The Aura of Office Buildings
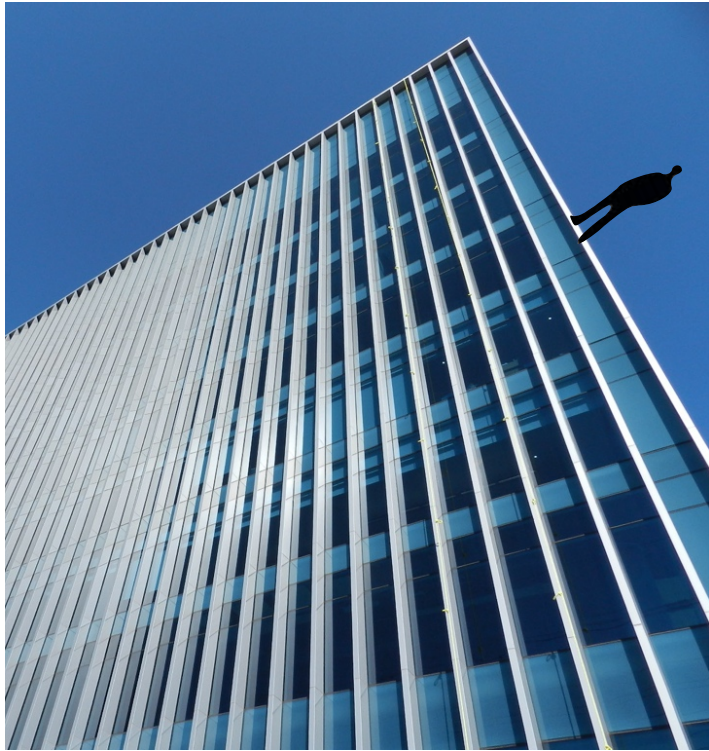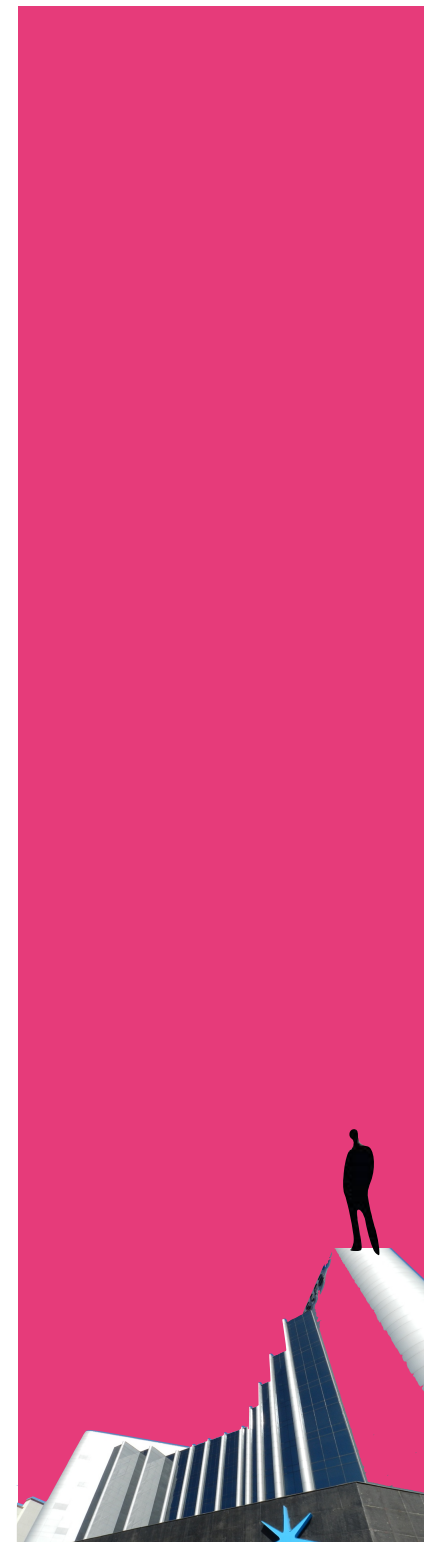
The impact of image and prestige in financial performance of office buildings

Content:

* Motive

* Theoretical Background

* Research

* Results

* Conclusion and Recommendations

M o t i v e :

Architecture + Real Estate

Buildings are a Public Good ! and ' Design Pays '

Interest in the financial side of real estate. Imperfect market and imperfect valuations.

