

ERES 2014
European Real Estate Society
10° Educational Seminar
Real estate education and digital generation:
The challenge of introducing
new media into classroom
Ferrara 5-6 December 2014

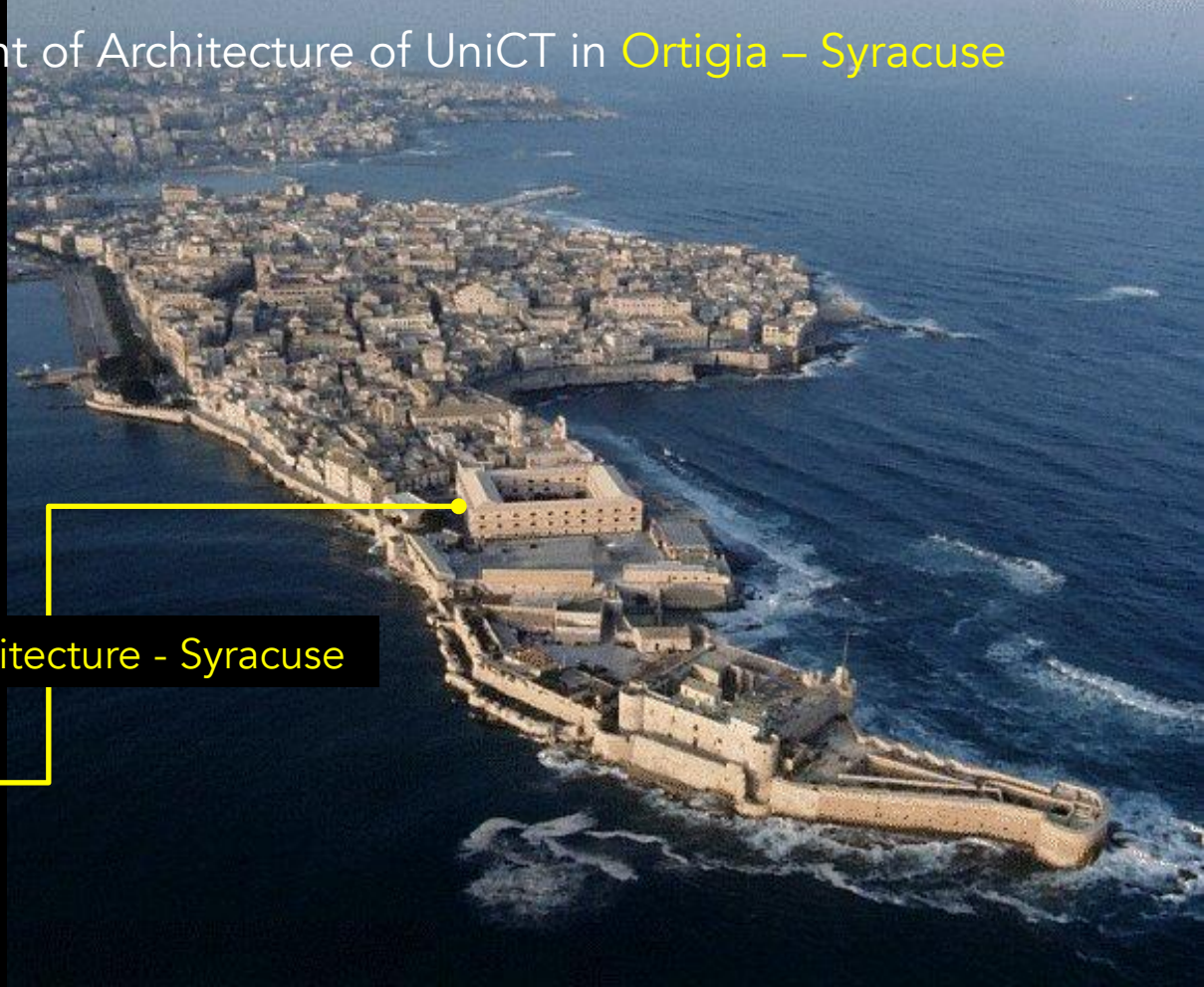
WebGIS technologies and the representation of the real estate market semantic chains



Special Educational Department of Architecture of UniCT in Ortigia – Syracuse

Real estate education and digital generation -: Ferrara 5-6 December 2014

SED of Architecture - Syracuse



Contents

Course of Environmental Economics and Appraisal:

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Arch. Giovanna Ferluga

Eng. Filippo Gagliano

Eng. Maria Rosa Trovato

Dr. Alberto Valenti

Students' exercises subjects

- 1 Building cost calculation
- 2 Real estate market appraisal
- 3 Semantic chains in the cap rate perspective
- 4 Interactive real time WebGIS data management project

Course of Environmental Economics and Appraisal: exercise's subjects and the tutorial

The tools aim at arising the students' assessment awareness and at making them capable of assuming an axiological approach.

The tools lead students through an interpretative path of the building that makes it more and more abstract: it starts from the concrete observations, gets through the characterizations, a qualitative assessment, and finally reaches the most abstract quantitative appraisal, which is the monetary one.



1. Students' practice exercises subjects: **building cost** calculation

The tools support students at:

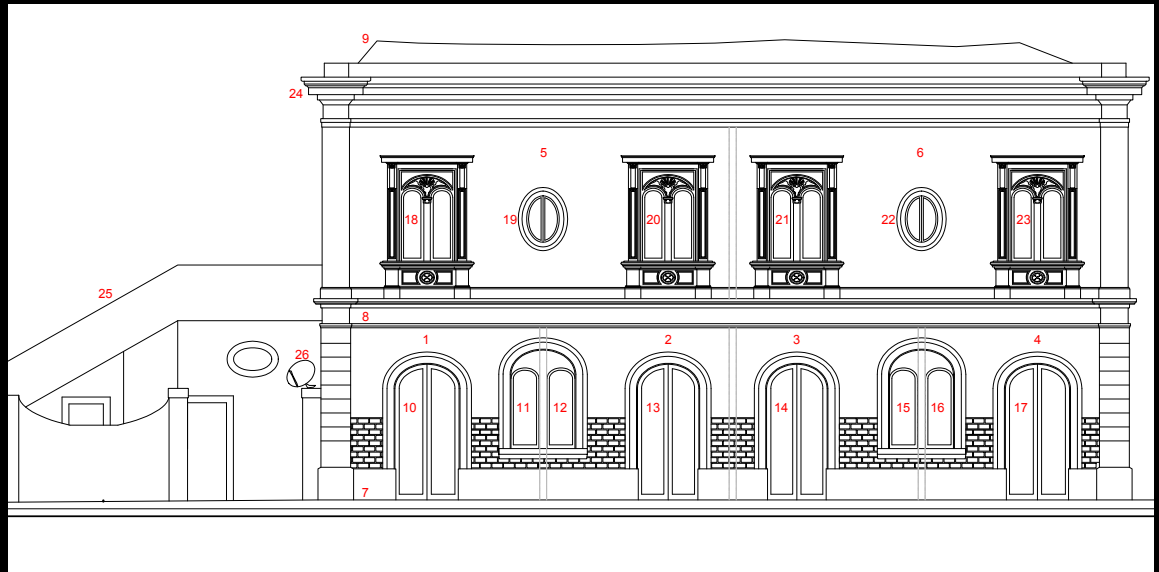
>Building cost calculation

- **building analysis and survey;**
- logical and topological description;
- listing the activities from the official price list;
- project input;
- cost calculation;
- sensitiveness analysis.



>Real estate market appraisal

- real estate market survey;
- data input;
- assessment;
- appraisal;
- general report editing



1. Students' practice exercises subjects: **building cost** calculation

The tools support students in:

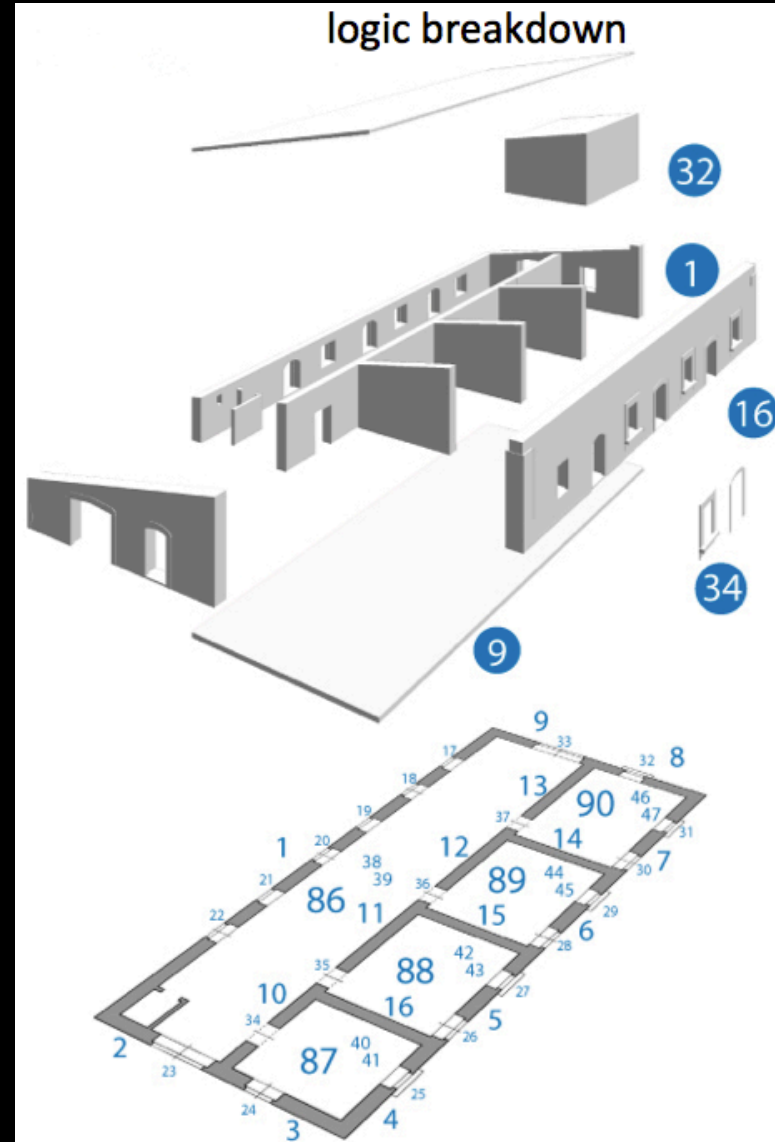
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1. Students' practice exercises subjects: **building cost calculation**

The tools support students in:

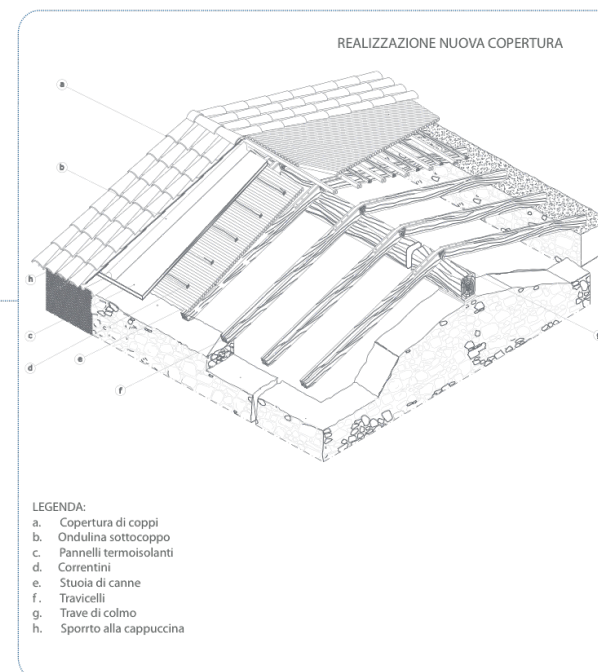
>Building cost calculation

- building analysis and survey;
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AMBITO	CODICE	DESCRIZIONE VOCE DI PREZZARIO	PREZZO/UM
A	C25017.a	Portone esterno di ingresso a due o più partite, di qualsiasi luce, costituito da telaio maestro fissato sulla muratura con robusti arponi e parte mobile intagliata e collegata da fasce intermedie di uguale sezione, compresi cornici, carrerie in ottone pesante, due robusti paletti, serratura di sicurezza a tre o più mandati, chiavi, catenaccio, pomo e maniglia in ottone o metallo cromato, copribattute e quanto altro necessario per dare il lavoro finito a regola d'arte.	€ 293,97 mq
A	C23040	Finestra a battente in legno massello, con telaio maestro di sezione 68*92 mm con triplice battuta, trattate con due mani di impregnante; montate in opera a perfetta regola d'arte. Finestra a due ante con apertura alla mq francese, completa di chiusura a nastro di acciaio cadmiato a tre punti. In pino, color noce.	€ 156,54 mq
MU	indagini	Realizzazione cordolo in legno per mezzo di travi di sezione 24*18 poste sulle pareti perimetrali più lunghe previa preparazione delle stesse attraverso la creazione dell'alloggio nella parte sommitale della parete. Fissaggio delle travi che costituiscono il cordolo nella muratura per mezzo di tirafondi e collegamento all'orditura del tetto ad intervalli di 60 cm in corrispondenza delle travi inclinate per mezzo di chiodatura.	€ 150 m
MU	indagini	Realizzazione sporto alla cappuccina attraverso la posa in opera dei coppi lungo il perimetro dell'edificio.	€ 31,80 cad
FI	B4519.a	Zoccolino di cotto industriale con bordo arrotondato, dimensioni 8/9 *30 mm, spessore 15mm, posto in opera con idoneo collante.	€ 10,93 m
I	15.1.4.2	Fornitura e collocazione di piatto per doccia in grès porcellanato, con gruppo miscelatore, doccia con braccio e diffusore snodabile, piletta a sifone con griglia in ottone compreso rosoni, opere murarie, gli allacciamenti ai punti di adduzione d'acqua (calda e fredda) e di scarico e ventilazione, già predisposti, e quanto altro occorrente per dare l'opera completa e funzionante a perfetta regola d'arte. Delle dimensioni 80*90 cm.	€ 273,70 cad
I	15.1.5	Fornitura e posa in opera di lavabo a colonna in porcellana vetrificata delle dimensioni di 65*50 cm circa con troppo pieno, corredato di gruppo miscelatore, di sifone completo di piletta e saltarello, compreso i rosoni, i flessibili, gli allacciamenti ai punti di adduzione d'acqua (calda e fredda) e di scarico e ventilazione, già predisposti e quanto altro occorrente per dare l'opera completa e funzionante a perfetta regola d'arte.	€ 311,40 cad
I	15.1.8	Fornitura e collocazione di vaso igienico in porcellana vetrificata a pianta ovale delle dimensioni di 55*35 cm circa del tipo a cacciata con sifone incorporato, completo di sedile in bachelite con coperchio, compresa la fornitura e collocazione di cassetta di scarico compreso il pezzo da incasso, le opere murarie, l'allacciamento al punto di adduzione d'acqua, già predisposti, e quanto altro occorrente per dare l'opera completa e funzionante a perfetta regola d'arte.	€ 239,70 cad
I	15.3.3	Fornitura e collocazione di mobile WC attrezzato monoblocco per disabili con cassetta di scarico manuale senza doccetta funzione bidet con miscelatore termostatico per la regolazione della temperatura comprensivo di allacciamento alle linee principali degli impianti elettrici ed ai punti idrici e quanto altro occorre per dare l'opera funzionante a perfetta regola d'arte.	€ 1.582,00 cad
I	15.3.4	Fornitura e collocazione di lavabo ergonomico per disabili, in ceramica bianca delle dimensioni minime di 66*52 cm circa con troppo pieno corredato di rubinetto elettronico, e mensola idraulica che permette la regolazione dell'inclinazione del lavabo, sifone flessibile e trasformatore. Tutto compreso di allacciamento alle linee principali degli impianti elettrici ed ai punti idrici ed ogni altro onere e accessorio per dare l'opera completa e funzionante a perfetta regola d'arte.	€ 1.807,00 cad
FI	B35001.b	Grossa orditura di tetto in legno, di abete fornita e posta in opera, lavorata all'ascia e alla sega, compreso la grossa chioderia e l'eventuale ferramenta di staffatura, la spalmatura delle testate con carbolinum o simili e muratura delle testate stesse nelle predisposte sedi compreso il tiro in alto. A struttura semplice.	€ 23,62 mq
CO	B35009.b	Liquido antiparassitario per la prevenzione e la conservazione delle strutture lignee applicato mediante accurata pulizia delle superfici da trattare con scortecciatore o cartavetro, stesura a tre passate intervalate per favorire il massimo assorbimento del prodotto ed ogni altro onere e magistero per realizzare l'intervento in perfetta regola d'arte. Con vernice antitarlo a finitura cerata.	€ 20 mq
CO	B35017	Realizzazione piano di posa in incamiciato con canne di diametro 2 cm legate tra loro disposte perpendicolarmente all'orditura principale della copertura e rinforzate dal getto di gesso.	€ 43,81 mq
CO	B35008	Correntini di tetto in legno di abete fornita e posta in opera, lavorata all'ascia e alla sega, compreso la grossa chioderia e l'eventuale ferramenta di staffatura, la spalmatura delle testate con carbolinum o simili e muratura delle testate stesse nelle predisposte sedi compreso il tiro in alto. A struttura semplice.	€ 24,24 mq
CO	B315030	Fornitura e posa in opera di polistirene espanso estruso con sola aria nelle celle, resistenza a compressione > 500 Kpa> conduttività termica 0,034 W/mK con bordi ad incastro maschio-femmina.	€ 15,00 mq
I	15.4.2	Fornitura e collocazione di punto di scarico e ventilazione per impianto idrico realizzato dal punto di allaccio del sanitario e fino all'innesto della colonna di scarico e della colonna di ventilazione. Realizzato in tubi di PVC conforme alle norme UNI EN 1329-1, compreso di pezzi speciali, curve e raccorderia, minuteria ed accessori, opere murarie e quanto altro occorrente per dare l'opera completa e funzionante a perfetta regola d'arte.	€ 81,00 cad
I	24.2.11.2	Fornitura e collocazione di caldaia murale a gas a condensazione a camera stagna e a tiraggio forzato per impianto di riscaldamento e produzione acqua calda sanitaria. Compreso il collegamento alla rete elettrica, alla rete idrica, alla rete combustibile, la raccorderia, le opere murarie per il fissaggio a muro e quanto altro occorra per dare l'opera completa e funzionante a perfetta regola d'arte. Portata termica nominale 24KW (80°/60°); Potenza termica ridotta 2,4 KW.	€ 3.449,00 cad
I	24.3.1.1	Fornitura, trasporto e posa in opera di ventilconvettore (fan-coil) di tipo verticale, da montare a parete con presa d'aria inferiore a mandata verticale superiore. Conforme alla direttiva 93/68/CEE (marcatura CE); conforme alla direttiva 2004/108/CE (compatibilità elettromagnetica). Resa termica estiva alle condizioni di riferimento T amb. 25°C T.b.u. 18°C, T acqua 7-12 °C: 1.100 W portata d'aria 240mc/h (velocità media).	€ 561,30 cad
I	24.3.2.1	Fornitura, trasporto e posa in opera di ventilconvettore (fan-coil) di tipo verticale, da montare a parete con presa d'aria inferiore a mandata verticale superiore. Resa termica estiva alle condizioni di riferimento T amb. 23°C T.b.u. 18°C, T acqua 7-12 °C: 2.500 W portata d'aria 240mc/h (velocità media).	€ 678,90 cad



