

GROUP EXERCISE IN FLORENCE: RELATIONSHIP BETWEEN CULTURAL HERITAGE AND HUMAN

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1.1 OBJECTIVE

- ◎ Identify and analyze the spatial pattern of human disturbance on cultural heritage in Florence
- ◎ See if spatial location will affect centrality
- ◎ Provide implications for better management

2.1 METHODOLOGY

- ◉ 9 indicators
- ◉ 20 samples
- ◉ case studies for comparison
 - Duomo and Santa Crose
 - Duomo and Pento Vecchio

LIST OF 9 INDICATORS

No.	Indicator
1	Littering
2	Vandalism
3	Queuing number
4	Degradation
5	Replacement & repairing
6	Traffic congestion
7	Pedestrian congestion
8	Pricing
9	Opening hours

LIST OF SAMPLES

- ◉ Galleria dell'Accademia
- ◉ Basilica della S.S. Annunziata
- ◉ Piazza della S.S. Annunziata
- ◉ Palazzo Medici Riccardi
- ◉ Campanile (bell tower)
- ◉ Baptistery
- ◉ Duomo
- ◉ Galleria degli Uffizi
- ◉ Museo del Bargello
- ◉ Badia Fiorentina
- ◉ Basilica di Santa Croce
- ◉ Basilica di San Lorenzo
- ◉ Biblioteca Medicea-Laurenziana
- ◉ Palazzo Pitti
- ◉ Museo Bardini
- ◉ Porta S. Miniato
- ◉ Piazzalo Michelangelo
- ◉ Chiesa de San Muniato al Monte
- ◉ Chiesa di Spirito





floren
尋找商

Location of samples - North

搜尋地圖

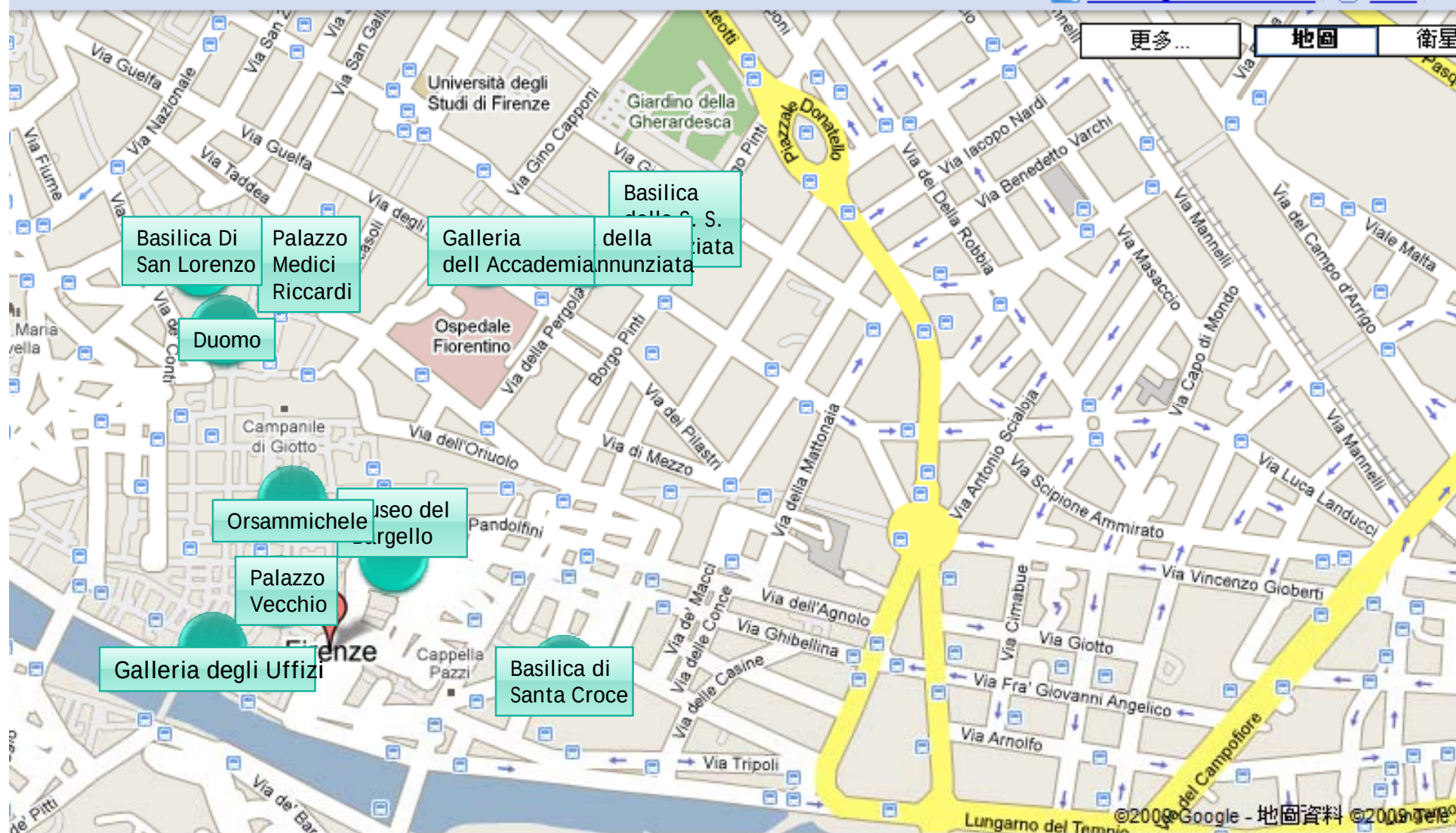
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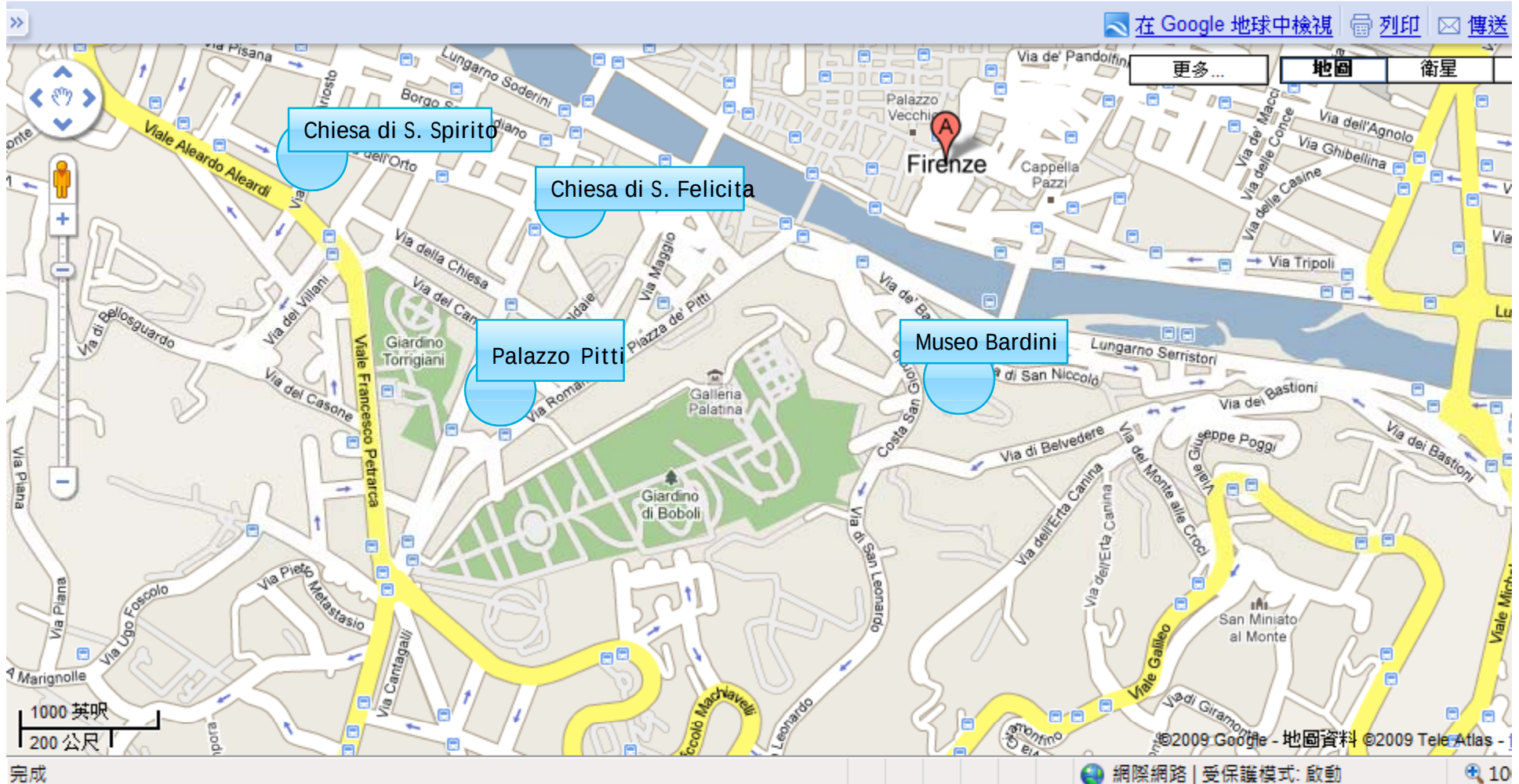
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地圖