No knowledge of office hedonic models in Latin America (booming market / accelerated growth)
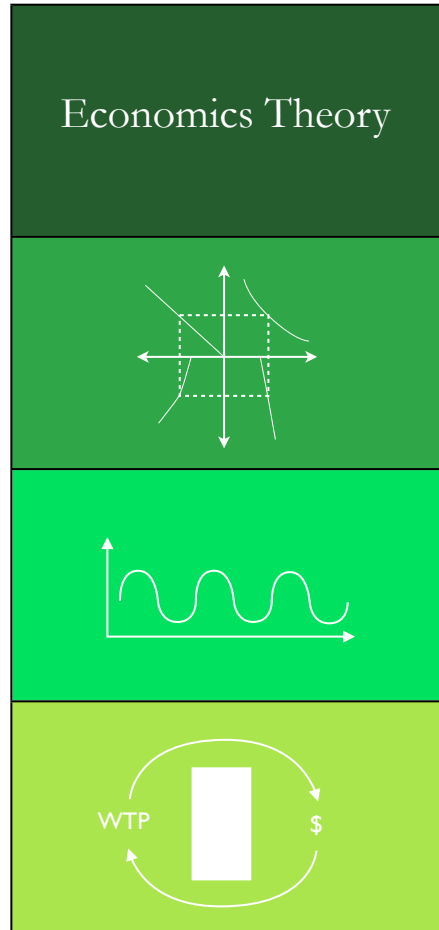
Monterrey is my home town! Natural choice & network!

Returning to value for end user: if buildings 'look' better the city benefits, employees could potentially feel more engaged with company values and perform better.

Theory:

How RE economics work?

Economics Theory

WTP $

T h e o r y :

Why is image important for RE?

Real Estate Management Theory

5th

Resource: People, Technology, Information, Capital

Align Strategy

Distinctiveness

PR and Marketing

De Vries 2007

Lindholm 2006

Strengthen Corporate Image

+

Adding Value

T h e o r y :

What criterion adds value for RE?

Location, Location, Location!

Object Level

Object's Aura Level

Hedonic Pricing Theory

Location Theory

Physical Attributes Hardware

Physical Attributes Software

Interaction/ Lifestyle Humanware

The nature of image and brands have become detached from the use value and are instead increasingly attached to the object's 'aura' expressing the culture and beliefs of the object itself.

(Fuerts, 2011)

Hypothesis:

'Building features at an 'object's aura level' are of such importance to the asking rents that they need to be considered in the decision-making criteria for developers to build and brokers to accommodate tenants'

Research Question:

What is the impact of prestige and image on financial performance of office buildings in the city of Monterrey?
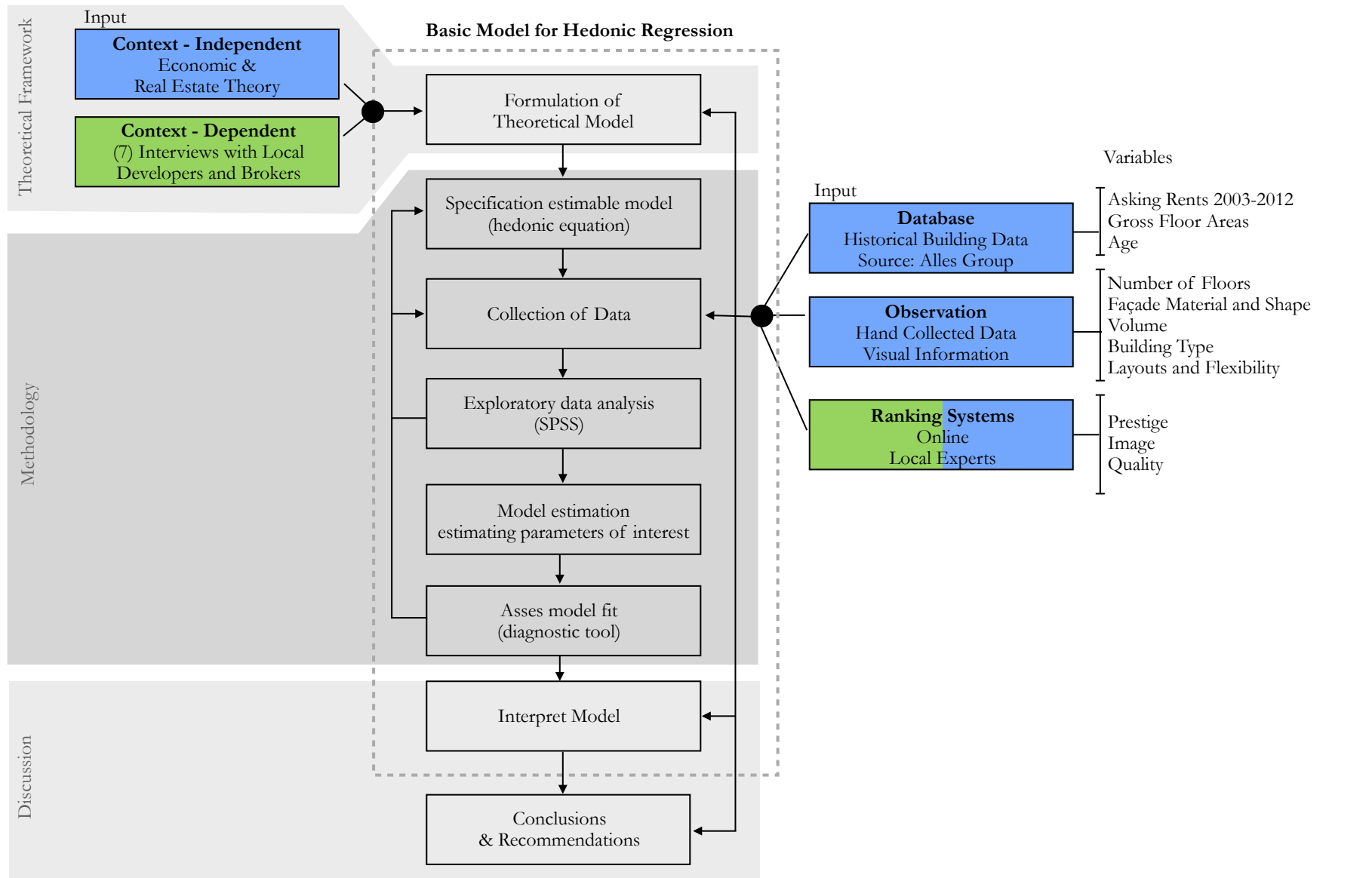
Sub- Questions