1. Students' practice exercises subjects: **building cost** calculation

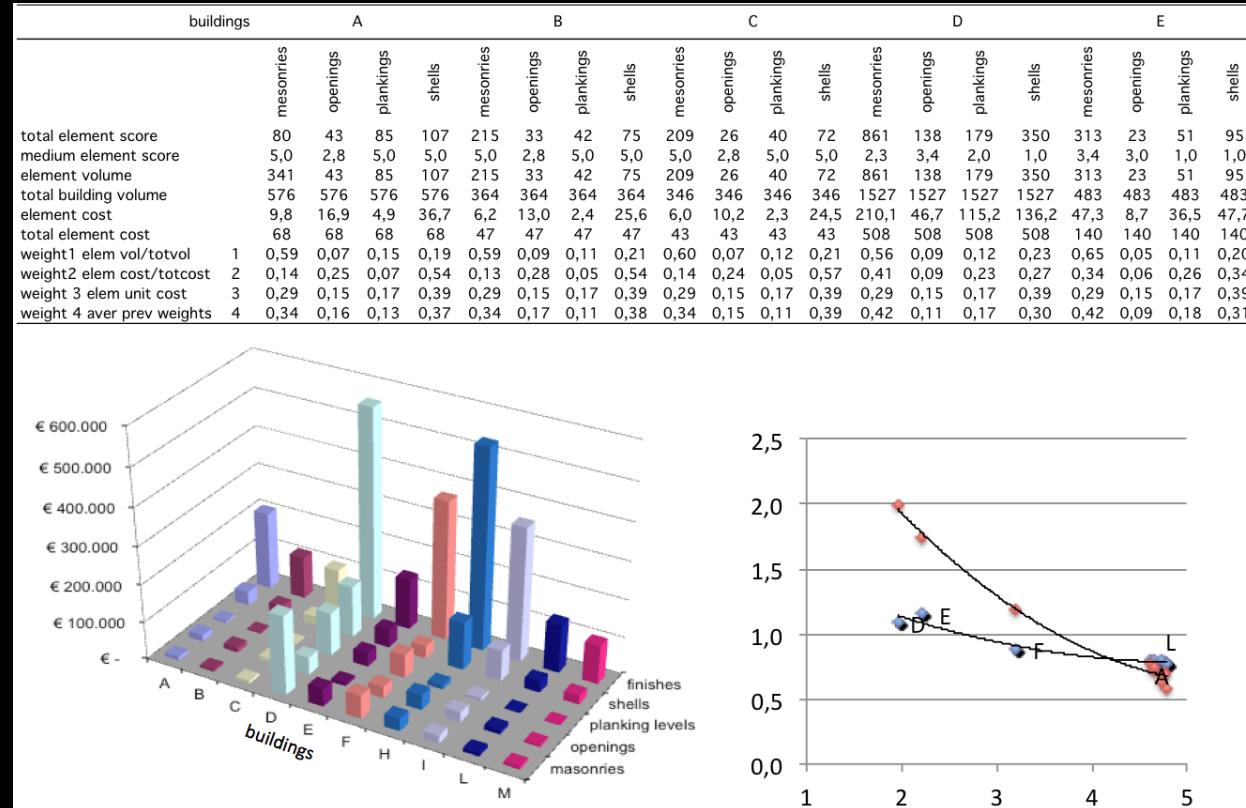
The tools support students in:

>Building cost calculation

- building analysis and survey;
- logical and topological description;
- listing the activities from the official price list;
- project input;
- **cost calculation;**
- **sensitiveness analysis.**

>Real estate market appraisal

- real estate market survey;
- data input;
- assessment;
- appraisal;
- general report editing



2. Students' practice exercises subjects: **real estate market analysis**

The tools support students in:

>Building cost calculation

- building analysis and survey;
- logical and topological description;
- listing the activities from the official price list;
- project input;
- cost calculation;
- sensitiveness analysis.

>Real estate market appraisal

- **real estate market survey;**
- data input;
- assessment;
- appraisal;
- general report editing



Corso di Estimo e di esercizio professionale A.A. 2009/2010_Docente: Arch. Salvatore Giuffrida_Studenti: L. Scuderi, C. Seminero

Scheda A	Rilevamento immobili urbani	RESIDENZA
Immobile di studio n. 10	Ubicazione	via delle Maestranze n. 112
Dati di mercato		Vista rappresentativa
Fonte dati		
Agenzia:		
proprietario		
Locatario		
Altro		
Immobile locato		
Anno di costruzione		
Prezzo di vendita		
Canone d'affitto mensile		
Canone d'affitto/vano		
Caratteristiche dell'immobile		
Consistenza		
Consistenza in vani		
Superficie calpestabile		
Numero piano		
Servizi igienici		
Terrazze/balconi		
Cucina abitabile		
Ripostiglio		
Accessori (box, cantine, etc.)		
Caratteristiche estrinseche		Localizzazione geografica
Complessità e forma urbana		
Dotazioni urbanistiche		
Accessibilità		
Caratteristiche microambientali		
Caratteristiche intrinseche		
Panoramicità		
Prospicienza		
Luminosità		
Caratteristiche tecnologiche		
Finiture (infissi, rivestimenti)		
Impianti idrici		
Impianti elettrici		
Impianti di condizionamento		
Stato di conservazione edificio		
Stato di conservazione unità		
Dotazione servizi condominiali		
Ascensore		
Portiere		
Spazi gioco o a verde		
Posto auto scoperto		
Altro		
Pregio architettonico		
Tipologia (distribuzione)		
Caratteristiche d'uso		
Elementi di linguaggio		
Pregio materiali e finiture		
Valore testimoniale		

Localizzazione geografica



2. Students' practice exercises subjects: real estate market analysis

The tools support students in:

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advertisement reference	location		price	rooms	facilities	total rooms	unit price (€/room)	prezzi/vano/ktot	inside area	outside area	conventional area (sq.m)	unit price (€/s.qm)	prezzi/mq/ktot
493 e 510	corso matteotti	1	€ 230.000	4,0	2,0	4,5	€ 51.111	€ 16.496	150		150	€ 1.533	€ 495
T606	corso matteotti, 36	2	€ 370.000	6,5	1,0	6,8	€ 54.815	€ 17.310	175		175	€ 2.114	€ 668
T104	lungomare Alfeo, 20	3	€ 210.000	1,5	1,0	1,8	€ 120.000	€ 31.271	45		45	€ 4.667	€ 1.216
522	lungomare Elio Vittorini, 38	4	€ 590.000	3,0	3,0	4,3	€ 138.824	€ 32.559	120	120	144	€ 4.097	€ 961
01	piazza cesare battisti	5	€ 300.000	3,0	3,0	3,8	€ 80.000	€ 18.726	100		100	€ 3.000	€ 702
PGC01	via alagona, 6	6	€ 117.500	2,0	1,0	2,3	€ 52.222	€ 17.498	50		50	€ 2.350	€ 787
T208	via alagona, 33	7	€ 35.000	1,0	1,0	1,3	€ 28.000	€ 14.723	30		30	€ 1.167	€ 613
13000KL (423622)	via amalfitania	8	€ 120.000	2,0	1,0	2,3	€ 53.333	€ 16.904	50		50	€ 2.400	€ 761
T223	via amalfitania, 66	9	€ 70.000	2,0	1,0	2,3	€ 31.111	€ 12.414	53		53	€ 1.321	€ 527
T218	via arizzi, 4	10	€ 110.000	2,0	2,5	2,6	€ 41.905	€ 16.231	80	8	82,8	€ 1.329	€ 515
500KL (423602)	via atanasio, 1	11	€ 40.000	1,0	1,0	1,3	€ 32.000	€ 14.665	35		35	€ 1.143	€ 524
V 40	via consiglio reginale	12	€ 360.000	5,0	2,5	6,1	€ 58.776	€ 16.104	110	30	120,5	€ 2.988	€ 819
EK-40249114	via del crocifisso	13	€ 190.000	3,0	2,0	3,5	€ 54.286	€ 19.161	80	20	84	€ 2.262	€ 798
T701	via delle grazie, 18	14	€ 110.000	7,0	3,0	7,8	€ 14.194	€ 8.151	200	30	206	€ 534	€ 307
T227N	via delle grazie, 20	15	€ 220.000	2,5	2,0	3,0	€ 73.333	€ 29.805	95		95	€ 2.316	€ 941
c. matteotti -(426837)	via Dione	16	€ 90.000	2,5	1,0	2,8	€ 32.727	€ 16.786	80		80	€ 1.125	€ 577
casa.it	via Dione	17	€ 115.000	4,0	2,5	4,6	€ 24.865	€ 11.241	100		100	€ 1.150	€ 520
T515	via logoteta, 18	18	€ 285.000	6,0	5,0	7,3	€ 39.310	€ 13.394	165		165	€ 1.727	€ 589
404	via maestranza	19	€ 280.000	4,0	2,0	4,5	€ 62.222	€ 16.168	140	40	148	€ 1.892	€ 492
EK-43271037	via resalibera, 16	20	€ 65.000	2,0	1,0	2,3	€ 28.889	€ 10.519	48		48	€ 1.354	€ 493
T108	via resalibera, 58	21	€ 55.000	1,0	1,0	1,3	€ 44.000	€ 16.315	30		30	€ 1.833	€ 680
V 32	via mirabella	22	€ 115.000	2,0	1,0	2,3	€ 51.111	€ 17.838	50		50	€ 2.300	€ 803
450KL (423603)	via vittorio veneto	23	€ 235.000	6,5	1,5	6,9	€ 34.182	€ 11.378	180		180	€ 1.306	€ 435
144	via vittorio veneto	24	€ 150.000	3,0	1,0	3,3	€ 46.154	€ 11.112	60	4	61,4	€ 2.443	€ 588
EK-44024968	via vittorio veneto	25	€ 150.000	3,5	1,0	3,8	€ 40.000	€ 12.342	80		80	€ 1.875	€ 579
sr2013/49	via vittorio veneto, 14	26	€ 595.000	3,0	2,0	4,0	€ 148.750	€ 35.314	100	100	120	€ 4.958	€ 1.177
una casa tipica con	vicolo dell'arco, 7	27	€ 510.000	7,0	4,0	8,0	€ 63.750	€ 16.934	150	65	163	€ 3.129	€ 831
1472	zona tempio di apollo	28	€ 630.000	6,0	3,0	6,8	€ 93.333	€ 25.586	250		250	€ 2.520	€ 691
70460558-7046	corso matteotti, 45	29	€ 750.000	7,0	4,5	8,1	€ 92.308	€ 27.779	220		220	€ 3.409	€ 1.026
EK-39253222	ronco l a san cristoforo, 7	30	€ 145.000	4,0	1,0	4,3	€ 34.118	€ 14.389	80		80	€ 1.813	€ 764



2. Students' practice exercises subjects: real estate market assessments

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>Building cost calculation

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- listing the activities from the official price list;
- project input;
- cost calculation;
- sensitiveness analysis.

>Real estate market appraisal

- real estate market survey;
- data input;
- **assessment;**
- appraisal;
- general report editing