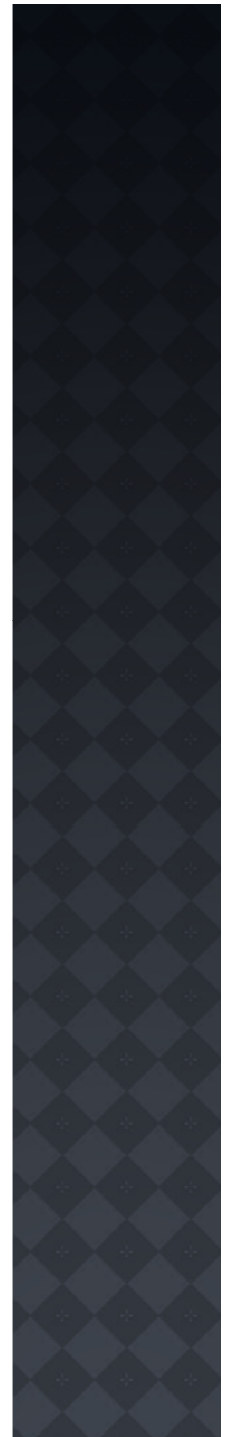
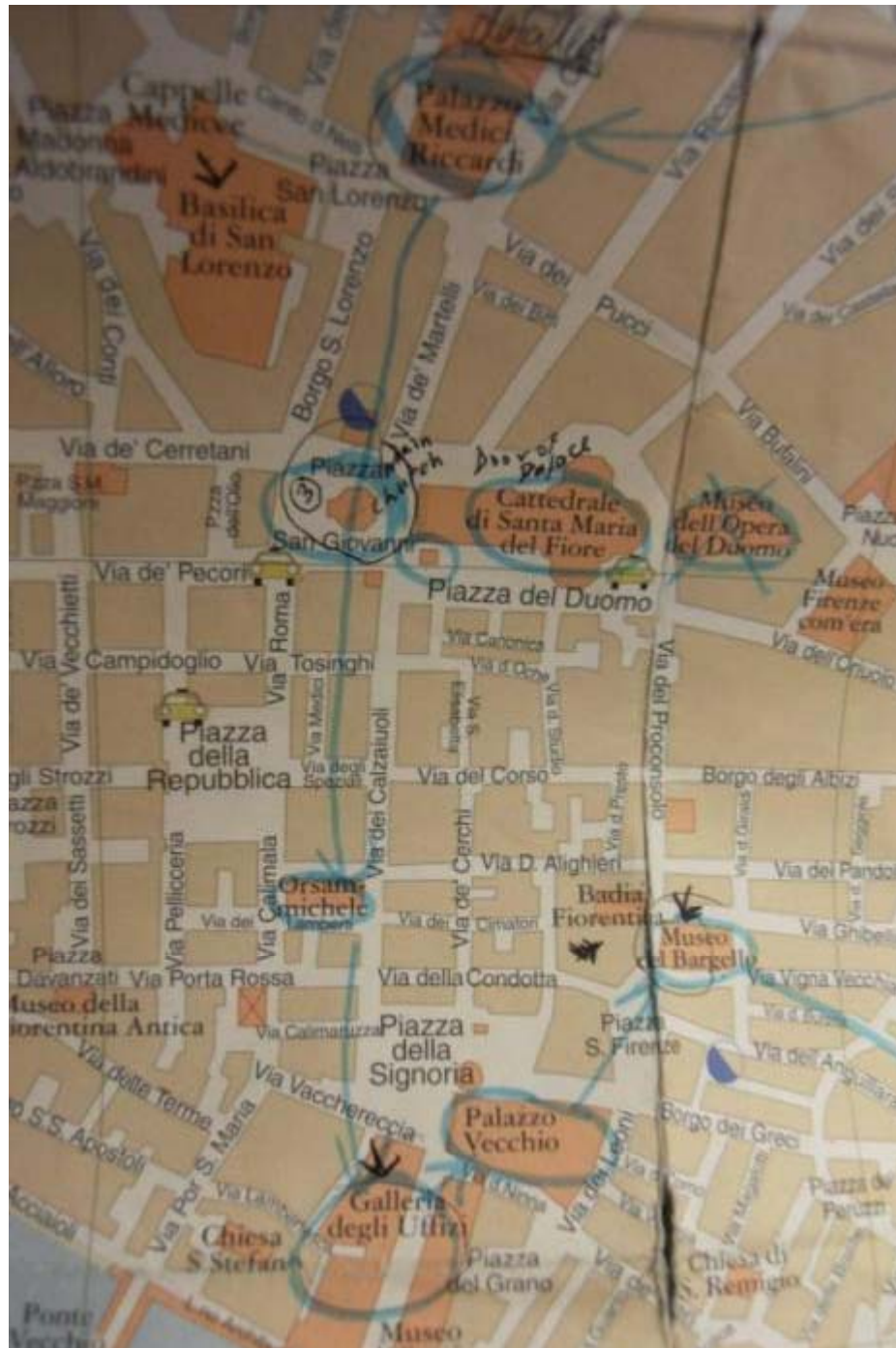
衛星