What criterion is currently considered to impact the willingness to pay for office buildings?

Explore and measure the economic impact of 'aura' variables on office buildings.
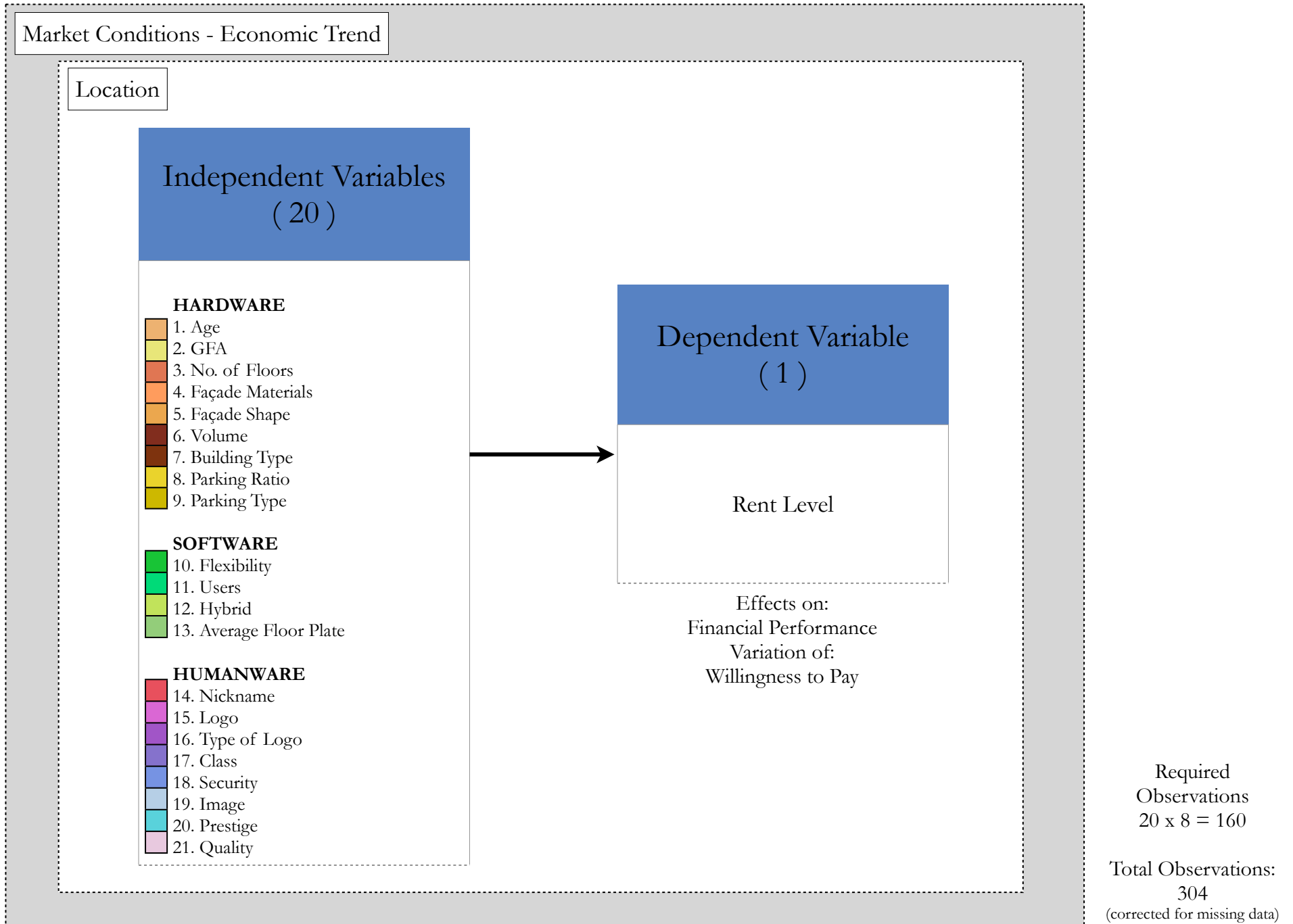