location	location					intrinsic			technological				architectural			aggregated scores			
	facilities	Accessibility	parking	environmental quality	perceptive quality	floor	brightness	perspective	construction	finishes	condition	technology	comfort	architecture	decorum	location	intrinsic	technological	architectural
corso matteotti	5,0	5,0	1,0	4,0	4,0	2,0	3,0	1,0	2,5	3,5	3,0	3,0	3,5	4,0	4,0	2,5	1,5	2,3	2,5
corso matteotti, 36	5,0	5,0	1,0	4,0	4,0	4,0	4,0	1,0	3,0	3,5	2,5	2,5	3,0	3,0	3,5	2,1	1,3	2,6	2,7
lungomare Alfeo, 20	5,0	5,0	1,0	5,0	5,0	2,0	4,5	5,0	3,0	3,0	3,0	3,0	3,5	5,0	3,5	2,8	1,2	2,8	2,8
lungomare Elio Vittorini, 38	5,0	5,0	5,0	4,0	4,5	3,0	5,0	5,0	3,0	3,0	4,0	4,0	4,0	3,0	3,5	2,6	1,0	2,6	2,7
piazza cesare battisti	4,0	3,0	5,0	4,0	4,0	2,0	5,0	5,0	4,0	4,0	5,0	5,0	4,5	3,0	4,0	2,9	1,3	2,6	2,7
via alagona, 6	2,5	3,0	1,0	3,0	3,0	2,0	3,0	1,0	3,5	4,0	5,0	5,0	4,0	2,0	3,5	2,8	1,5	2,6	3,0
via alagona, 33	2,5	3,0	1,0	3,0	3,0	1,0	2,0	1,0	2,0	2,0	1,0	1,0	3,0	2,0	2,5	2,3	1,4	3,5	3,2
via amalfitania	3,0	3,5	1,0	4,0	3,5	4,0	2,5	1,0	2,5	2,5	5,0	5,0	4,0	3,5	3,5	2,5	1,6	3,8	3,1
via amalfitania, 66	3,0	3,5	1,0	4,0	3,5	3,0	2,0	1,0	2,5	2,5	2,0	2,0	3,0	3,5	4,0	2,0	1,7	4,0	3,0
via arizzi, 4	1,5	1,5	1,0	3,0	3,5	2,0	2,5	1,0	4,0	4,0	4,0	4,0	4,0	1,0	3,0	2,7	1,9	3,6	2,4
via atanasio, 1	2,5	2,5	1,0	3,0	3,0	1,0	2,0	1,0	2,5	2,5	2,5	2,5	3,0	1,0	3,5	2,7	1,5	3,7	2,4
via consiglio reginale	4,5	5,0	1,0	4,0	4,0	2,0	4,0	1,0	4,0	4,0	5,0	5,0	5,0	4,0	4,0	2,2	1,9	3,3	2,5
via del crocifisso	3,0	3,5	1,0	3,5	3,5	3,0	2,5	1,0	2,5	2,5	4,0	4,0	4,0	2,0	3,5	2,2	1,7	3,5	2,7
via delle grazie, 18	2,0	2,0	1,0	3,0	3,0	2,5	2,0	1,0	1,0	1,0	1,0	1,0	4,0	1,0	3,5	2,2	1,8	3,1	2,0
via delle grazie, 20	2,0	2,0	1,0	3,0	3,0	2,5	3,0	1,0	2,5	2,5	4,0	3,5	3,0	1,0	3,5	3,7	2,1	4,6	4,6
via Dione	2,0	2,5	1,0	3,5	3,5	2,0	2,0	1,0	2,0	2,0	1,0	1,0	3,0	2,0	3,0	3,7	2,4	4,2	4,6
via Dione	2,0	2,5	1,0	3,5	3,5	2,0	2,0	1,0	2,0	2,0	2,5	2,5	3,0	1,0	4,0	4,0	2,3	4,8	4,1
via logoteta, 18	3,0	3,5	1,0	4,0	3,0	2,0	2,5	1,0	3,0	3,0	4,0	4,0	4,5	3,0	2,5	4,1	2,3	4,3	4,3
via maestranza	5,0	5,0	2,0	4,0	3,5	3,0	4,0	1,0	4,0	5,0	5,0	5,0	4,0	4,0	5,0	3,3	3,0	4,6	4,3
via resalibera, 16	2,5	3,0	1,0	3,5	3,5	3,0	2,5	1,0	2,5	2,5	4,5	4,0	3,0	1,0	2,5	2,8	2,5	4,8	4,8
via resalibera, 58	2,5	3,0	1,0	3,5	3,5	2,0	2,0	1,0	2,0	2,0	5,0	4,5	3,0	1,0	2,5	2,5	1,8	4,5	3,4
via mirabella	2,0	2,0	1,0	3,0	3,0	2,0	2,5	1,0	4,0	4,0	5,0	5,0	4,0	3,0	3,0	2,2	1,9	4,6	3,3
via vittorio veneto	4,0	4,5	4,0	4,0	3,5	2,0	2,5	1,0	3,0	3,0	2,0	2,0	4,0	3,0	5,0	2,2	1,7	4,6	3,6
via vittorio veneto	4,0	4,5	4,0	4,0	3,5	3,0	3,5	5,0	3,0	4,0	5,0	5,0	3,5	3,0	3,0	2,3	1,7	5,0	3,0
via vittorio veneto	4,0	4,5	4,0	4,0	3,5	2,0	3,0	1,0	3,0	3,0	3,5	3,0	3,5	3,0	3,0	3,1	2,1	4,0	3,8
via vittorio veneto, 14	4,0	4,5	4,0	4,0	3,5	3,0	5,0	5,0	3,0	3,0	5,0	5,0	4,0	3,0	3,5	3,0	2,0	4,0	3,7
vicolo dell'arco, 7	2,5	2,5	1,0	3,5	3,5	4,0	4,5	5,0	4,0	4,5	5,0	5,0	5,0	2,0	3,5	3,1	1,7	3,6	3,9
zona tempio di apollo	2,5	3,0	3,0	4,0	3,0	5,0	5,0	1,0	4,0	4,0	5,0	5,0	5,0	3,0	3,5	3,1	2,1	4,0	3,8
corso matteotti, 45	5,0	5,0	1,0	4,0	3,5	3,0	4,0	1,0	3,0	3,0	3,5	3,5	5,0	3,5	3,0	3,0	2,0	4,0	3,7
ronco l a san cristoforo, 7	2,0	2,0	1,0	3,0	3,0	2,0	3,0	1,0	3,0	3,5	3,0	3,0	2,0	2,0	2,0	3,1	1,7	3,6	3,9



2. Students' practice exercises subjects: real estate market appraisal

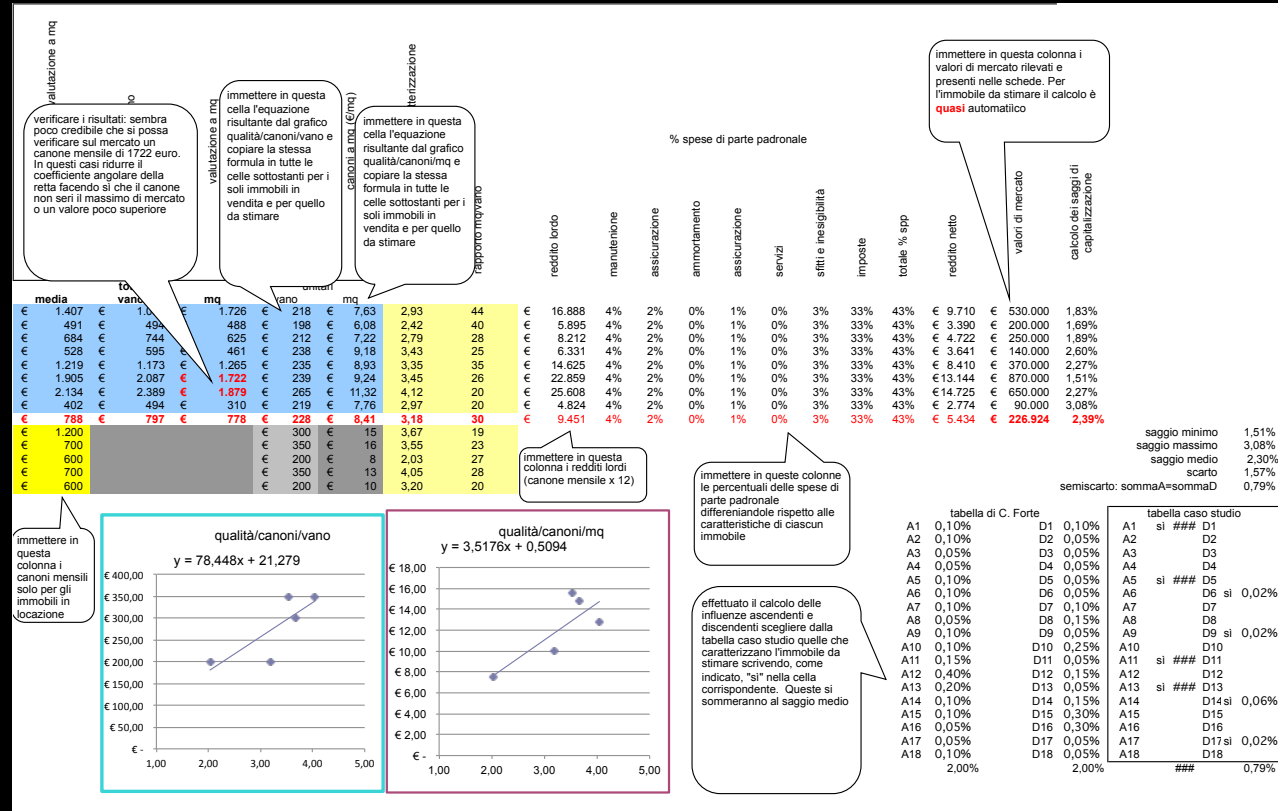
The tools support students in:

>Building cost calculation

- building analysis and survey;
- logical and topological description;
- listing the activities from the official price list;
- project input;
- cost calculation;
- sensitivity analysis.

>Real estate market appraisal

- real estate market survey;
- data input;
- assessment;
- appraisal;



3. Semantic chains from the **cap rate perspective**

Real estate market:
a **semantic chain**

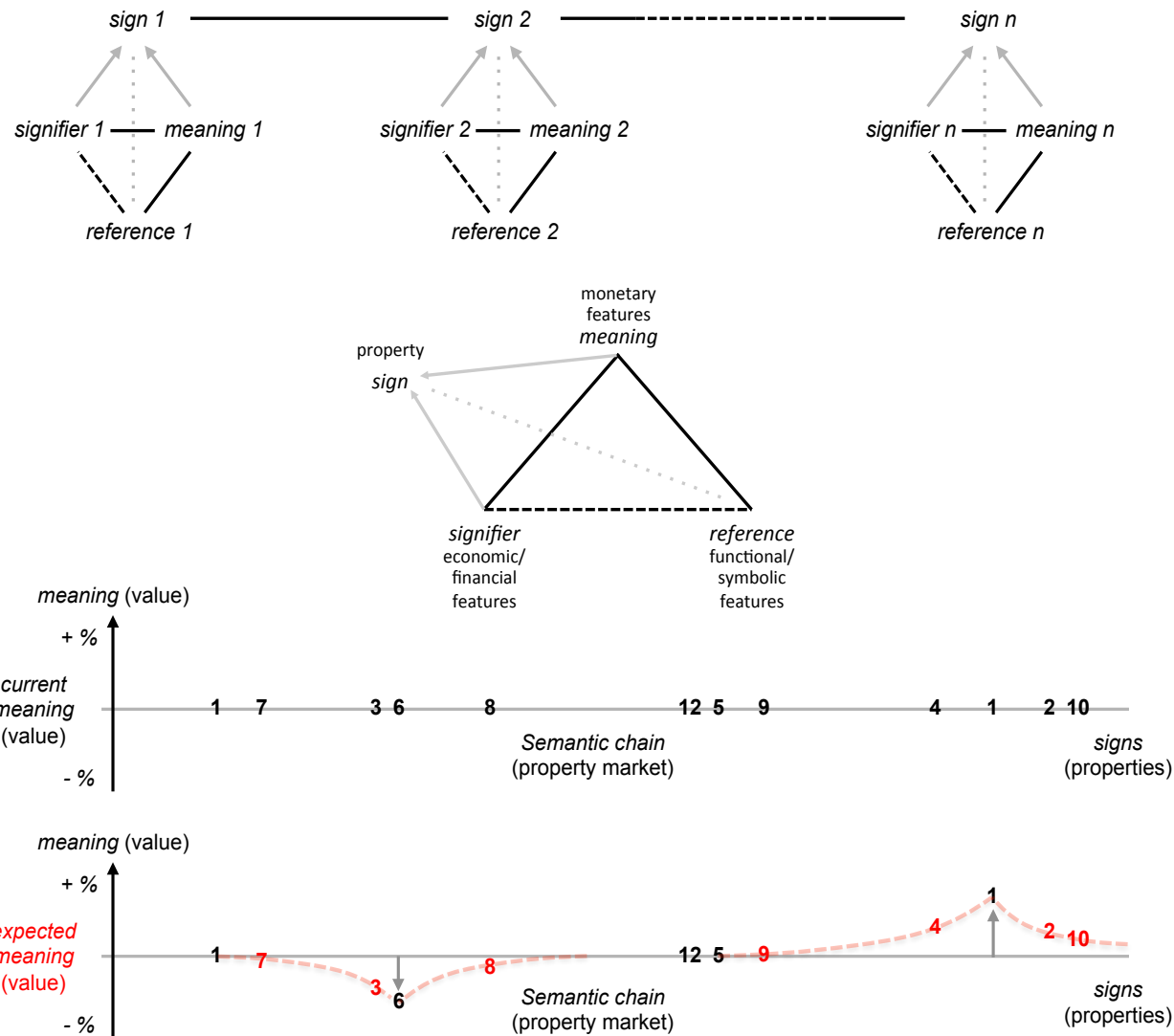
A system of **signs**
meanings are connected by:
inner (vertical) linkages
outer (horizontal) linkages

Assuming
Property building characteristics price
Sign
reference
signifier
meaning

Values vertical linkage;
Prices horizontal linkage

When the **price** of a property changes, the **values** of similar properties change due to this similarity

Cap rate mostly takes into account the expectations about prices evolution



3. Cap rates probability and possibility

Cap rate:

beauty/capital.

imperfect market:

- prices/values;
- possibility/probability

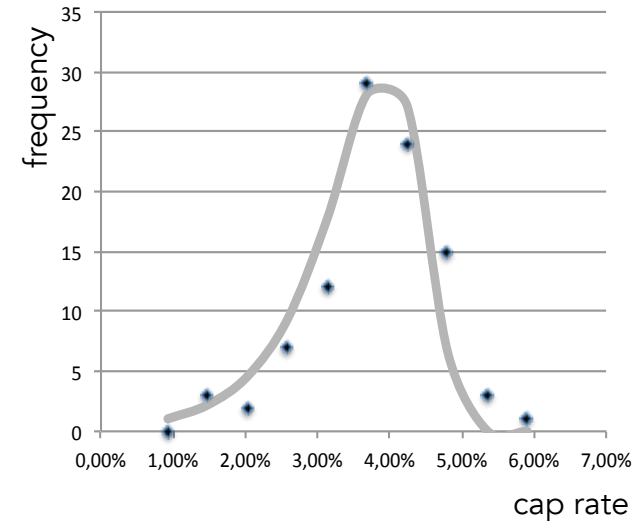
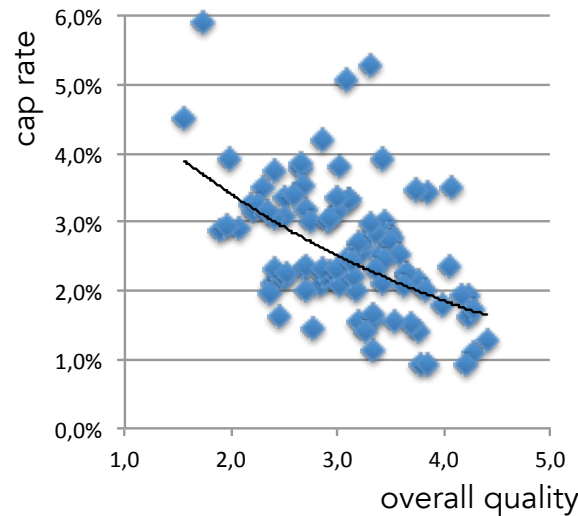
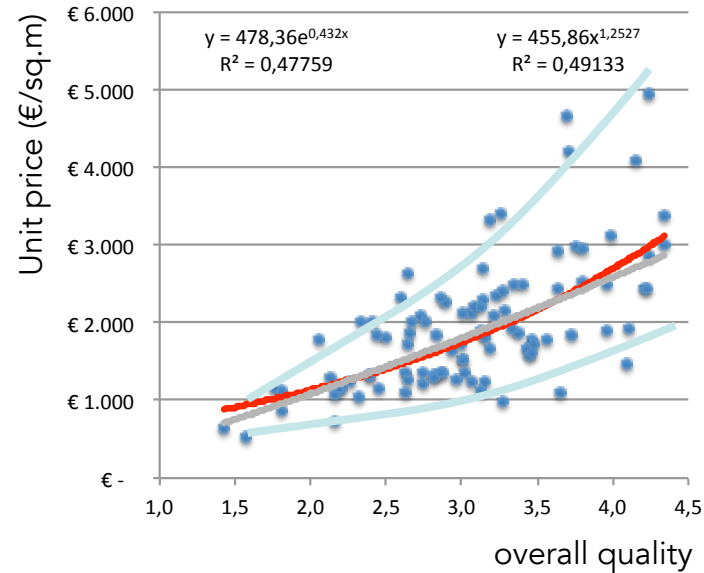
clustering analysis:

quality elasticity of cap rates for each market segment (cluster).