Location of samples - South



完成



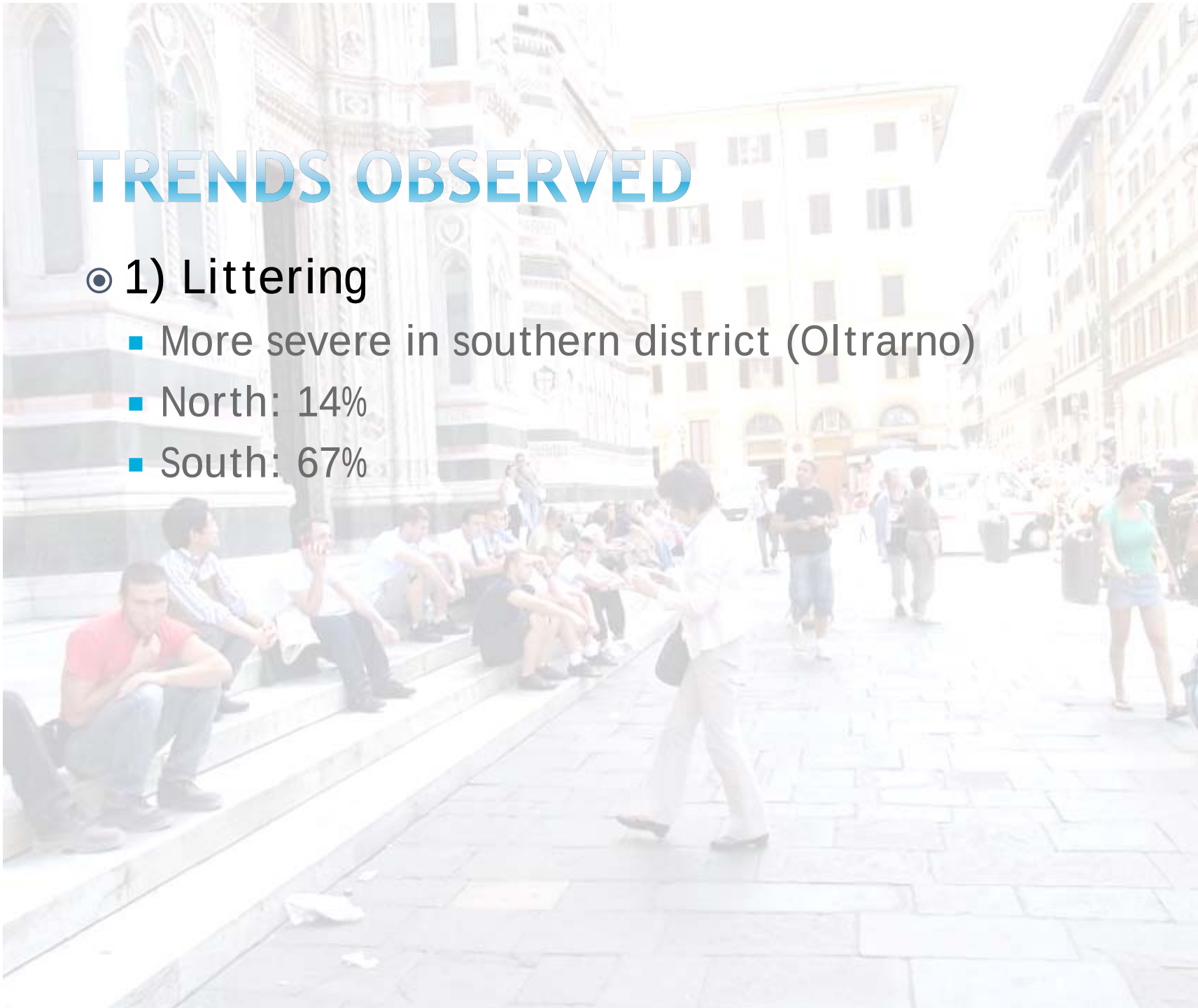
3.1 APPLYING THE INDICATORS TO THE HERITAGES SELECTED

		Indicators								
	Samples	Littering	Vandalism	Queuing number	Degradation	Replace & repairing	traffic congestion	Pedestrian congestion	Pricing	Opening hours
1	Galleria dell'Accademia		*	* (80)		n/a		*	10	8:15 - 6:15
2	Basilica della S.S. Annunziata								n/a	n/a
3	Piazza della S.S. Annunziata		*		*	n/a				48:30 - 7pm
4	Palazzo Medici Riccardi				*		*			79am - 6pm
5	Campanile (bell tower)	*			*	*		*		68:30 - 6:50
6	Bapistery				*	*	*	*	2.6	noon - 6:30
7	Duomo			* (200+)	*	*	*	*	free	10am - 5pm
8	Galleria degli Uffizi	*	*	*	*	*		*		68:15 - 6:15
9	Museo del Bargello				*				4.1	8:15 - 1:50
10	Badia Fiorentina		*		*	*				mon 3-6pm
11	Loggia della Signoria			n/a	*			*	free	free
12	Basilica di Santa Croce			* (25)	*	*			5	9:30 - 5:30
13	Basilica di San Lorenzo		*		*				3.5	10am - 5pm
14	Biblioteca Medicea-Laurenziana				*				free	9am - 1pm
		14%	35%	29%	86%	43%	21%	43%		
15	Palazzo Pitti			*	*				10 to 12	8:15 - 6:30
16	Museo Bardini	*	*		*			*	n/a	n/a
17	Porta S. Miniato	*			*			*	n/a	n/a
18	Piazzalo Michelangelo	*	*	n/a	*			*	free	n/a
19	Chiesa de San Muniato al Monte				*				free	n/a
20	Chiesa di Spirito	*			*	*	*		free	8:30 - noon, 4-6pm
		67%	33%	0%	100%	17%	17%	50%		
total		30%	35%	25%	90%	30%	15%	45%		