How should knowledge of building features be translated to practical advise for developers and brokers in the market ?
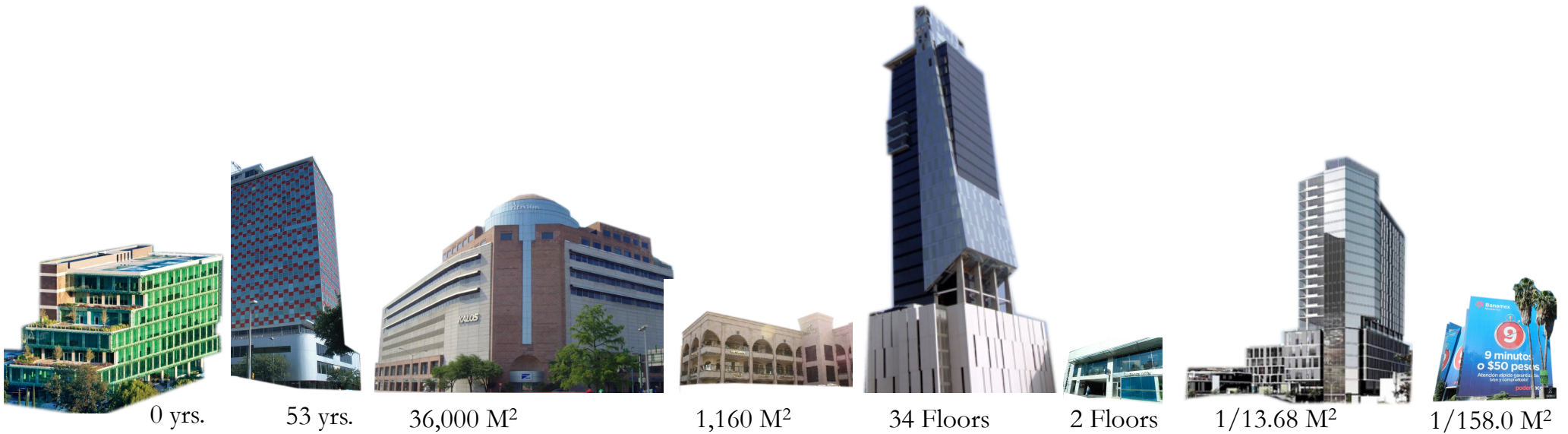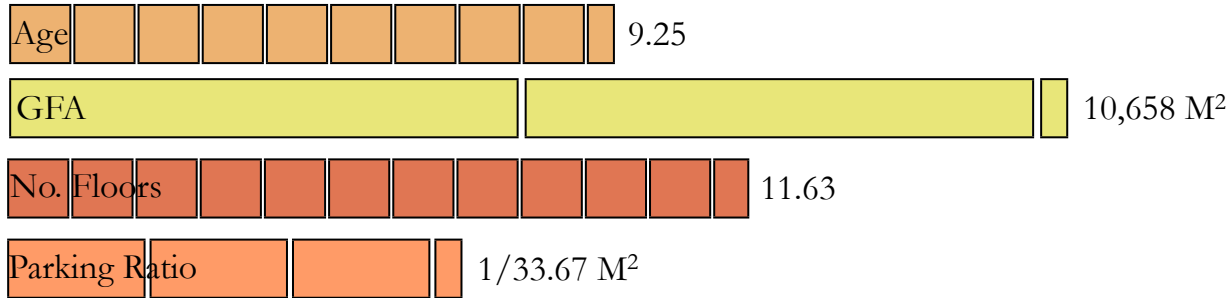
Research Design:

Theoretical Framework

Input

Context - Independent
Economic &
Real Estate Theory

Context - Dependent
(7) Interviews with Local
Developers and Brokers

Basic Model for Hedonic Regression

Formulation of
Theoretical Model

Input

Database
Historical Building Data
Source: Alles Group

Variables

Asking Rents 2003-2012
Gross Floor Areas
Age

Methodology

Specification estimable model
(hedonic equation)

Collection of Data

Observation
Hand Collected Data
Visual Information

Number of Floors
Façade Material and Shape
Volume
Building Type
Layouts and Flexibility

Exploratory data analysis
(SPSS)

Ranking Systems
Online
Local Experts

Prestige
Image
Quality

Model estimation
estimating parameters of interest

Asses model fit
(diagnostic tool)

Interpret Model

Discussion

Conclusions
& Recommendations

ResearchModel:

Market Conditions - Economic Trend

Location

Independent Variables (20)

HARDWARE
1. Age
2. GFA
3. No. of Floors
4. Façade Materials
5. Façade Shape
6. Volume
7. Building Type
8. Parking Ratio
9. Parking Type

SOFTWARE
10. Flexibility
11. Users
12. Hybrid
13. Average Floor Plate

HUMANWARE
14. Nickname
15. Logo
16. Type of Logo
17. Class
18. Security
19. Image
20. Prestige
21. Quality

Dependent Variable (1)

Rent Level

Effects on:
Financial Performance
Variation of:
Willingness to Pay

Required
Observations
20 x 8 = 160

Total Observations:
304
(corrected for missing data)

Research:

Dataset by: Alles Group (brokerage)
165 buildings only 70 could be used.
10 years (2003 - 2012).
Asking rents.

Research / Hardware:

Age	9.25
GFA	10,658 M²
No. Floors	11.63
Parking Ratio	1/33.67 M²

0 yrs.   53 yrs.   36,000 M²   1,160 M²   34 Floors   2 Floors   1/13.68 M²   1/158.0 M²

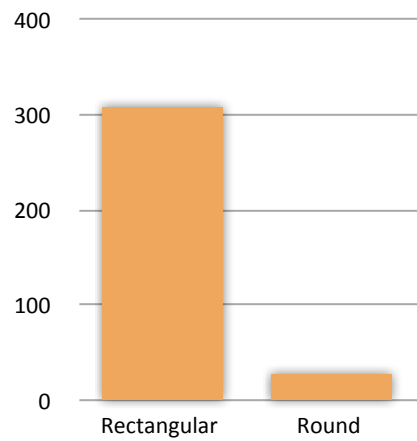# R e s e a r c h   /   H a r d w a r e :

Source: Alles Group + Observation
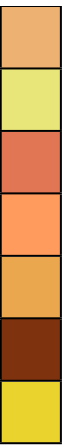
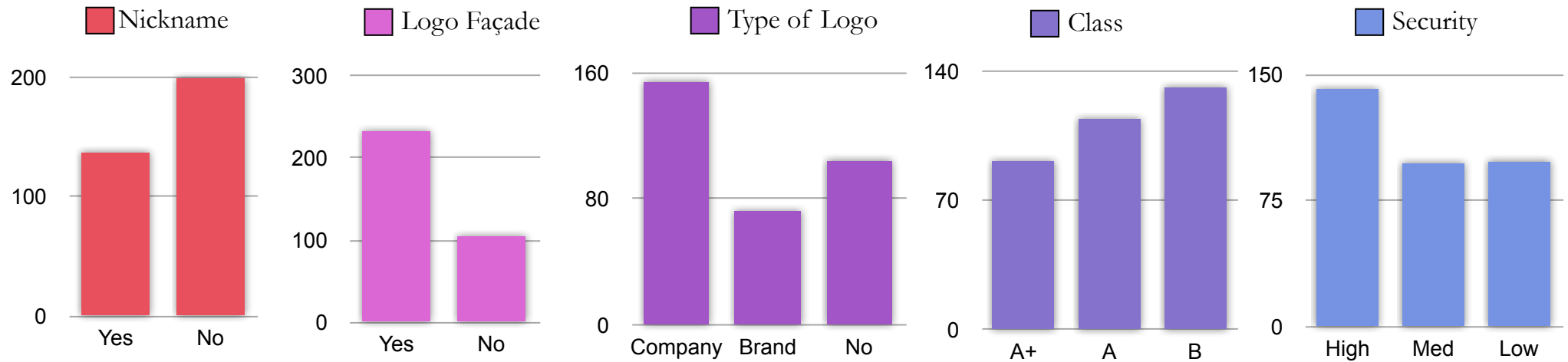■ Façade Shape   ■ Façade Material   ■ Volume   ■ Parking Type