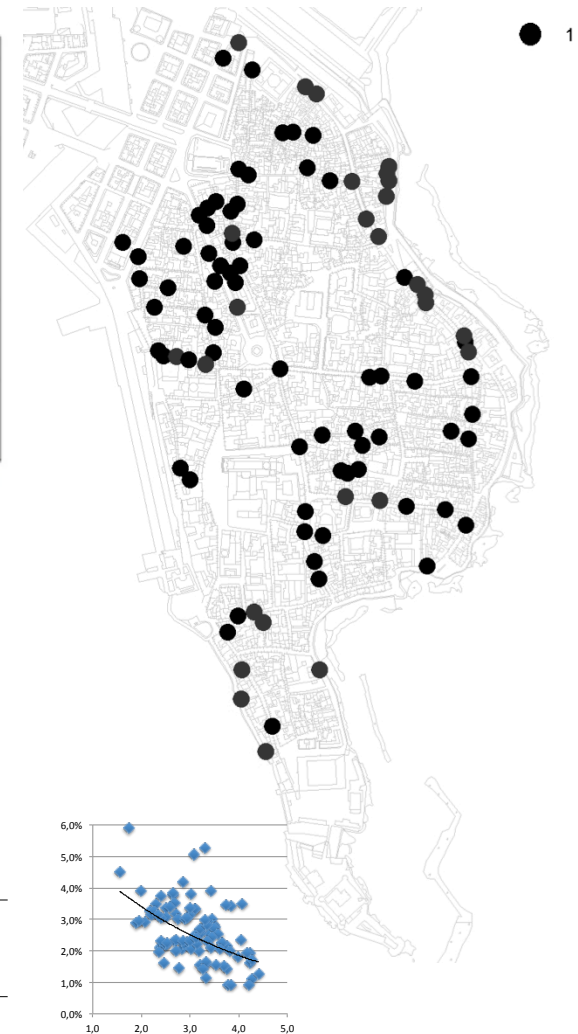
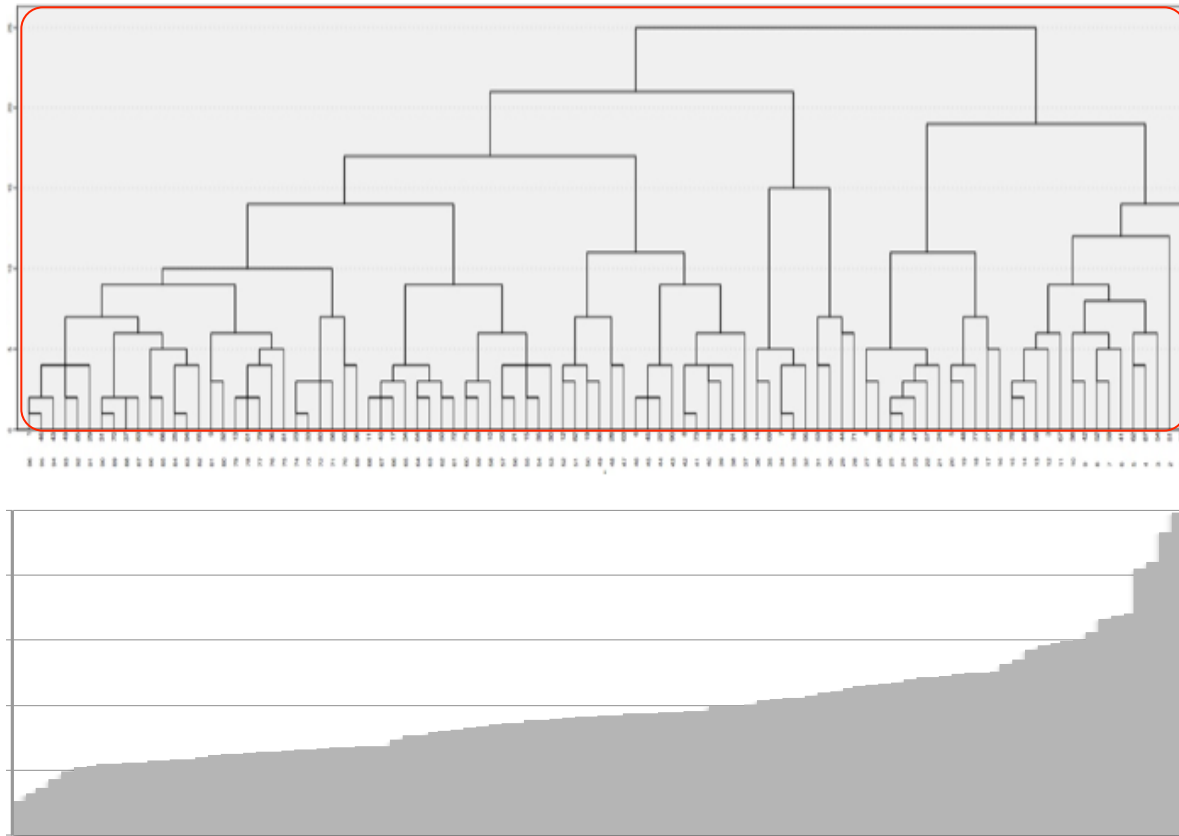
Clusters: semantic chains

Cap rate perspective:

heterogeneity
eccentricity
improbable values
out of range cap rates



3. Clustering and cap rate analysis

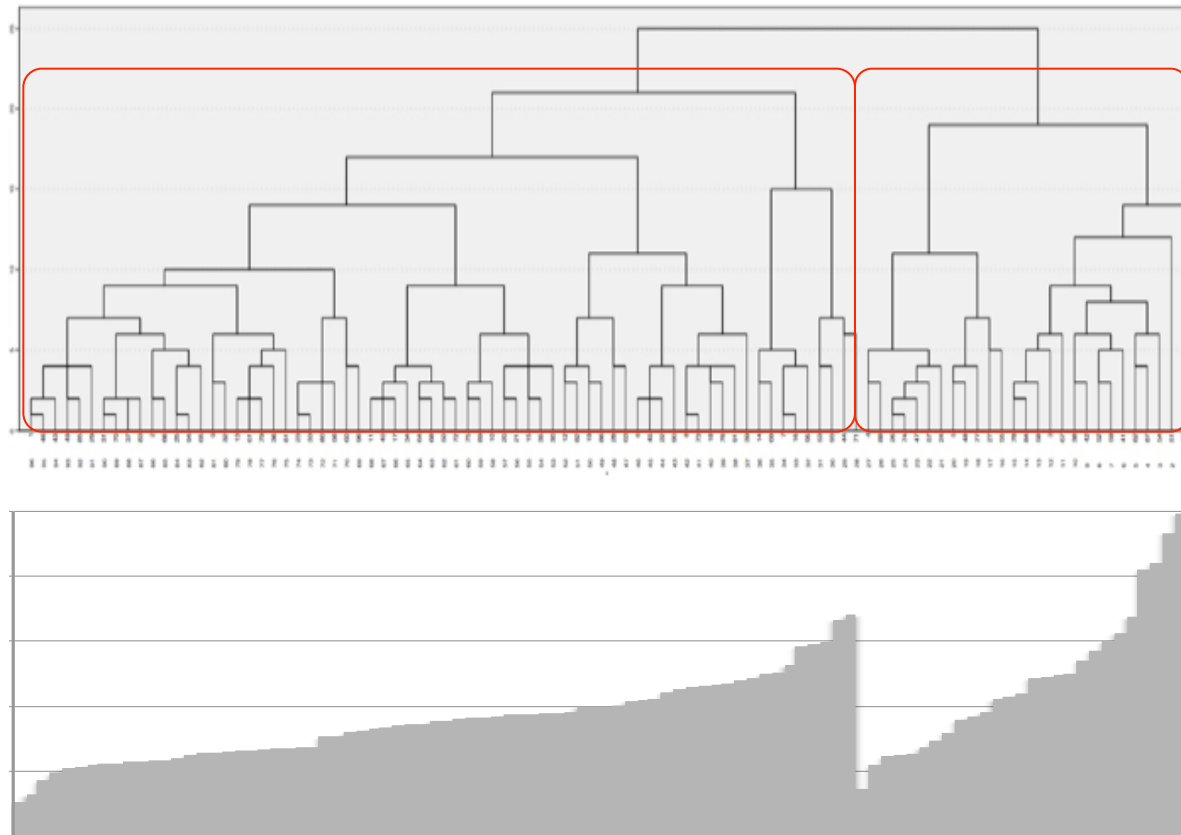


R² calculated by using room unit prices

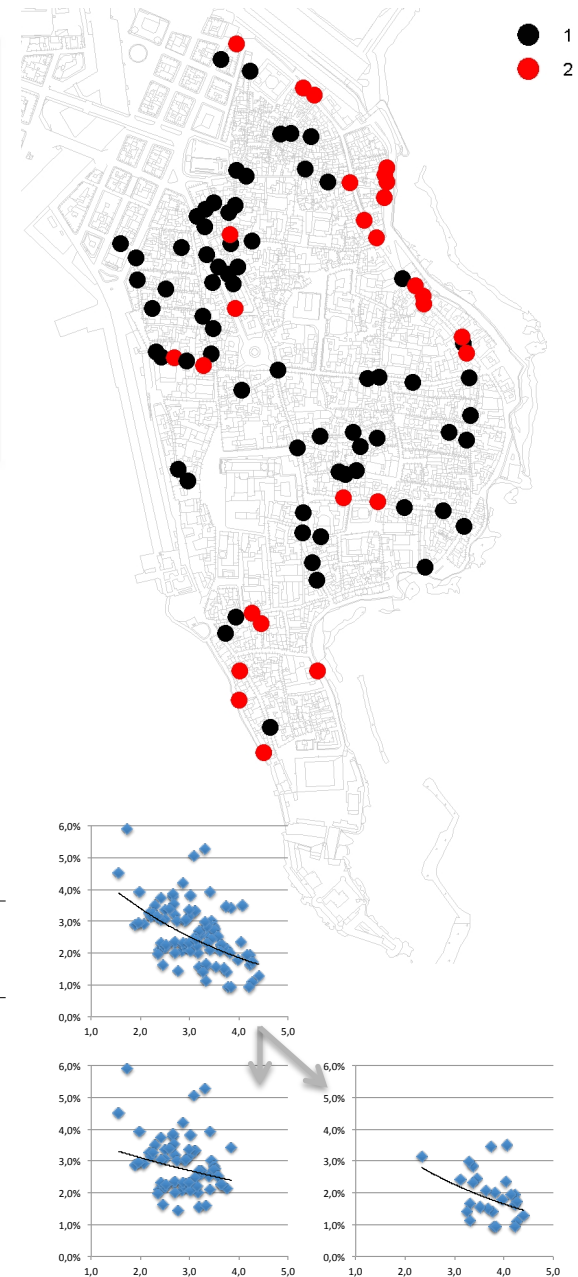
R² calculated by using sq.m. unit prices

	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
cut 1	0,51	-	-	-	-	-	-	-	0,49	-	-	-	-	-	-	-
cut 2	0,50	0,48	-	-	-	-	-	-	0,47	0,47	-	-	-	-	-	-
cut 3	0,41	0,91	0,48	-	-	-	-	-	0,32	0,86	0,47	-	-	-	-	-
cut 4	0,41	0,91	0,36	0,56	-	-	-	-	0,32	0,86	0,47	0,46	-	-	-	-
cut 5	0,28	0,81	0,91	0,36	0,56	-	-	-	0,15	0,45	0,86	0,47	0,46	-	-	-
cut 6	0,28	0,81	1,00	1,00	0,36	0,56	-	-	0,15	0,45	1,00	1,00	0,47	0,46	-	-
cut 7	0,18	0,31	0,81	1,00	1,00	0,36	0,56	-	0,09	0,29	0,45	1,00	1,00	0,47	0,46	-
cut 8	0,18	0,31	1,00	0,83	1,00	1,00	0,36	0,56	0,09	0,29	0,70	0,56	1,00	1,00	0,47	0,46

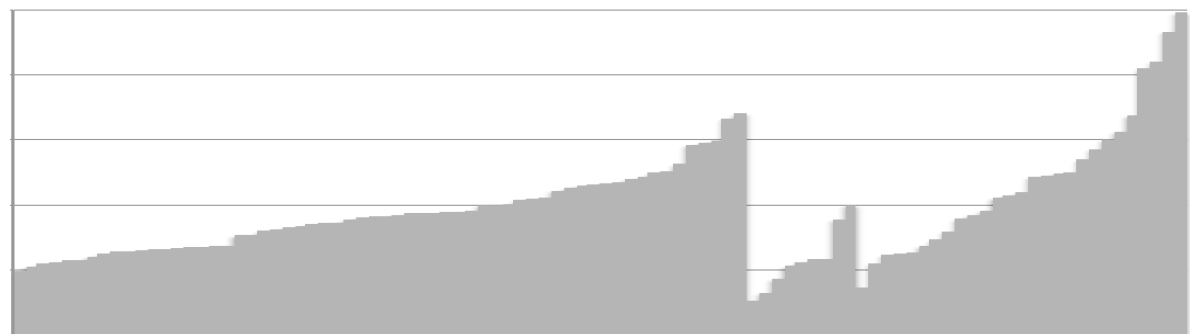
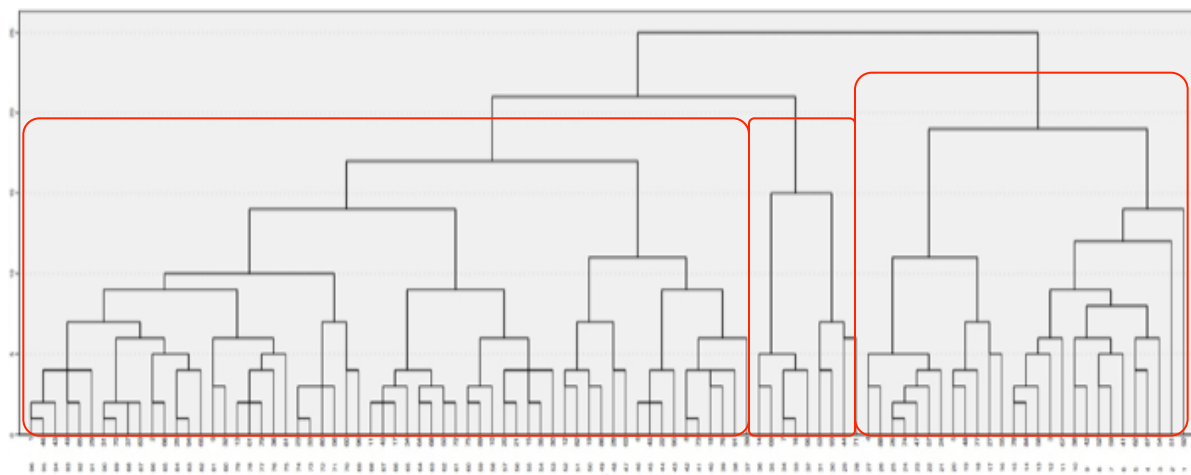
3. Clustering and cap rate analysis



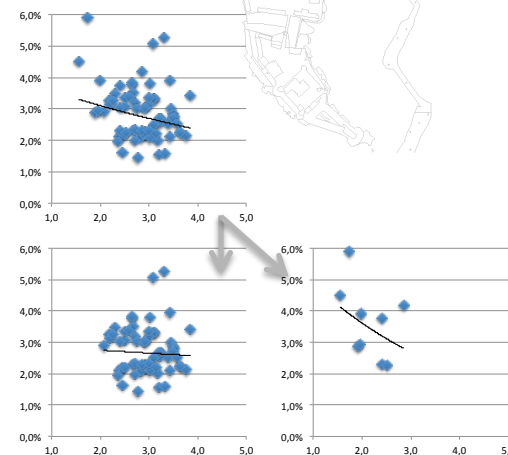
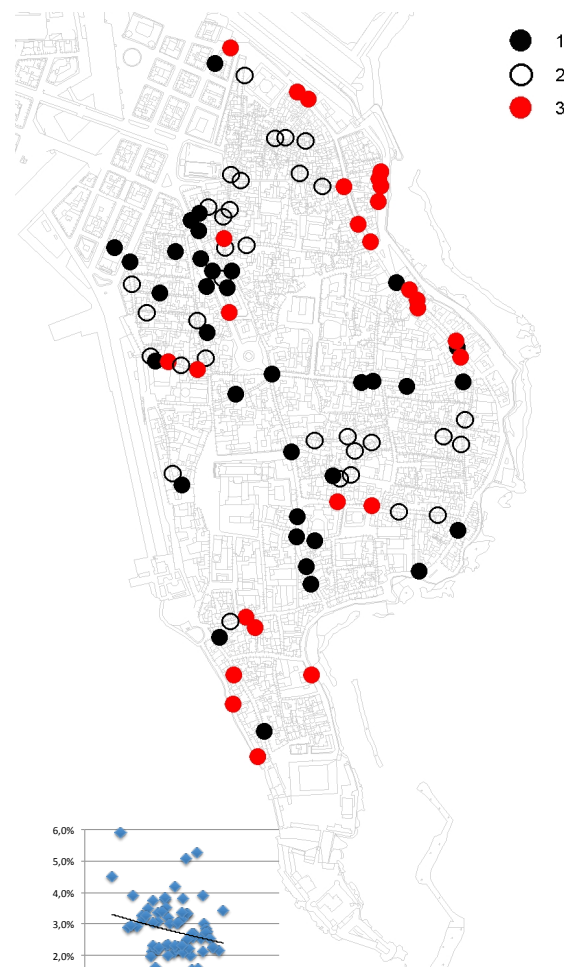
	R ² calculated by using room unit prices								R ² calculated by using sq.m. unit prices							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
cut 1	0,51	-	-	-	-	-	-	-	0,49	-	-	-	-	-	-	-
cut 2	0,50	0,48	-	-	-	-	-	-	0,47	0,47	-	-	-	-	-	-
cut 3	0,41	0,91	0,48	-	-	-	-	-	0,32	0,86	0,47	-	-	-	-	-
cut 4	0,41	0,91	0,36	0,56	-	-	-	-	0,32	0,86	0,47	0,46	-	-	-	-
cut 5	0,28	0,81	0,91	0,36	0,56	-	-	-	0,15	0,45	0,86	0,47	0,46	-	-	-
cut 6	0,28	0,81	1,00	1,00	0,36	0,56	-	-	0,15	0,45	1,00	1,00	0,47	0,46	-	-
cut 7	0,18	0,31	0,81	1,00	1,00	0,36	0,56	-	0,09	0,29	0,45	1,00	1,00	0,47	0,46	-
cut 8	0,18	0,31	1,00	0,83	1,00	1,00	0,36	0,56	0,09	0,29	0,70	0,56	1,00	1,00	0,47	0,46