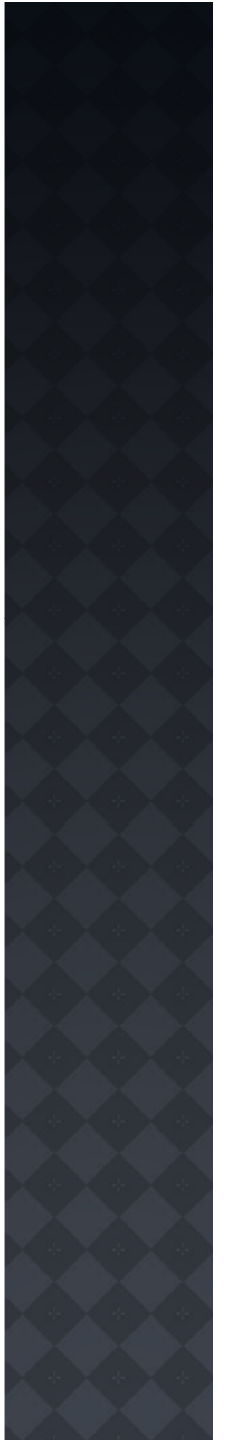
TRENDS OBSERVED

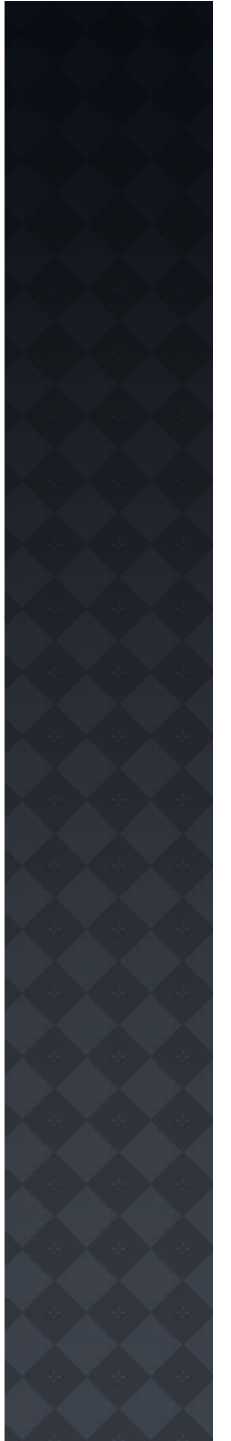
◎ 1) Littering

- More severe in southern district (Oltrarno)
- North: 14%
- South: 67%



		Indicators								
	Samples	Littering	Vandalism	Queing number	Degradation	Replace & repairing	traffic congestion	Pedestrian congestion	Pricing	Opening hours
1	Galleria dell'Accademia		*	* (80)		n/a		*	10	8:15 - 6:15
2	Basilica della S.S. Annunziata								n/a	n/a
3	Piazza della S.S. Annunziata		*		*	n/a				48:30 - 7pm
4	Palazzo Medici Riccardi				*		*			79am - 6pm
5	Campanile (bell tower)	*			*	*		*		68:30 - 6:50
6	Bapistery				*	*	*	*	2.6	noon - 6:30
7	Duomo			* (200+)	*	*	*	*	free	10am - 5pm
8	Galleria degli Uffizi	*	*	*	*	*		*		68:15 - 6:15
9	Museo del Bargello				*				4.1	8:15 - 1:50
10	Badia Fiorentina		*		*	*				mon 3-6pm
11	Loggia della Signoria			n/a	*			*	free	free
12	Basilica di Santa Croce			* (25)	*	*				59:30 - 5:30
13	Basilica di San Lorenzo		*		*				3.5	10am - 5pm
14	Biblioteca Medicea-Laurenziana				*				free	9am - 1pm
		14%	35%	29%	86%	43%	21%	43%		
15	Palazzo Pitti			*	*				10 to 12	8:15 - 6:30
16	Museo Bardini	*	*		*			*	n/a	n/a
17	Porta S. Miniato	*			*			*	n/a	n/a
18	Piazzalo Michelangelo	*	*	n/a	*			*	free	n/a
19	Chiesa de San Muniato al Monte				*				free	n/a
20	Chiesa di Spirito	*			*	*	*		free	8:30 - noon, 4-6pm
		67%	33%	0%	100%	17%	17%	50%		
total		30%	35%	25%	90%	30%	15%	45%		