Façade Shape
- Rectangular
- Round

Façade Material
- Glass
- Mix
- Concrete
- Stone

Volume
- Box
- Multirec
- LTX
- Circle

Parking Type
- Underground
- Structural
- Mix
- Gound

R e s e a r c h   /   S o f t w a r e :

Avg. Floor Plate		1,229 M²

Min. 530 M²   Max. 6,000 M²

Hybrid

13%

87%

- Mono Functional
- Multi Functional

Users

10%

90%

- One
- Multi

Housing

Offices

Offices

Retail

VERTICE

Research / Humanware:

Nickname

	Yes	No
200	140	200
100		
0		

Logo Façade

	Yes	No
300	235	110
200		
100		
0		

Type of Logo

	Company	Brand	No
160	155	72	105
80			
0			

Class

	A+	A	B
140	95	115	132
70			
0			

Security

	High	Med	Low
150	142	100	100
75			
0			

Research / Humanware :

Source: Online Expert Ranking System

14 Experts (Brokers, Developers and Consultants) - 65% Response Rate
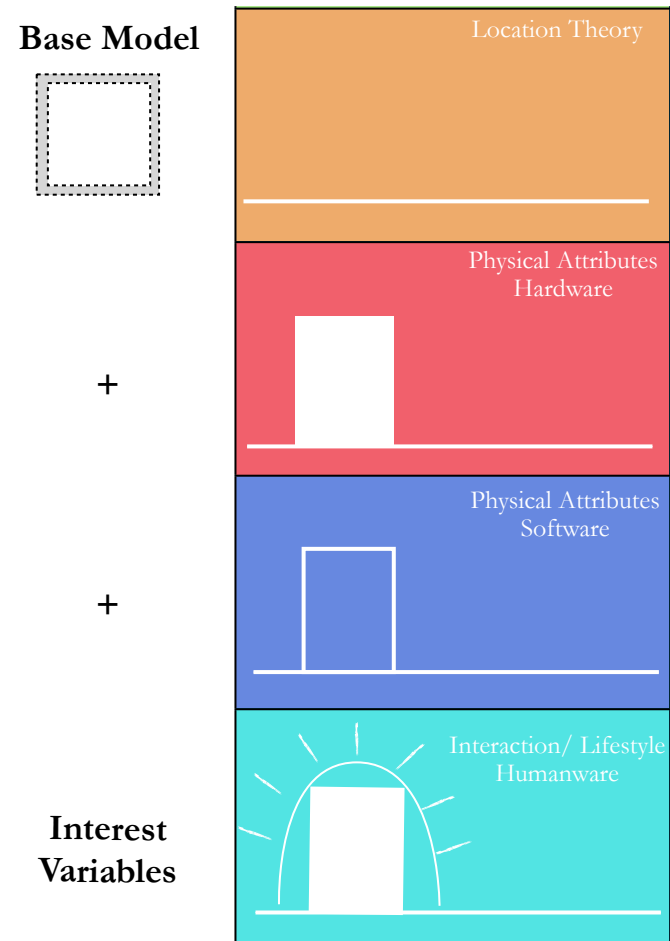

□ Prestige   □ Quality   □ Image
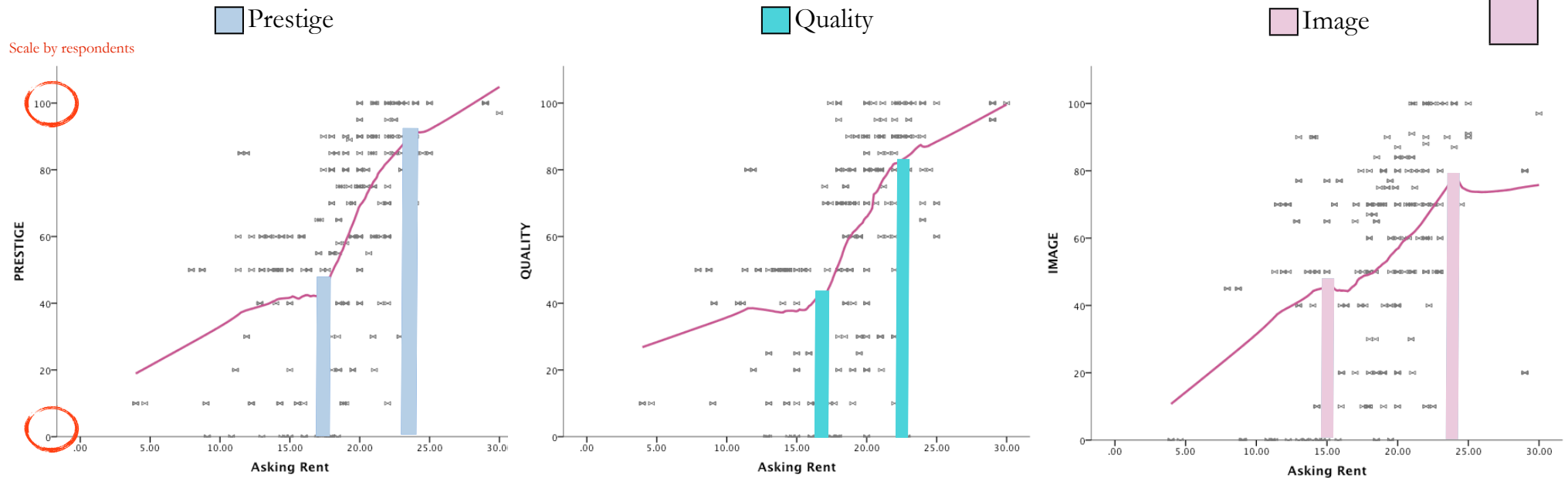