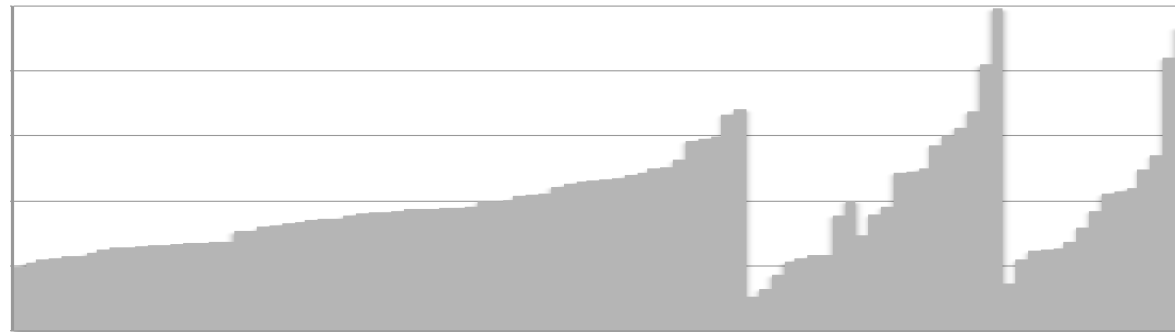
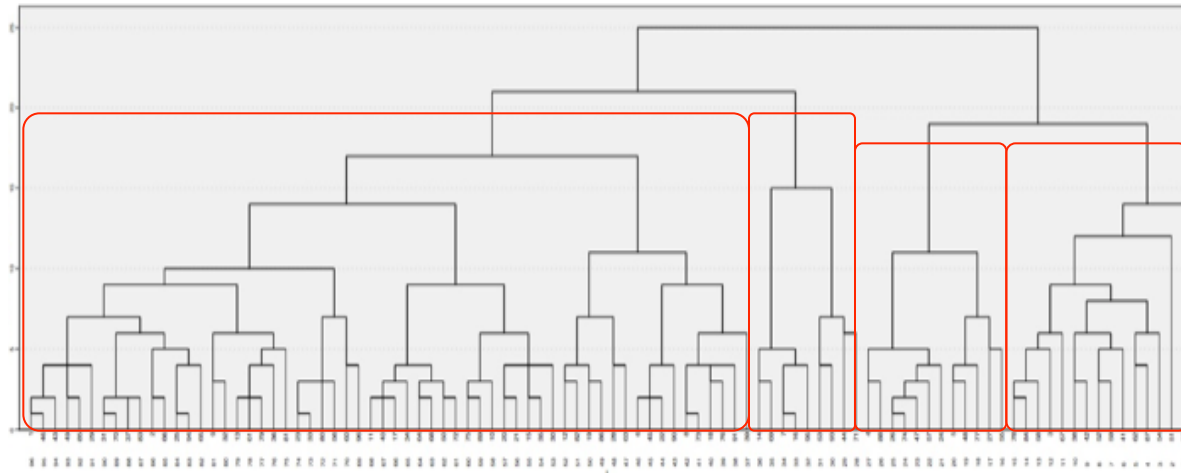
3. Clustering and cap rate analysis



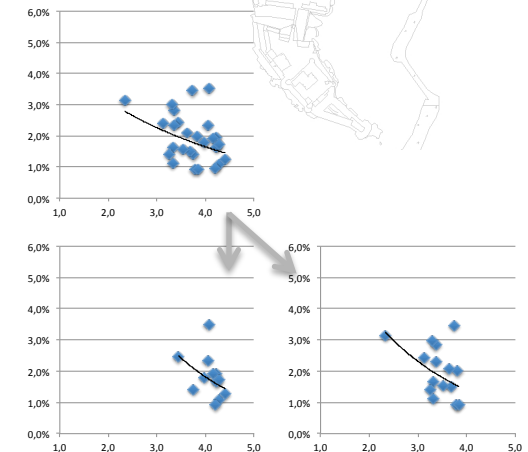
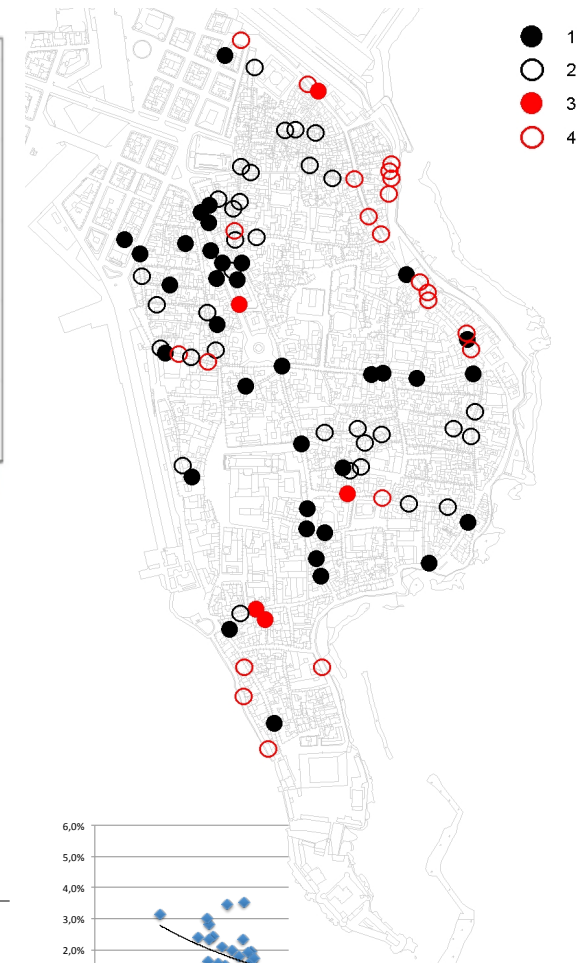
	R ² calculated by using room unit prices								R ² calculated by using sq.m. unit prices							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
cut 1	0,51	-	-	-	-	-	-	-	0,49	-	-	-	-	-	-	-
cut 2	0,50	0,48	-	-	-	-	-	-	0,47	0,47	-	-	-	-	-	-
cut 3	0,41	0,91	0,48	-	-	-	-	-	0,32	0,86	0,47	-	-	-	-	-
cut 4	0,41	0,91	0,36	0,56	-	-	-	-	0,32	0,86	0,47	0,46	-	-	-	-
cut 5	0,28	0,81	0,91	0,36	0,56	-	-	-	0,15	0,45	0,86	0,47	0,46	-	-	-
cut 6	0,28	0,81	1,00	1,00	0,36	0,56	-	-	0,15	0,45	1,00	1,00	0,47	0,46	-	-
cut 7	0,18	0,31	0,81	1,00	1,00	0,36	0,56	-	0,09	0,29	0,45	1,00	1,00	0,47	0,46	-
cut 8	0,18	0,31	1,00	0,83	1,00	1,00	0,36	0,56	0,09	0,29	0,70	0,56	1,00	1,00	0,47	0,46



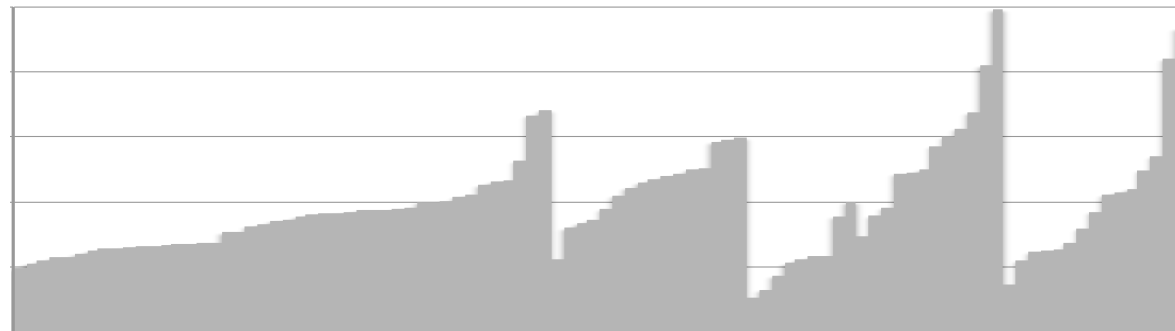
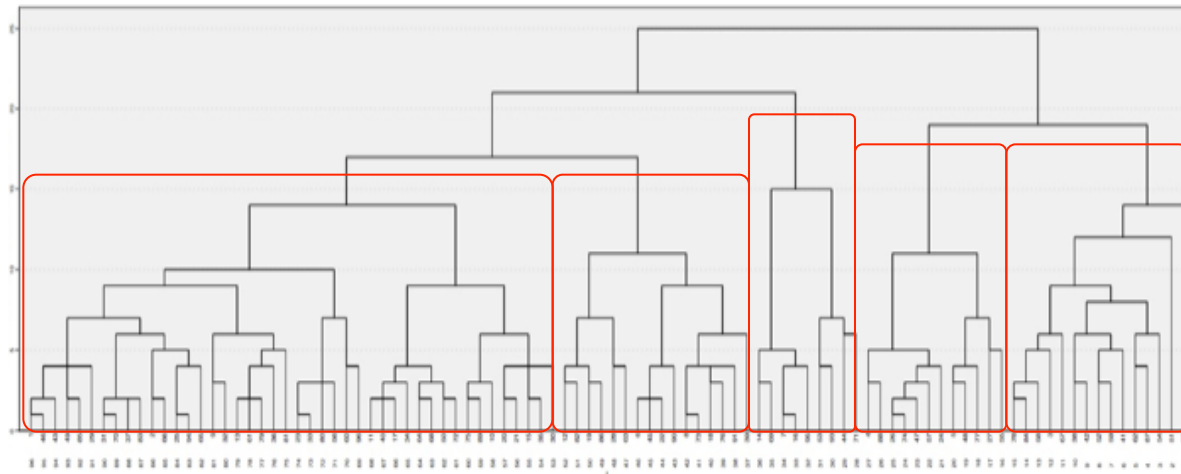
3. Clustering and cap rate analysis



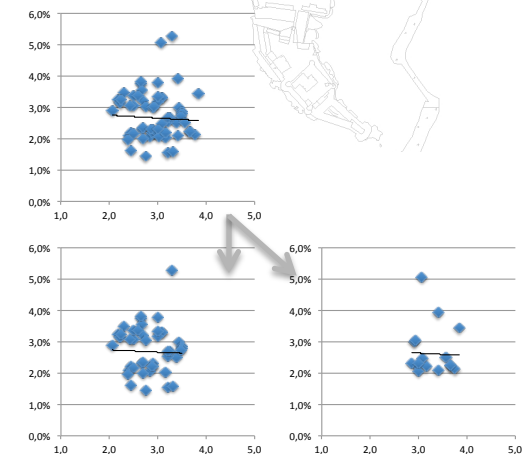
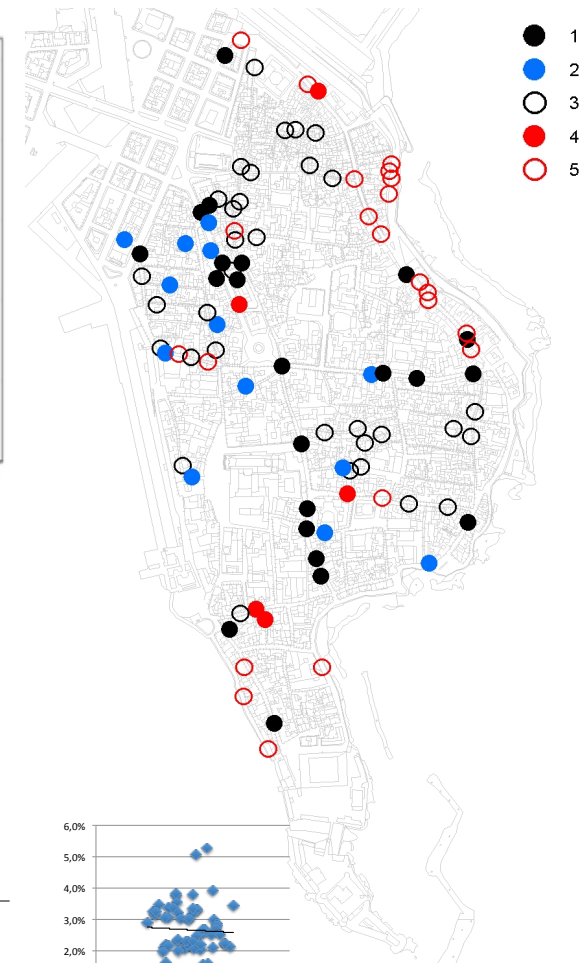
	R ² calculated by using room unit prices								R ² calculated by using sq.m. unit prices							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
cut 1	0,51	-	-	-	-	-	-	-	0,49	-	-	-	-	-	-	-
cut 2	0,50	0,48	-	-	-	-	-	-	0,47	0,47	-	-	-	-	-	-
cut 3	0,41	0,91	0,48	-	-	-	-	-	0,32	0,86	0,47	-	-	-	-	-
cut 4	0,41	0,91	0,36	0,56	-	-	-	-	0,32	0,86	0,47	0,46	-	-	-	-
cut 5	0,28	0,81	0,91	0,36	0,56	-	-	-	0,15	0,45	0,86	0,47	0,46	-	-	-
cut 6	0,28	0,81	1,00	1,00	0,36	0,56	-	-	0,15	0,45	1,00	1,00	0,47	0,46	-	-
cut 7	0,18	0,31	0,81	1,00	1,00	0,36	0,56	-	0,09	0,29	0,45	1,00	1,00	0,47	0,46	-
cut 8	0,18	0,31	1,00	0,83	1,00	1,00	0,36	0,56	0,09	0,29	0,70	0,56	1,00	1,00	0,47	0,46



