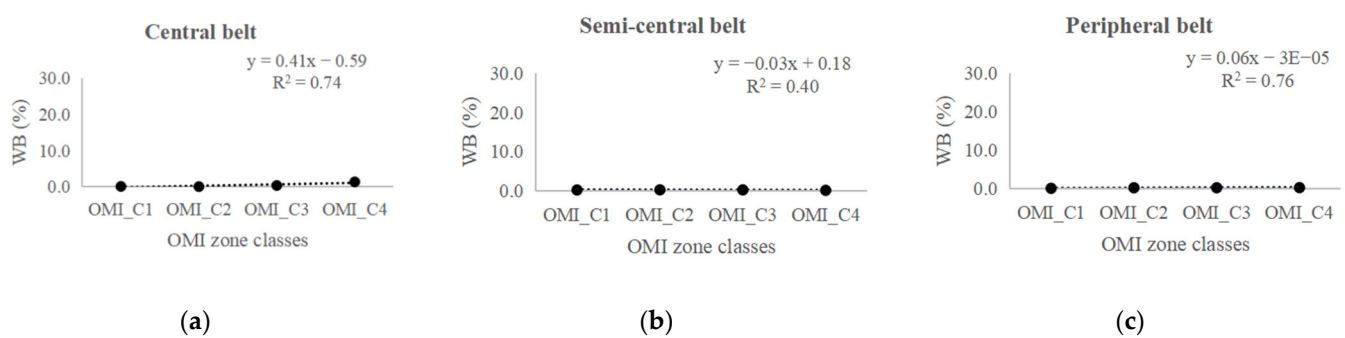Note: Significant levels: * p-value < 0.05.

Central belt

$y = 0.41x - 0.59$
$R^2 = 0.74$

Semi-central belt

$y = -0.03x + 0.18$
$R^2 = 0.40$

Peripheral belt

$y = 0.06x - 3E{-}05$
$R^2 = 0.76$

(a)

(b)

(c)

Figure S4. Water bodies (WB) according to four OMI zone classes (from OMI_C1 to OMI_C4) for three different urban belts: central (a), semi-central (b), and peripheral (c).

Table S1. Comparisons between surface urban features in two buffer areas (calculated with a radius of 50 m and 100 m) surrounding residential buildings in the three different OMI belts (central, semi-central and peripheral).

OMI belts	OMI_C	Surface urban features in two buffer areas (50 m and 100 m) Mean ± standard deviation									
		LST (°C)		IA (%)		TC (%)		GA (%)		WB (%)	
		50 m buffer	100 m buffer	50 m buffer	100 m buffer	50 m buffer	100 m buffer	50 m buffer	100 m buffer	50 m buffer	100 m buffer
Central	OMI_C1	36.8±0.8	36.8±0.8	94.4±7.1	93.5±5.7	2.1±3.7	2.6±3.2	3.4±4.4	3.8±3.3	0.1±0.6	0.1±0.7
	OMI_C2	38.2±0.6	38.1±0.5	98.7±4.0	98.1±3.9	0.6±1.9	0.7±1.7	0.7±2.4	0.9±1.9	<0.01±0.2	0.2±1.6
	OMI_C3	36.9±1.1	36.7±1.1	92.8±10.6	88.9±11.7	3.4±6.5	4.9±6.5	3.5±5.3	5.1±5.1	0.3±2.3	1.1±4.7
	OMI_C4	36.6±1.8	36.4±1.9	91.9±15.2	87.1±17.8	3.6±8.7	5.0±9.5	3.2±7.1	4.3±7.3	1.3±5.1	3.6±8.5
	R^2	0.98		0.95		0.99		0.93		0.99	
	p-value	<0.01		<0.05		<0.01		<0.05		<0.01	
Semi-central	OMI_C1	36.5±1.3	36.4±1.2	90.1±13.5	87.5±13.8	3.5±6.9	4.4±6.6	6.3±8.3	7.7±8.3	0.1±1.1	0.4±2.5
	OMI_C2	36.1±1.0	36.0±1.0	89.6±13.0	86.1±12.7	3.4±5.8	4.5±5.2	6.9±9.0	8.7±8.4	0.2±1.9	0.7±3.7
	OMI_C3	35.8±1.3	35.7±1.2	88.0±14.6	85.0±14.3	4.5±7.6	5.9±7.5	7.3±9.1	8.9±8.7	0.1±0.8	0.2±0.7
	OMI_C4	32.7±1.7	32.5±1.6	48.9±23.8	40.6±22.6	28.5±18.8	33.8±17.3	22.6±14.3	25.6±14.6	<0.1±0.3	<0.1±0.3
	R^2	0.99		0.99		0.99		0.99		0.55	
	p-value	<0.001		<0.001		<0.001		<0.001		0.260	
Peripheral	OMI_C1	36.2±1.0	36.1±1.0	83.2±15.6	77.8±15.1	4.4±7.2	6.4±6.9	12.3±11.8	15.7±11.0	<0.1±0.4	0.1±0.8
	OMI_C2	35.7±1.6	35.6±1.6	74.2±22.0	68.6±22.3	7.9±11.5	9.4±11.3	17.8±14.9	21.6±14.9	0.2±1.8	0.4±2.6
	OMI_C3	34.4±2.3	34.3±2.3	62.9±29.0	56.3±30.9	15.2±17.7	18.1±18.5	21.8±18.1	25.3±18.7	0.2±1.2	0.3±2.1
	OMI_C4	33.2±1.9	33.0±1.8	54.6±26.0	45.3±25.2	21.4±17.2	25.8±16.3	23.8±17.0	28.6±17.6	0.2±1.3	0.3±1.1
	R^2	0.99		0.99		0.99		0.99		0.80	
	p-value	<0.001		<0.01		<0.01		<0.01		0.105	

Note: OMI_C is referred to the OMI zone classes (going from OMI_C1 to OMI_C4 with the lowest to the highest residential building real estate values, respectively).