Preference Measurement Theory (Barzilai, 2006)
The theory explains the mathematical operations of non-physical variables, such as preference, which describes psychological or subjective properties.

E
Empirical

M
Mathematical

S
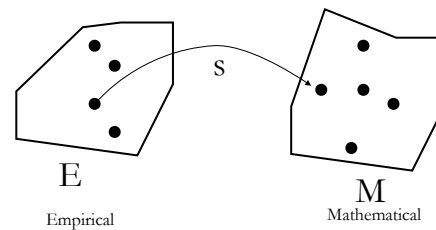
Results:

Model Building Strategy

Base Model

+

+

Interest Variables

Location Theory	
Physical Attributes Hardware	
Physical Attributes Software	
Interaction/ Lifestyle Humanware	

R e s u l t s :

Base Model
Transaction Yr
Submarkets

Adj. R-Sq. 0.361

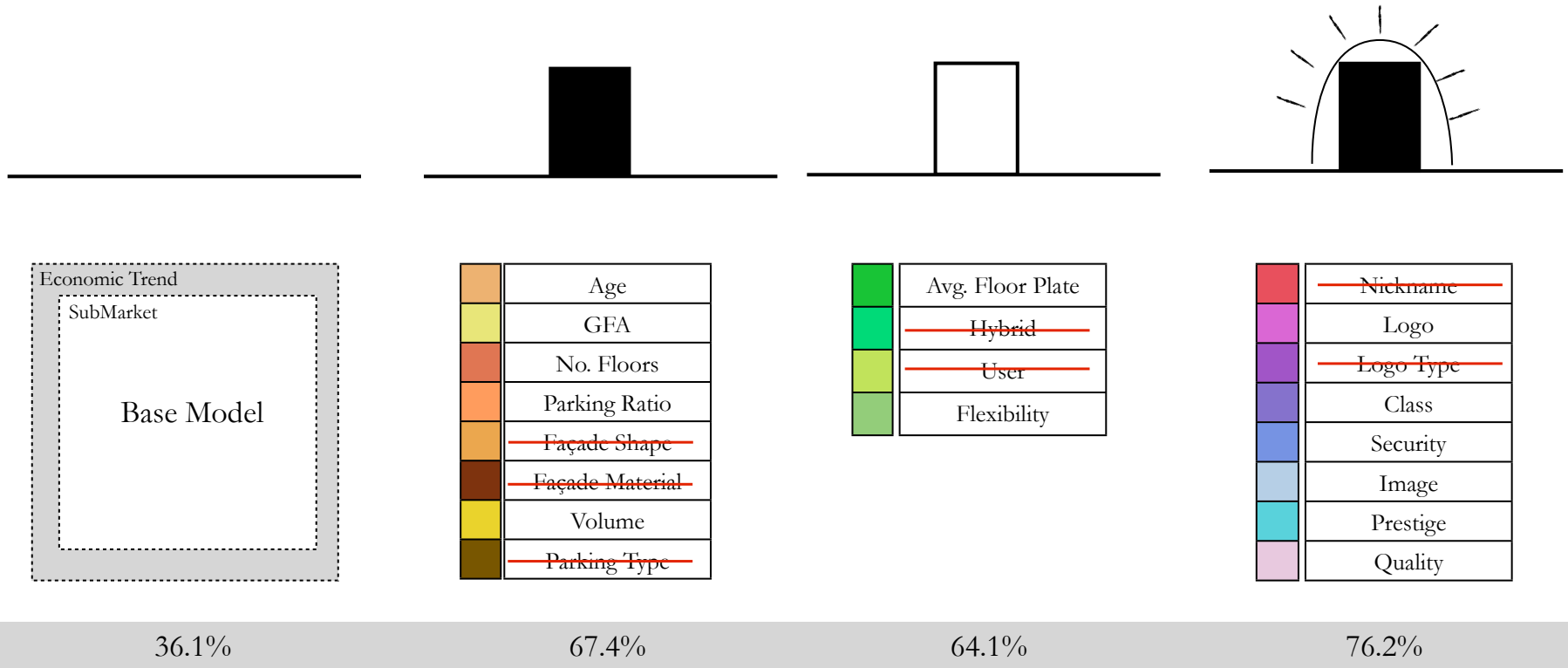|			
	Trans_Yr 2004	0.068	0.345
	Trans_Yr 2005	-0.014	0.845
	Trans_Yr 2006	-0.007	0.920
	Trans_Yr 2007	-0.075	0.293
	Trans_Yr 2008	0.052	0.437
	Trans_Yr 2009	0.224	0.001
	Trans_Yr 2010	0.157	0.014
	Trans_Yr 2011	0.113	0.074
	Trans_Yr 2012	0.200	0.002
	Sub_SM	0.382	0.000
	Sub_ValleG	0.504	0.000
	Sub_VO	0.461	0.000
	Sub_Valle	0.229	0.000