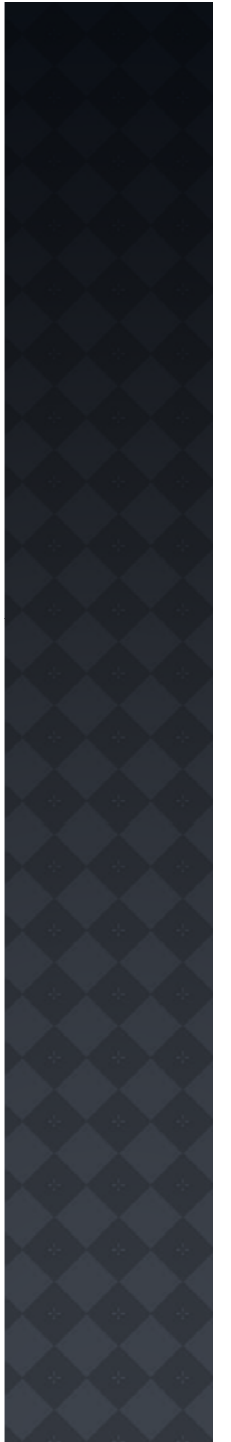


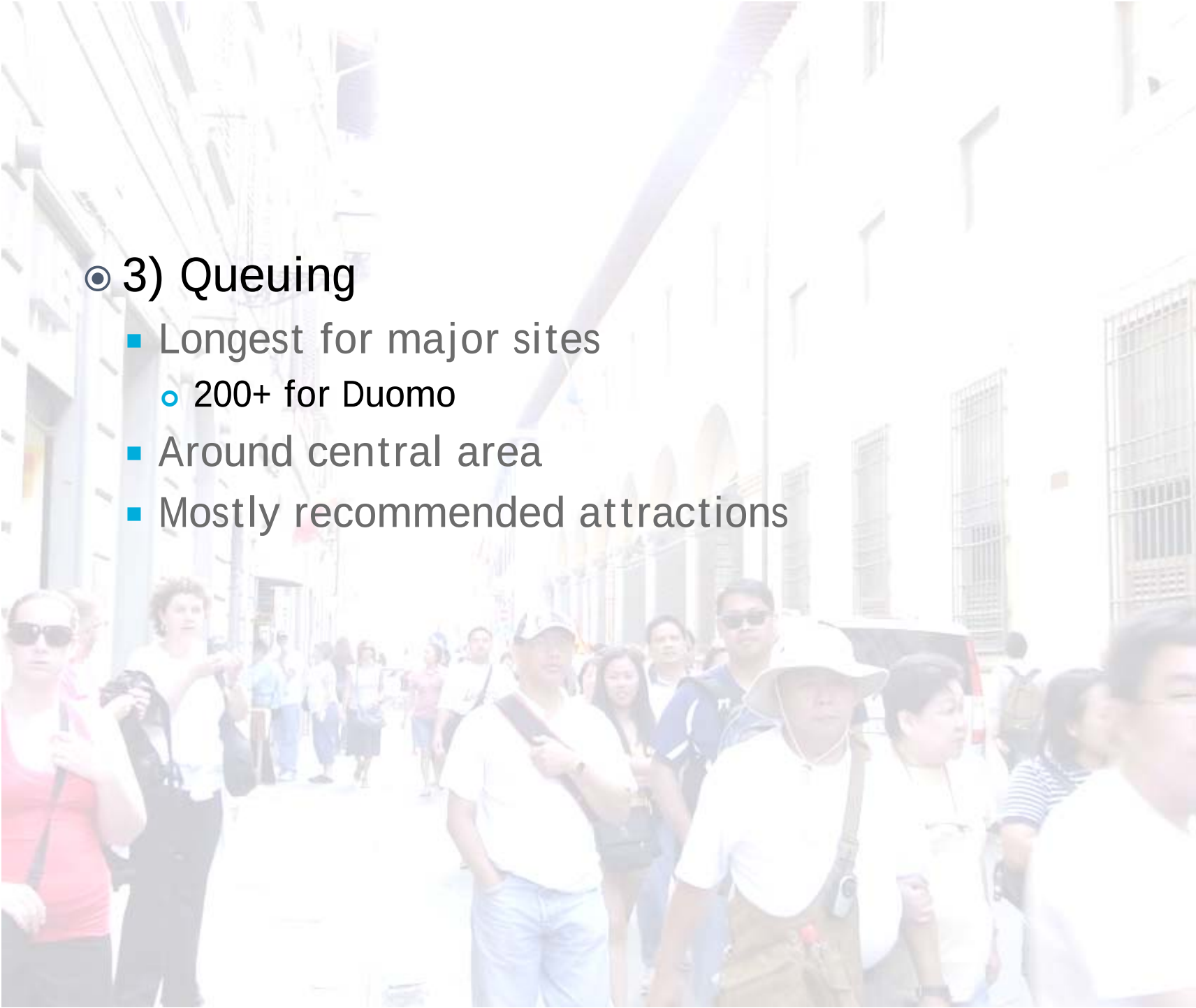


- ◎ 2) vandalism
 - No spatial pattern



		Indicators								
	Samples	Littering	Vandalism	Queing number	Degradation	Replace & repairing	traffic congestion	Pedestrian congestion	Pricing	Opening hours
1	Galleria dell'Accademia		*	* (80)		n/a		*	10	8:15 - 6:15
2	Basilica della S.S. Annunziata								n/a	n/a
3	Piazza della S.S. Annunziata		*		*	n/a				48:30 - 7pm
4	Palazzo Medici Riccardi				*		*			79am - 6pm
5	Campanile (bell tower)	*			*	*		*		68:30 - 6:50
6	Bapistery				*	*	*	*	2.6	noon - 6:30
7	Duomo			* (200+)	*	*	*	*	free	10am - 5pm
8	Galleria degli Uffizi	*	*	*	*	*		*		68:15 - 6:15
9	Museo del Bargello				*				4.1	8:15 - 1:50
10	Badia Fiorentina		*		*	*				mon 3-6pm
11	Loggia della Signoria			n/a	*			*	free	free
12	Basilica di Santa Croce			* (25)	*	*				59:30 - 5:30
13	Basilica di San Lorenzo		*		*				3.5	10am - 5pm
14	Biblioteca Medicea-Laurenziana				*				free	9am - 1pm
		14%	35%	29%	86%	43%	21%	43%		
15	Palazzo Pitti			*	*				10 to 12	8:15 - 6:30
16	Museo Bardini	*	*		*			*	n/a	n/a
17	Porta S. Miniato	*			*			*	n/a	n/a
18	Piazzalo Michelangelo	*	*	n/a	*			*	free	n/a
19	Chiesa de San Muniato al Monte				*				free	n/a
20	Chiesa di Spirito	*			*	*	*		free	8:30 - noon, 4-6pm
		67%	33%	0%	100%	17%	17%	50%		
total		30%	35%	25%	90%	30%	15%	45%		



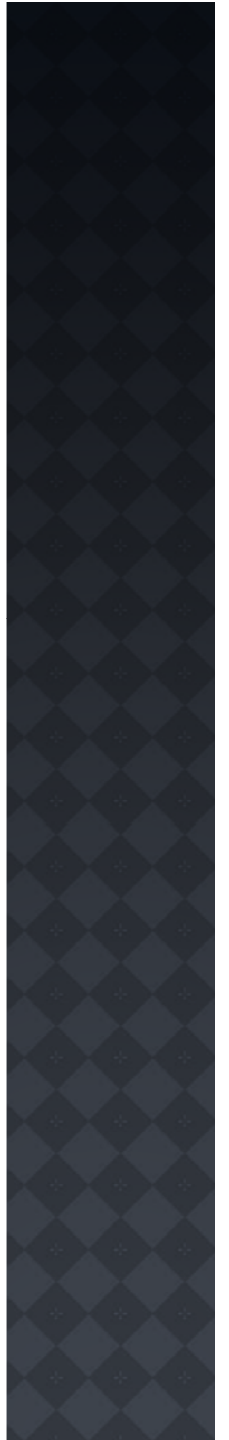


◎ 3) Queuing

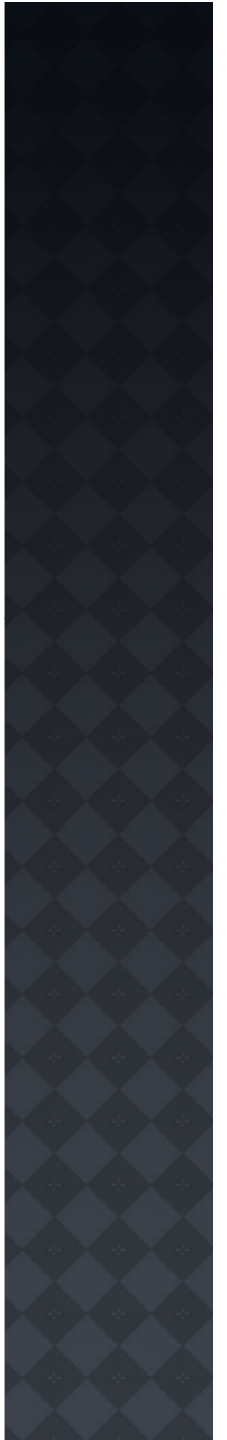
- Longest for major sites
 - 200+ for Duomo
- Around central area
- Mostly recommended attractions