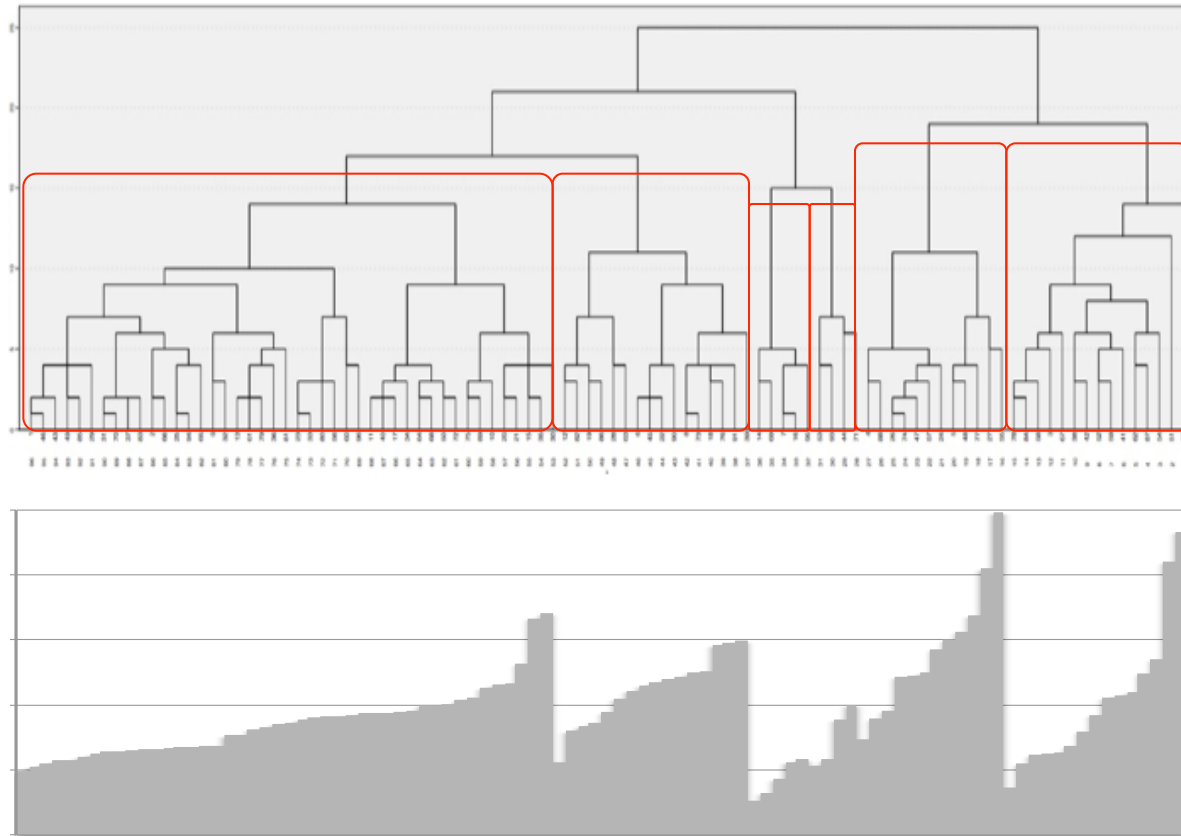
3. Clustering and cap rate analysis



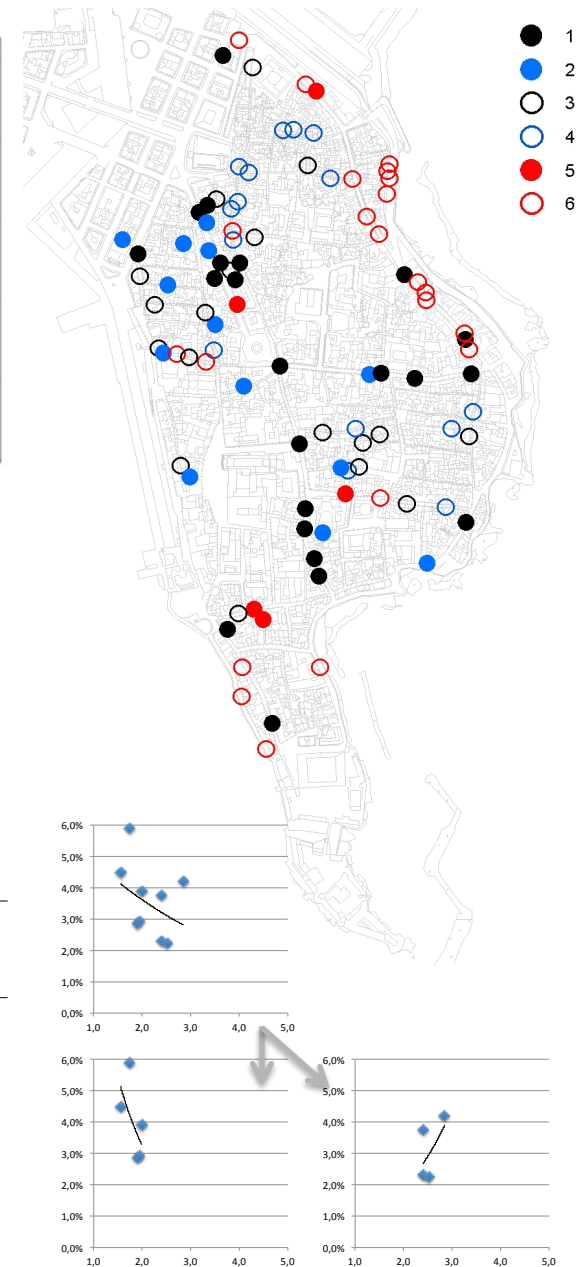
	R ² calculated by using room unit prices								R ² calculated by using sq.m. unit prices							
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cut 1	0,51	-	-	-	-	-	-	-	0,49	-	-	-	-	-	-	-
cut 2	0,50	0,48	-	-	-	-	-	-	0,47	0,47	-	-	-	-	-	-
cut 3	0,41	0,91	0,48	-	-	-	-	-	0,32	0,86	0,47	-	-	-	-	-
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cut 8	0,18	0,31	1,00	0,83	1,00	1,00	0,36	0,56	0,09	0,29	0,70	0,56	1,00	1,00	0,47	0,46



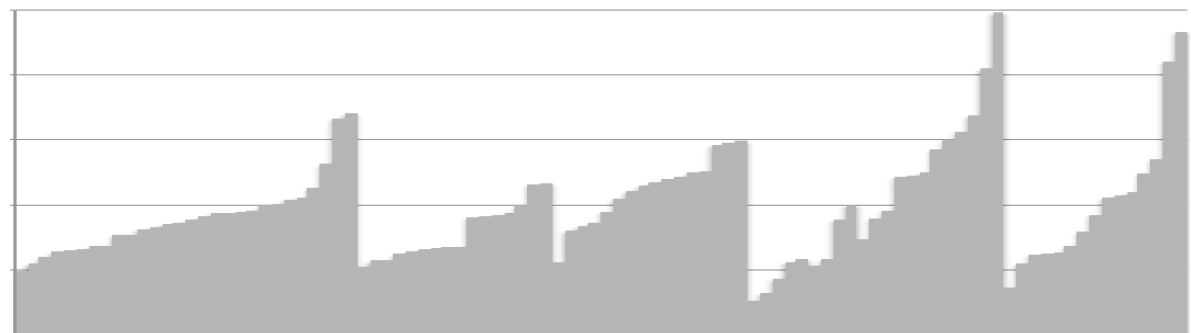
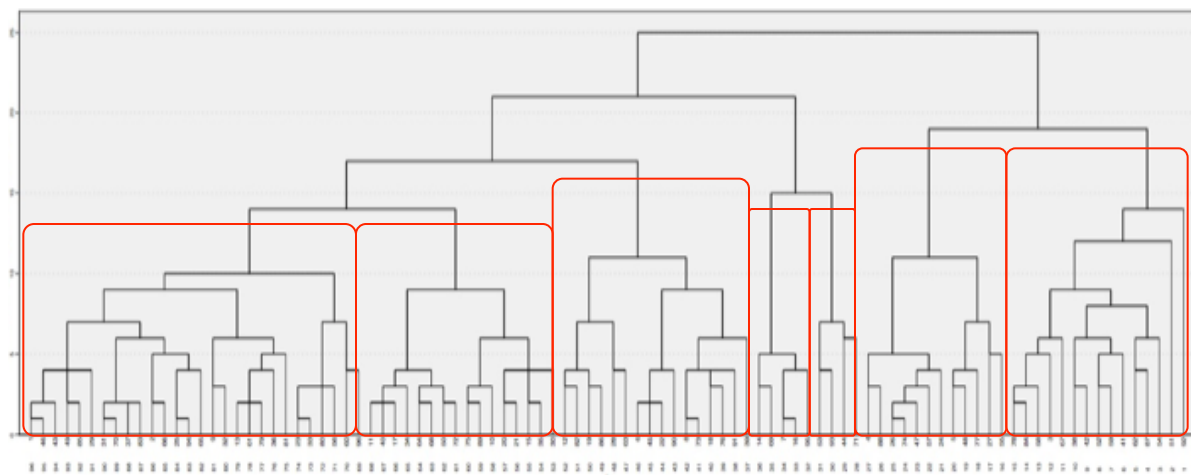
3. Clustering and cap rate analysis



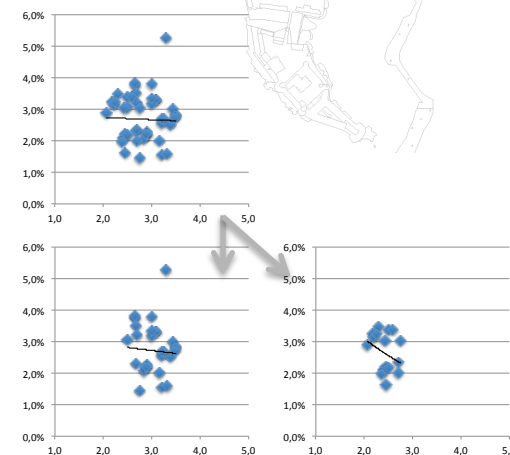
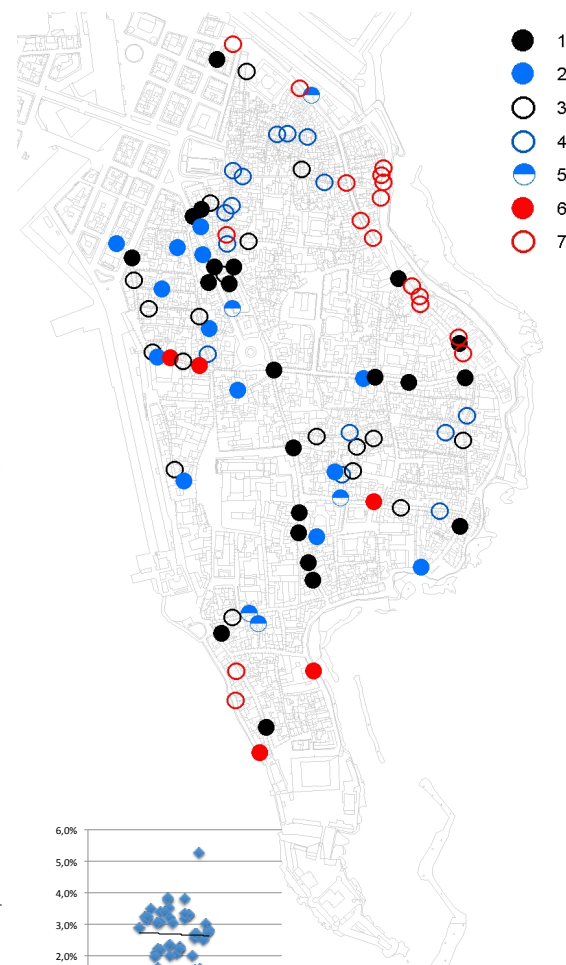
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cut 1	0,51	-	-	-	-	-	-	-	0,49	-	-	-	-	-	-	-
cut 2	0,50	0,48	-	-	-	-	-	-	0,47	0,47	-	-	-	-	-	-
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cut 8	0,18	0,31	1,00	0,83	1,00	1,00	0,36	0,56	0,09	0,29	0,70	0,56	1,00	1,00	0,47	0,46



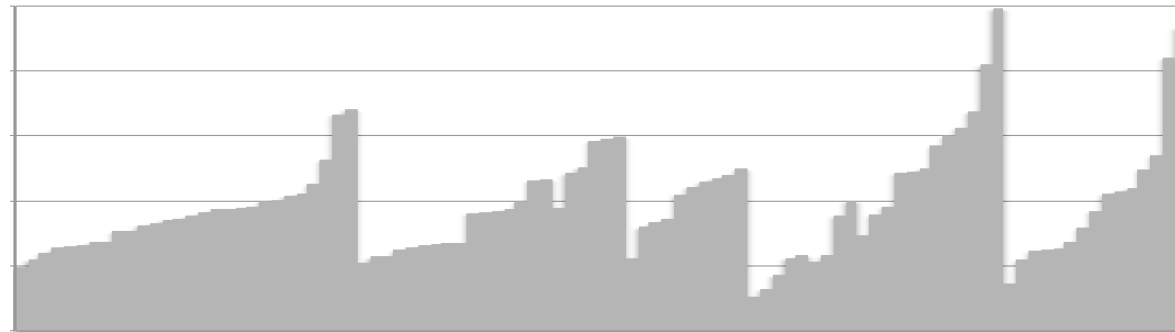
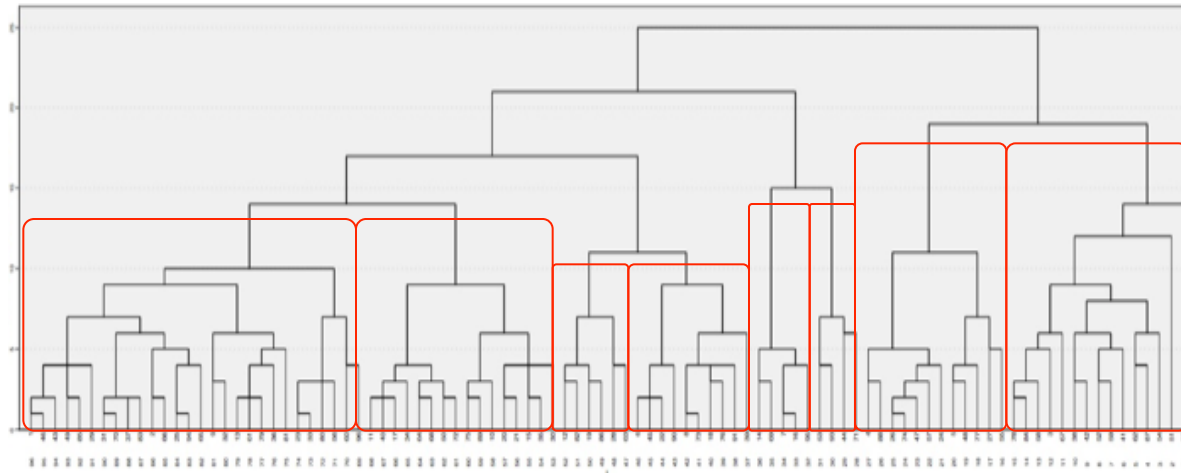
3. Clustering and cap rate analysis



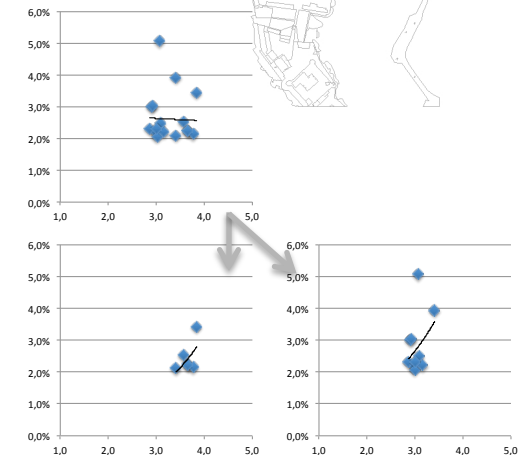
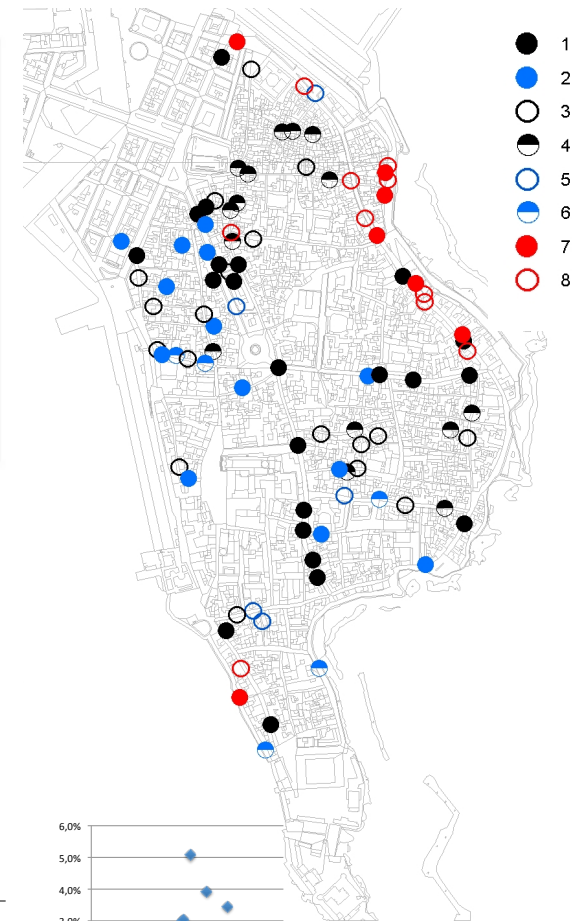
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cut 1	0,51	-	-	-	-	-	-	-	0,49	-	-	-	-	-	-	-
cut 2	0,50	0,48	-	-	-	-	-	-	0,47	0,47	-	-	-	-	-	-
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3. Clustering and cap rate analysis

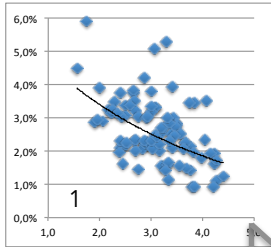


	R ² calculated by using room unit prices								R ² calculated by using sq.m. unit prices							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
cut 1	0,51	-	-	-	-	-	-	-	0,49	-	-	-	-	-	-	-
cut 2	0,50	0,48	-	-	-	-	-	-	0,47	0,47	-	-	-	-	-	-
cut 3	0,41	0,91	0,48	-	-	-	-	-	0,32	0,86	0,47	-	-	-	-	-
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cut 8	0,18	0,31	1,00	0,83	1,00	1,00	0,36	0,56	0,09	0,29	0,70	0,56	1,00	1,00	0,47	0,46

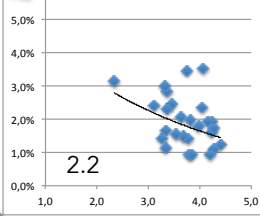
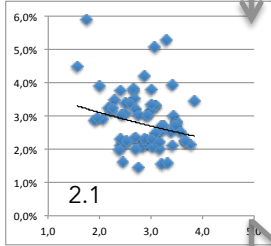


3. Scatters for each pruning hypothesis

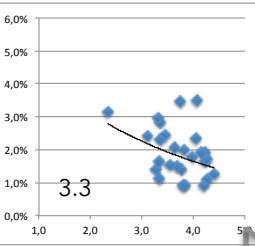
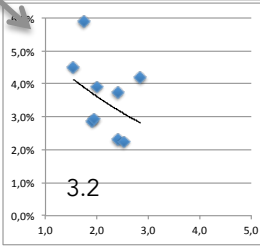
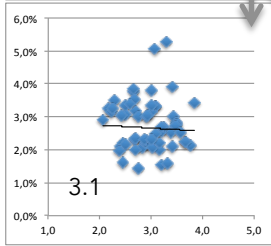
1) The whole sample shows a general relationship quality/monetary performances (low cap rate)



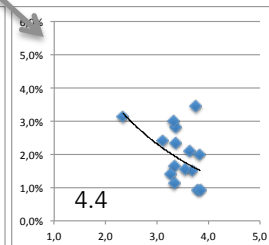
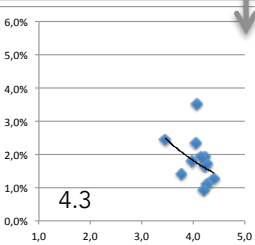
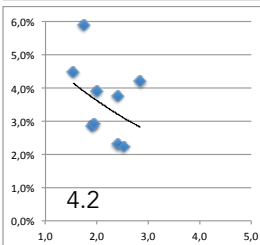
2) Clusters 2.1 and 2.2 show the first weak distinction between ordinary and less ordinary properties, the formers featured by lower quality and higher cap rate and vice versa for the latters;



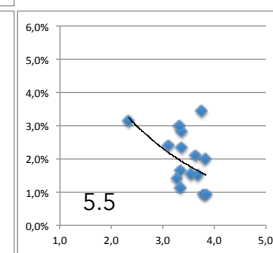
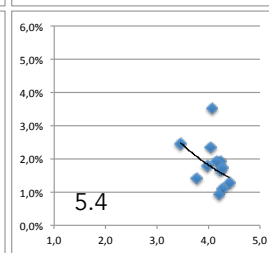
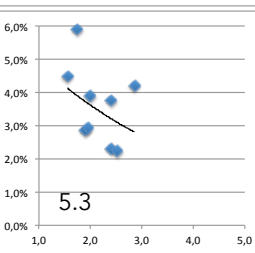
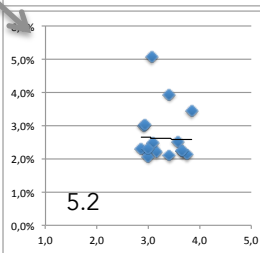
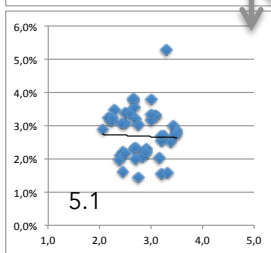
3) Within cluster 2.1 can be distinguished the sub-cluster 3.2 as a group of low monetary performances



4) Cluster 3.3 contains a smaller and better sub-cluster 4.3

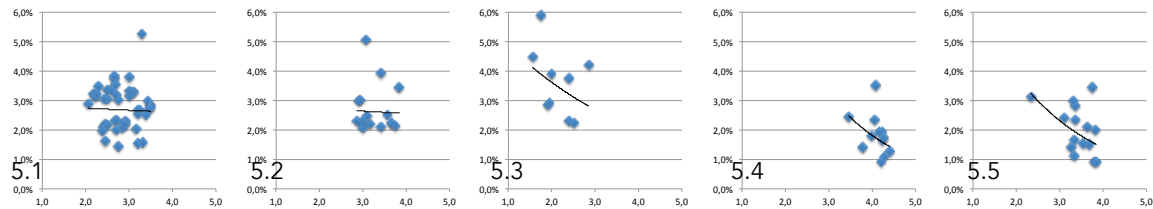


5) Cluster 4.4 contains a smaller and better sub-cluster 5.2

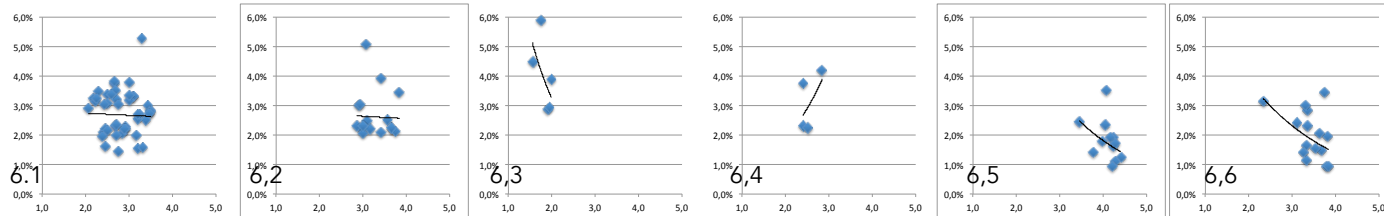


3. Scatters for each pruning hypothesis

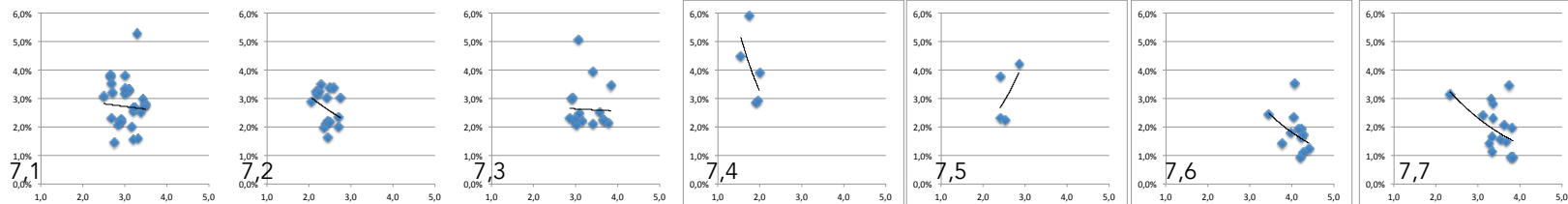
Real estate education and digital generation -: Ferrara 5-6 December 2014



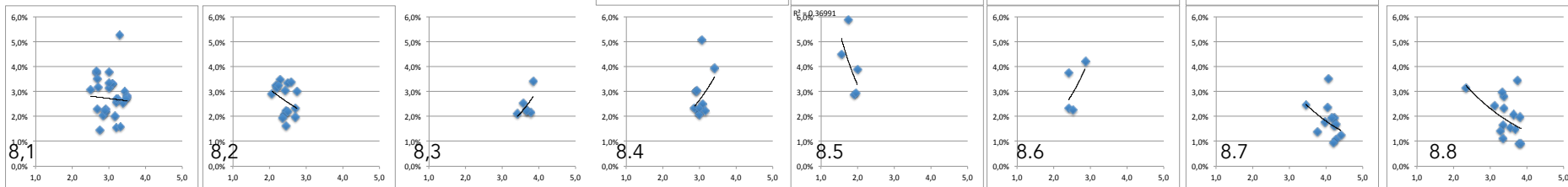
5) Cluster 4.1 contains a smaller and better sub-cluster 5.2



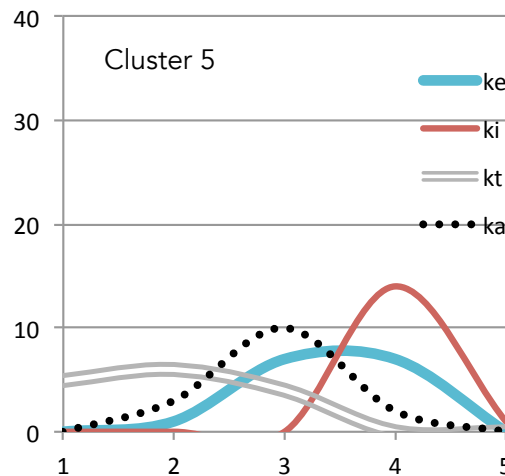
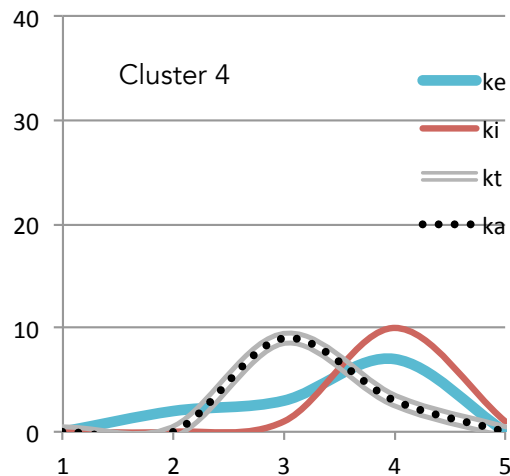
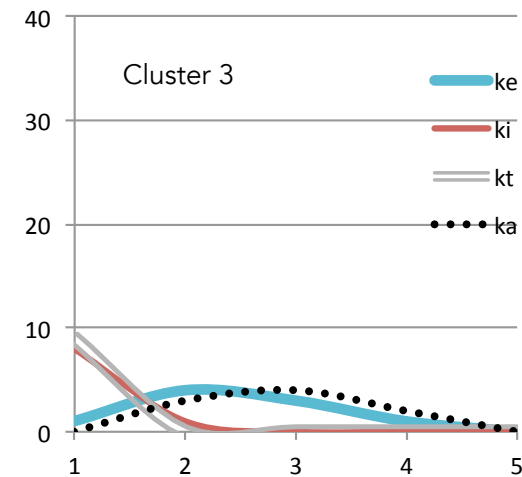
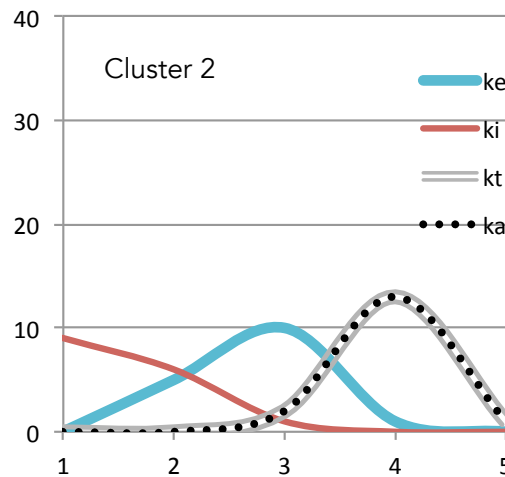
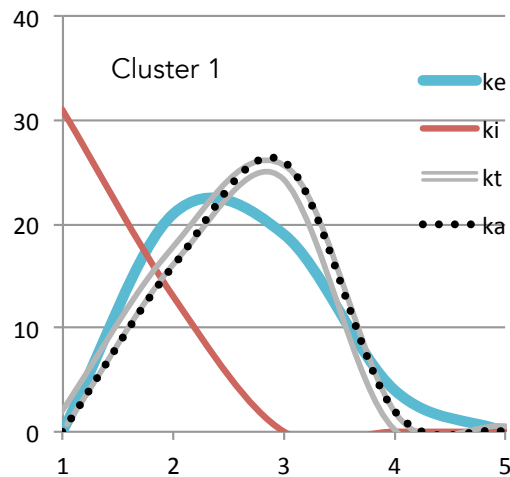
6) Cluster 6.1 splits into clusters 7.1 and 7.2



6) Cluster 7.3 splits into two non significant clusters, 8.3 and 8.4



3. Distribution of properties by characteristics in the five clusters



CI 1: large group of ordinary properties, med arch/techn features, very low location/landscape features; medium-low prices, med-high and low volatile cap rates;
 CI 2: high techn/arch, med location, low landscape; med prices and cap rates;
 CI 3: low location, landscape and techn, med arch, low prices, high and volatile cap rates;
 CI 4: med techn/arch features, good landscape and location, highest and volatile prices, low, decreasing and volatile cap rates;
 CI 5: low techn, med arch, med./high location, high landscape, high and volatile prices, low and volatile cap rates

4. Interactive real time WebGIS data management project

In order to do this more quickly and to show students the result of their surveys, since the current year we have provided a WebGIS Geo-Database tool in which students can implement real estate market data and assessments.

The tool allows them to arrange the appraisal by inserting correctly data, verifying the consistency of the assessments, checking the significance of the results.

The tool includes:

1. The **registration form**;
2. The implementation sheet and the display of the geo-database;
3. The maps displaying the spatial distribution of the characteristics, prices, rents and cap rates

The screenshot shows a web browser window with the URL www.valuespace.darc.unict.it. The page has a green header with navigation links: HOME, WEBGIS, ISCRIZIONI, GEODATABASE, FORUM, RIVISTA, and LOGIN. Below the header, there is a section titled 'BENVENUTI NEL SITO' and 'ISCRIVITI AL CORSO DI ECONOMIA ED ESTIMO AMBIENTALE A.A. 2014-2015'. The registration form includes fields for Nome, Cognome, NickName, Mail, Matricola, Luogo di Provenienza, Numero Telefono, Password, and Ripeti Password. A 'Completa Registrazione' button is at the bottom. On the right side, there is a 'GRUPPO LAVORO' section listing the staff: Docente Salvatore Giuffrida, Assistente Arch. Giovanna Ferluga, and Assistente PhD Filippo Gagliano. Below this, there is a section titled 'IL GEODATABASE' showing a 3D map visualization. At the bottom right, there is a section titled 'IL WEB-GIS'.