		Indicators								
	Samples	Littering	Vandalism	Queuing number	Degradation	Replace & repairing	traffic congestion	Pedestrian congestion	Pricing	Opening hours
1	Galleria dell'Accademia		*	* (80)		n/a		*	10	8:15 - 6:15
2	Basilica della S.S. Annunziata								n/a	n/a
3	Piazza della S.S. Annunziata		*		*	n/a				48:30 - 7pm
4	Palazzo Medici Riccardi				*		*			79am - 6pm
5	Campanile (bell tower)	*			*	*		*		68:30 - 6:50
6	Bapistery				*	*	*	*	2.6	noon - 6:30
7	Duomo			* (200+)	*	*	*	*	free	10am - 5pm
8	Galleria degli Uffizi	*	*	*	*	*		*		68:15 - 6:15
9	Museo del Bargello				*				4.1	8:15 - 1:50
10	Badia Fiorentina		*		*	*				mon 3-6pm
11	Loggia della Signoria			n/a	*			*	free	free
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18	Piazzalo Michelangelo	*	*	n/a	*			*	free	n/a
19	Chiesa de San Muniato al Monte				*				free	n/a
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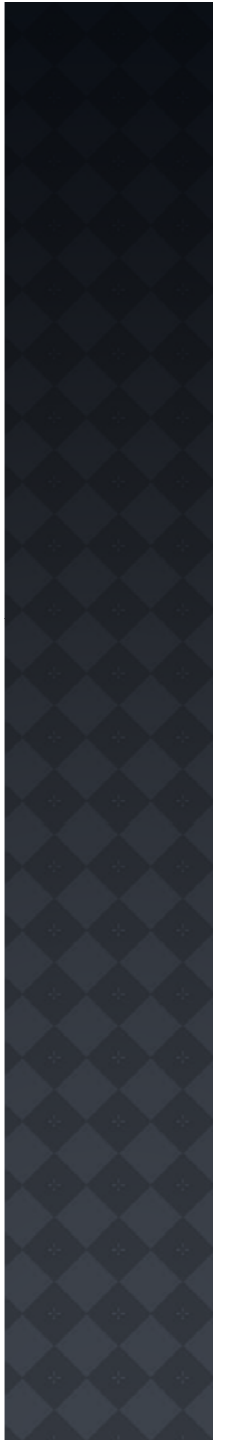
(UFFIZI GALLERY)

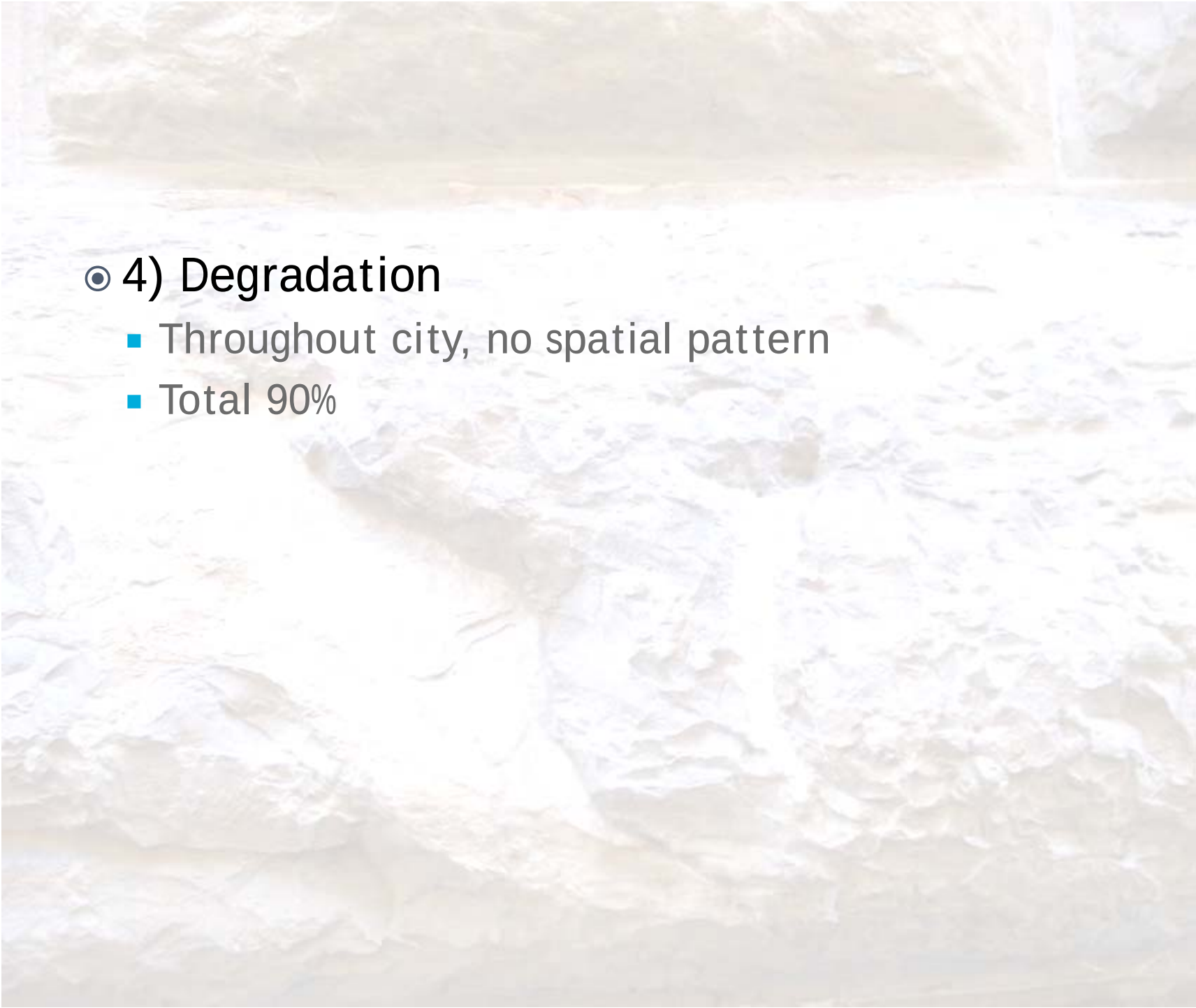


(ACADEMIA GALLERY)



(DUOMO)

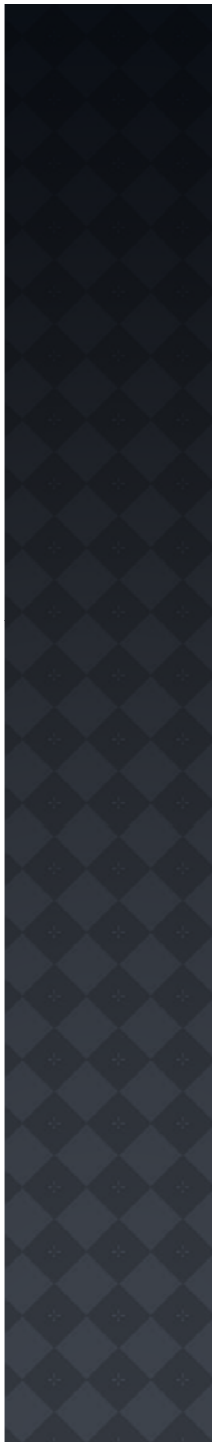


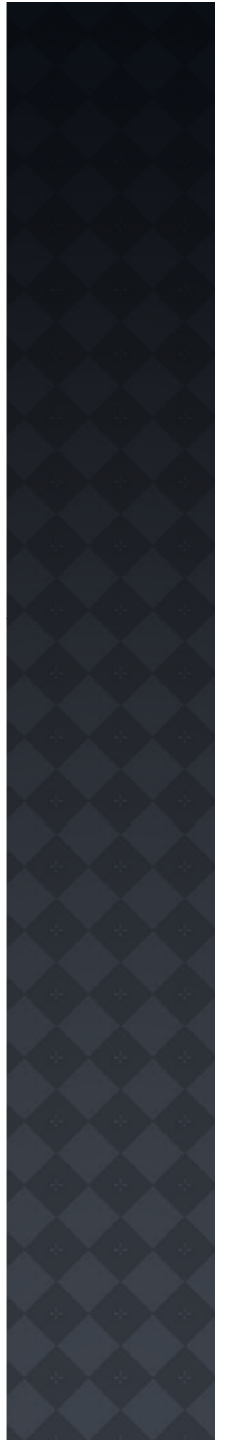


◎ 4) Degradation

- Throughout city, no spatial pattern
- Total 90%

		Indicators								
	Samples	Littering	Vandalism	Queing number	Degradation	Replace & repairing	traffic congestion	Pedestrian congestion	Pricing	Opening hours
1	Galleria dell'Accademia		*	* (80)		n/a		*	10	8:15 - 6:15
2	Basilica della S.S. Annunziata								n/a	n/a
3	Piazza della S.S. Annunziata		*		*	n/a				48:30 - 7pm
4	Palazzo Medici Riccardi				*		*			79am - 6pm
5	Campanile (bell tower)	*			*	*		*		68:30 - 6:50
6	Bapistery				*	*	*	*	2.6	noon - 6:30
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8	Galleria degli Uffizi	*	*	*	*	*		*		68:15 - 6:15
9	Museo del Bargello				*				4.1	8:15 - 1:50
10	Badia Fiorentina		*		*	*				mon 3-6pm
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16	Museo Bardini	*	*		*			*	n/a	n/a
17	Porta S. Miniato	*			*			*	n/a	n/a
18	Piazzalo Michelangelo	*	*	n/a	*			*	free	n/a
19	Chiesa de San Muniato al Monte				*				free	n/a
20	Chiesa di Spirito	*			*	*	*		free	8:30 - noon, 4-6pm
		67%	33%	0%	100%	17%	17%	50%		
total		30%	35%	25%	90%	30%	15%	45%		



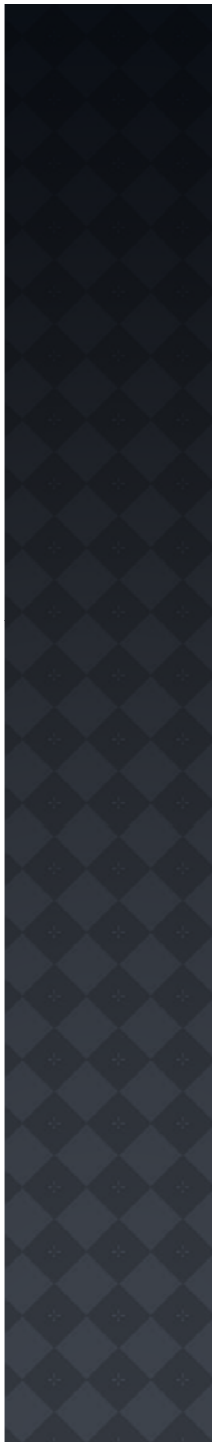


◎ 5) Replacement and repairing

- Mostly in central area
 - 62%



		Indicators								
	Samples	Littering	Vandalism	Queuing number	Degradation	Replace & repairing	traffic congestion	Pedestrian congestion	Pricing	Opening hours
1	Galleria dell'Accademia		*	*(80)		n/a		*	10	8:15 - 6:15
2	Basilica della S.S. Annunziata								n/a	n/a
3	Piazza della S.S. Annunziata		*		*	n/a				48:30 - 7pm
4	Palazzo Medici Riccardi				*		*			79am - 6pm
5	Campanile (bell tower)	*			*	*		*		68:30 - 6:50
6	Bapistery				*	*	*	*	2.6	noon - 6:30
7	Duomo			*(200+)	*	*	*	*	free	10am - 5pm
8	Galleria degli Uffizi	*	*	*	*	*		*		68:15 - 6:15
9	Museo del Bargello				*				4.1	8:15 - 1:50
10	Badia Fiorentina		*		*	*				mon 3-6pm
11	Loggia della Signoria			n/a	*			*	free	free
12	Basilica di Santa Croce			*(25)	*	*				59:30 - 5:30
13	Basilica di San Lorenzo		*		*				3.5	10am - 5pm
14	Biblioteca Medicea-Laurenziana				*				free	9am - 1pm
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15	Palazzo Pitti			*	*				10 to 12	8:15 - 6:30
16	Museo Bardini	*	*		*			*	n/a	n/a
17	Porta S. Miniato	*			*			*	n/a	n/a
18	Piazzalo Michelangelo	*	*	n/a	*			*	free	n/a
19	Chiesa de San Muniato al Monte				*				free	n/a
20	Chiesa di Spirito	*			*	*	*		free	8:30 - noon, 4-6pm
		67%	33%	0%	100%	17%	17%	50%		
total		30%	35%	25%	90%	30%	15%	45%		



3.2 CASE STUDY OF FACTORS AFFECTING THE LEVEL OF DEGRADATION

- ◉ Comparison between facades
- ◉ Both made from same material
- ◉ Both recommended by tourist guidebook