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Università di Catania
S.D.S. Architettura di Siracusa
Economia ed Estimo Ambientale

Home Esci

Hai fatto l'accesso come Salvatore Giuffrida (gruppo:default)

home » scheda tabella schede

Scheda dati e attributi

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[allegati \(0\)](#) [link \(0\)](#)

[Esporta dati](#) [Importa dati](#)

[Nuovo](#) [Modifica](#) [Annulla](#) [Salva](#) [Elimina](#) [Duplica](#) [Ricerca](#)

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cons_pert_cantina	
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ki_panor_fr4 		
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ki_esposizione 2		
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kt_ed_difetti 		kt_ed_qual_finitura 2
kt_ed_degradi 		

4. Propriet  Geo-Database

Geo-Database immobili



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[vista tabella](#)

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<< < > >> Esporta dati Importa dati

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4. Propriet  Geo-Database

Geo-Database immobili



vista scheda



vista tabella

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|< << >> >| Esporta dati Importa dati

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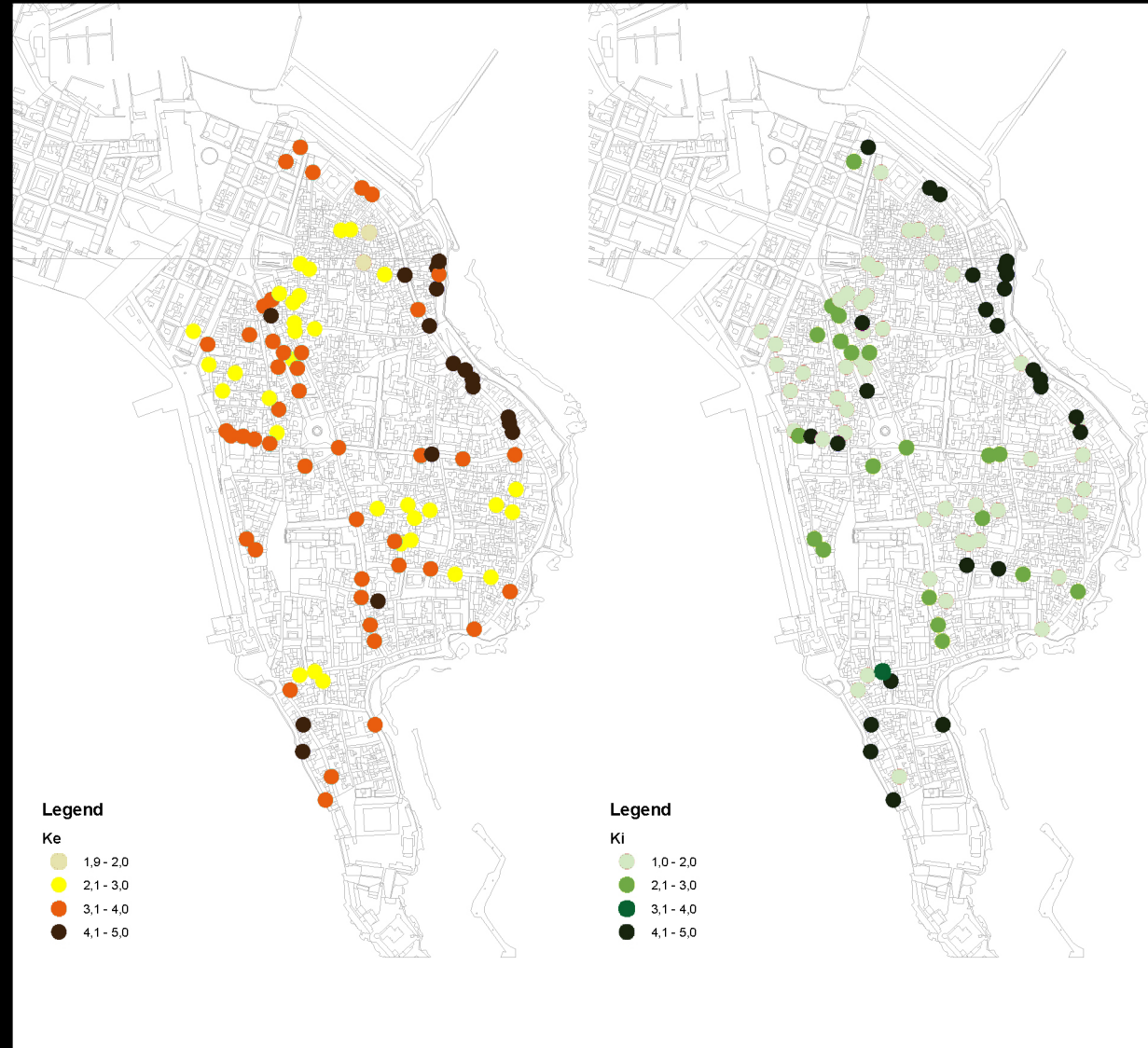
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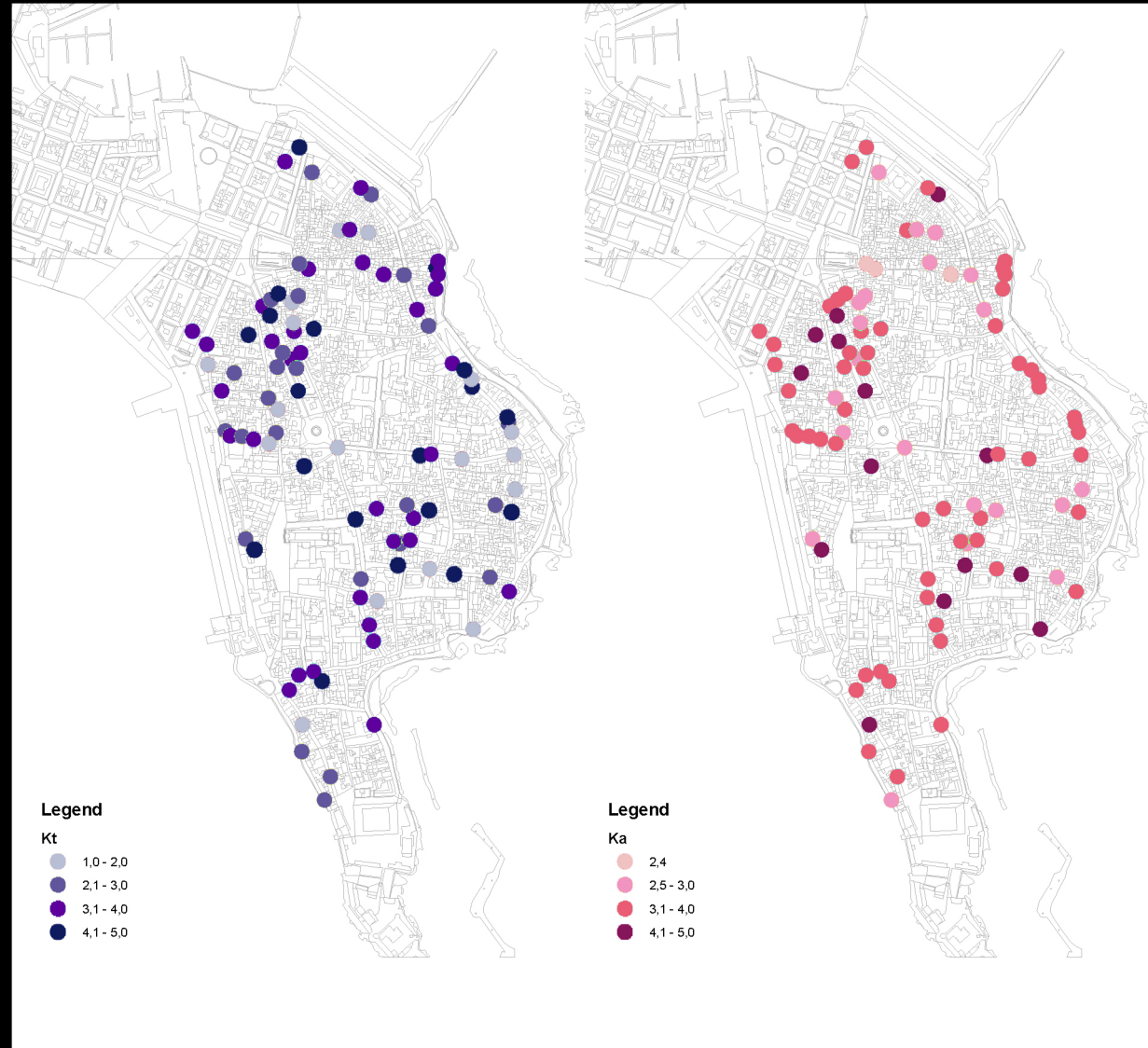
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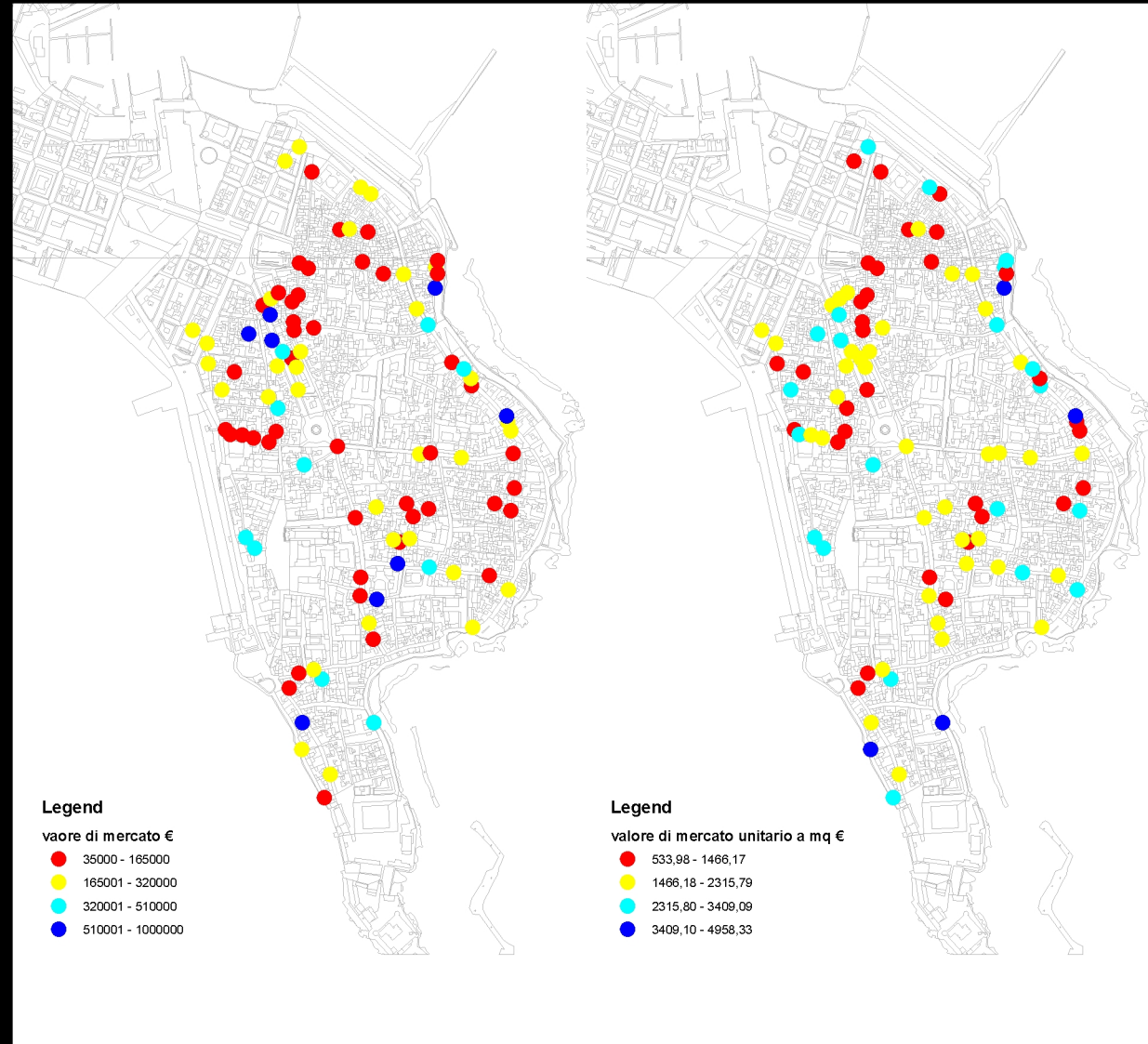
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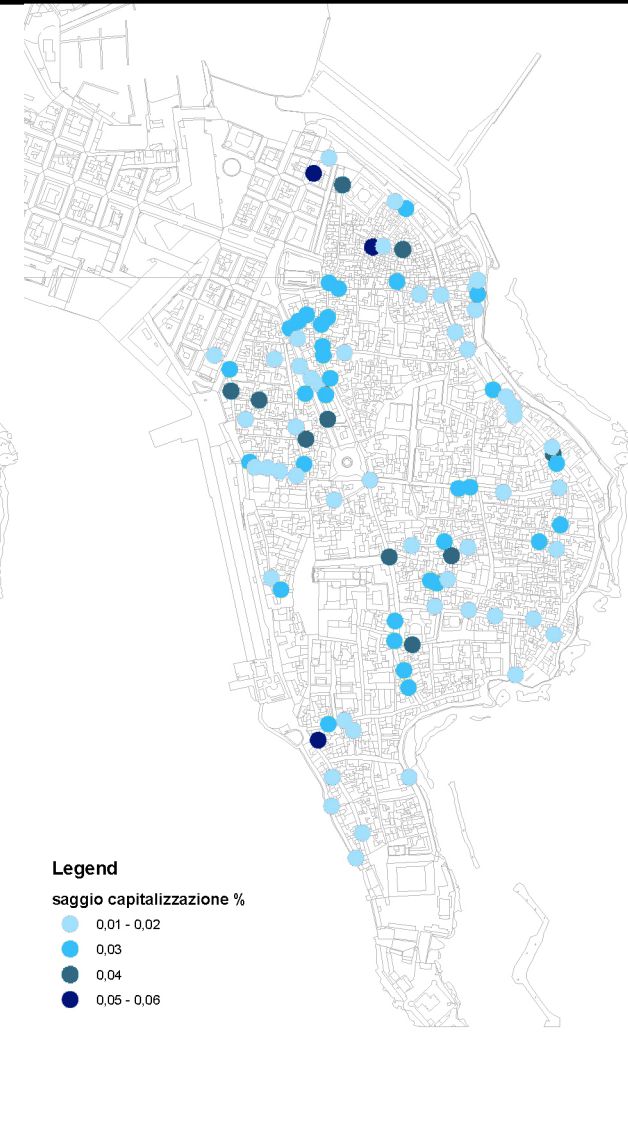
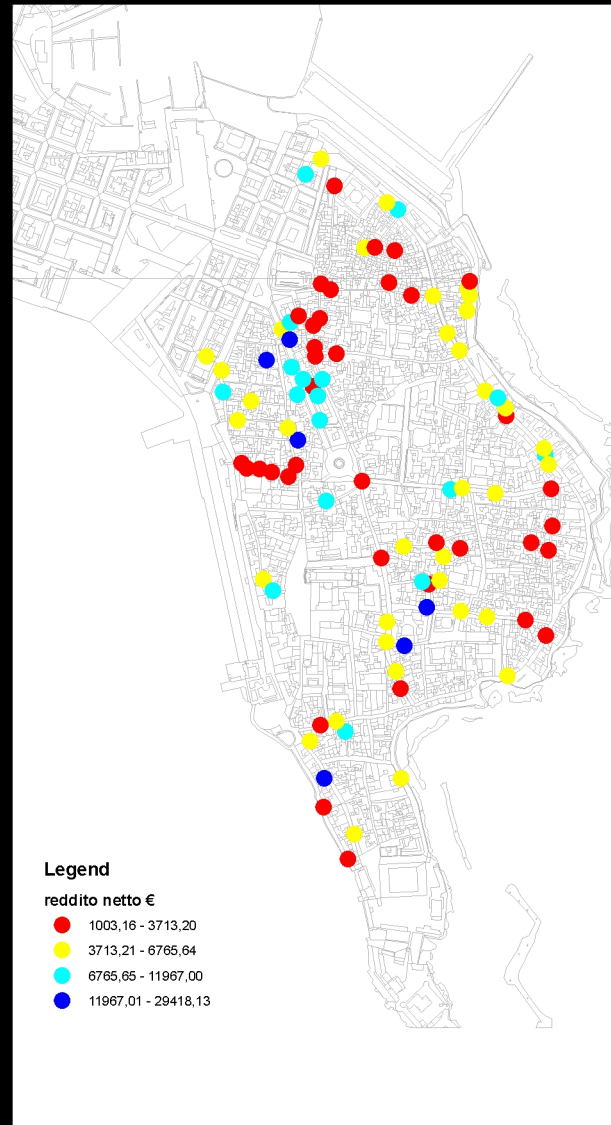
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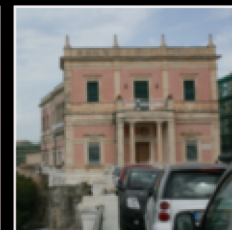
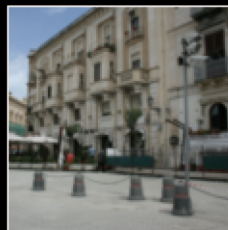
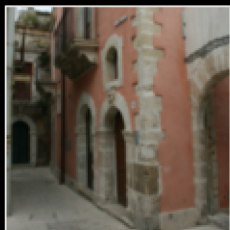
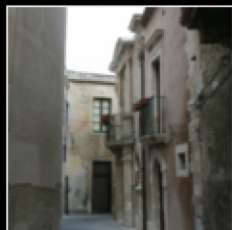
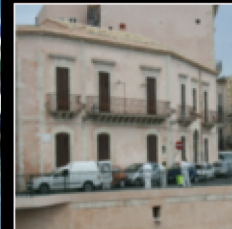
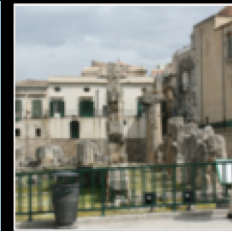
In order to do this more quickly and to show students the result of their surveys, since the current year we have provided a WebGIS Geo-Database tool in which students insert real estate market data and assessments.

The tool allows them to arrange the appraisal by inserting correctly data, verifying the consistency of the assessments, checking the significance of the results.

The tool includes:

1. The registration form;
2. The insert sheet and display of the database;
3. **The maps** displaying the spatial distribution of the characteristics, prices, **rents and cap rates**





Real estate **market** is an important cultural and existential dimension of human communities

Real estate **education** enhances the awareness of our relationship with space and time of the habitat we live in.

Real estate asset **interpretation** is one of the most challenging appraisal activities, so that a specific sensitivity is required.

Real estate segments express quite differently the relationship between their **space** and **time** dimensions that cap rate describes and represents.

The project we are going to implement provides the possibility of monitoring real time the **evolution** of this particular space/time relationship