- ◉ Santa Croce

- 1863

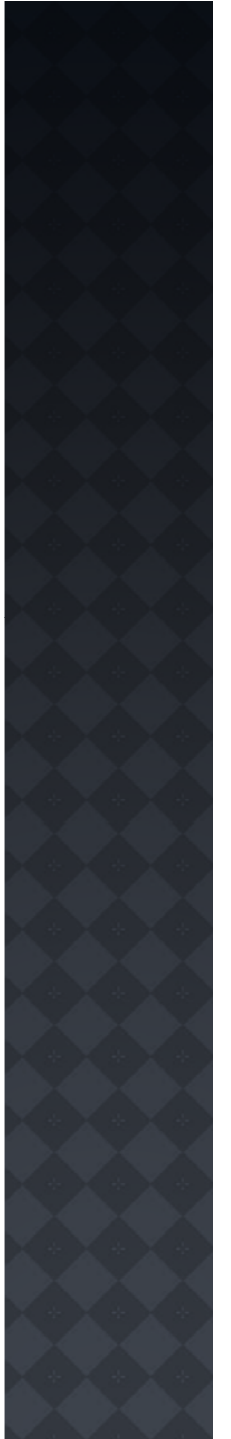
- ◉ Duomo

- 1887

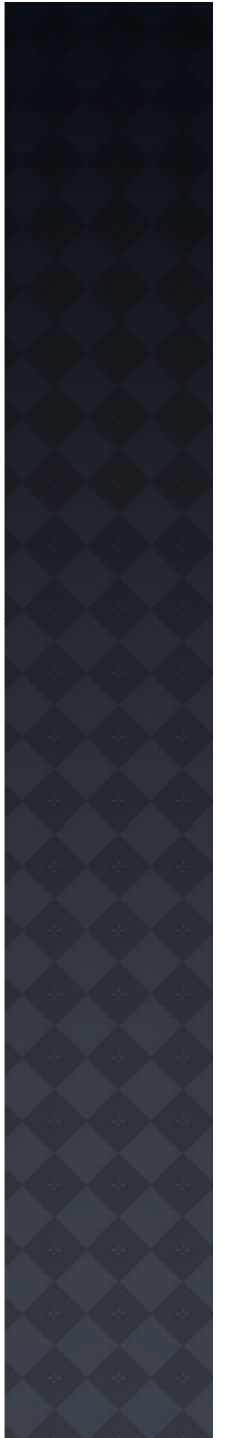


	Degradation	pedestrian flow	location
Duomo	severe	large	central area
Santa Croce	light	little	periphery

DUOMO DEGRADATION



SANTA CROCE - DEGRADATION



DUOMO - PEDESTRIAN FLOW



SANTA CROCE - PEDESTRIAN FLOW

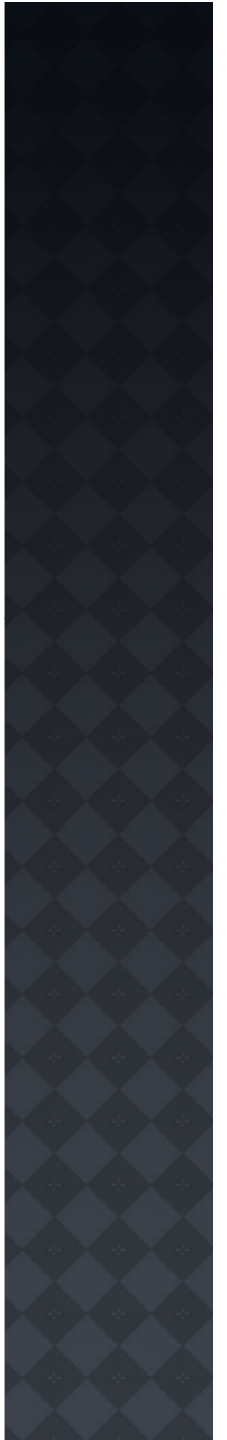


4.1 CASE STUDY OF CONGESTION AS A FACTOR CAUSING THE DEGRADATION OF CULTURAL HERITAGES, ANALYZE THE TIME PATTERN

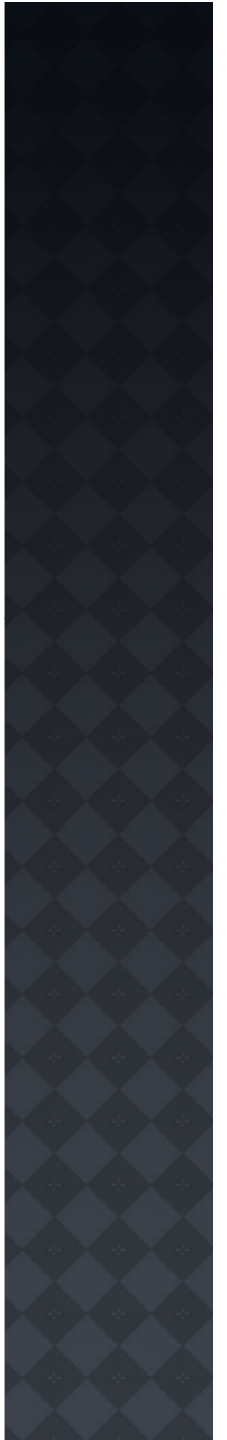
- ◉ Duomo and Ponte Vacchio
- ◉ Congestion located at central region
- ◉ Both are recommended for guided tours
 - Relationship with time



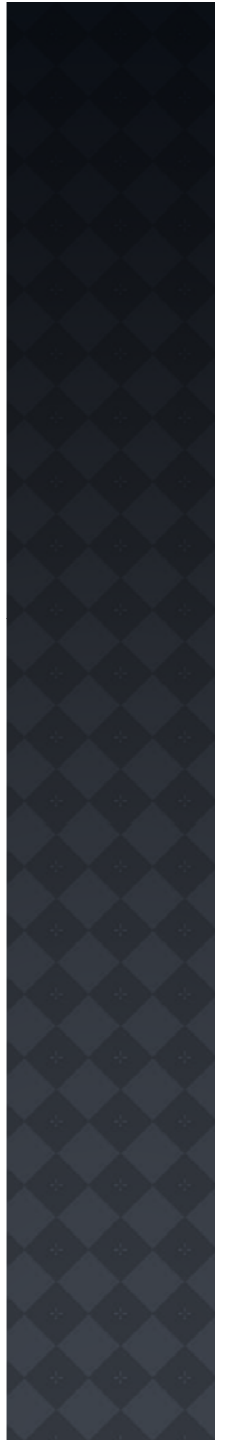
DUOMO 9-10AM



DUOMO 12-1PM



DUOMO 3-4PM



PENTO VECCHIO 9-10 AM

◎ 9am – 10am



PENTO VECCHIO 12-1PM

© 12 - 1pm



PENTO VECCHIO 3-4PM

◎ 3 – 4pm



5.1 SOLUTIONS

- ◉ Managing tourism flow

- At major attractions: Divert to other region → bring in income for repair work since only central sites have sufficient income to finance the repair work

- At less important attractions with time variation: Rationalize time for guided tours

5.1 SOLUTIONS

- ◎ More rubbish bins

Southern region more littering due to the lack of rubbish bin far less than the northern region



THANKYOU AND
QUESTIONS
WELCOMED 😊