Economic Trend

Location
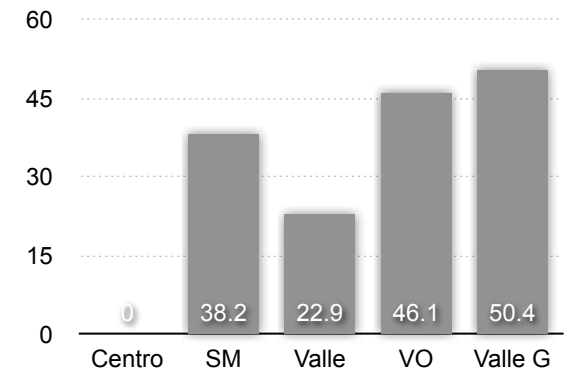
Rental Premium per Submarket

	Centro	SM	Valle	VO	Valle G
	0	38.2	22.9	46.1	50.4

Results:

Model Building: Single Variable Regression Analysis

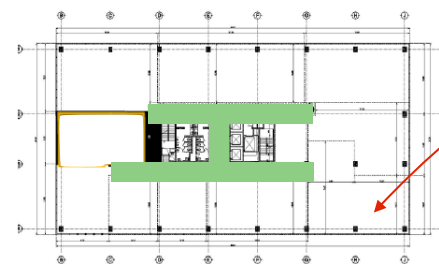|	Base Model			
	Economic Trend / SubMarket	Age	Avg. Floor Plate	~~Nickname~~
		GFA	~~Hybrid~~	Logo
		No. Floors	~~User~~	~~Logo Type~~
		Parking Ratio	Flexibility	Class
		~~Façade Shape~~		Security
		~~Façade Material~~		Image
		Volume		Prestige
		~~Parking Type~~		Quality
Adj. R-Sq.	36.1%	67.4%	64.1%	76.2%

R e s u l t s :

Model Building: Eliminating Proxies / Detecting Correlations

	~~GFA~~
	No. Floors

		Linear term is more reliable!
	Avg. Floor Plate	
	~~Flexibility~~	
	~~Volume~~	

+ M²

Contains information about Status as well!

+ M²

Contain similar information about layout and efficient use of M²

Box

LTX

Multi Rec

Other

Results:

Model Building: Selecting Best Performing Variables

	Class

	Image
	Prestige

	Nickname
	Logo
	Quality
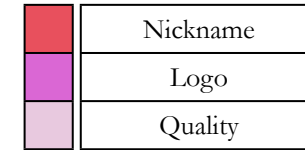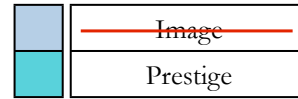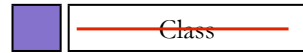
1 + Model

Local Situation:
Non-existent indicators for classifying buildings. The methodology brokers and developers employ is doubtful. Gut feeling and marketing is used to classify buildings. Classification does not change over time.

The method used to collect this variable is considered a mere opinion of the brokerage house.

Survey Confusion:
The experiment to include both terms on the ranking system (although they are considered very similar) gave very similar results for both categories.

In SPSS prestige variable performed better, hence was ranked and understood best by respondents.
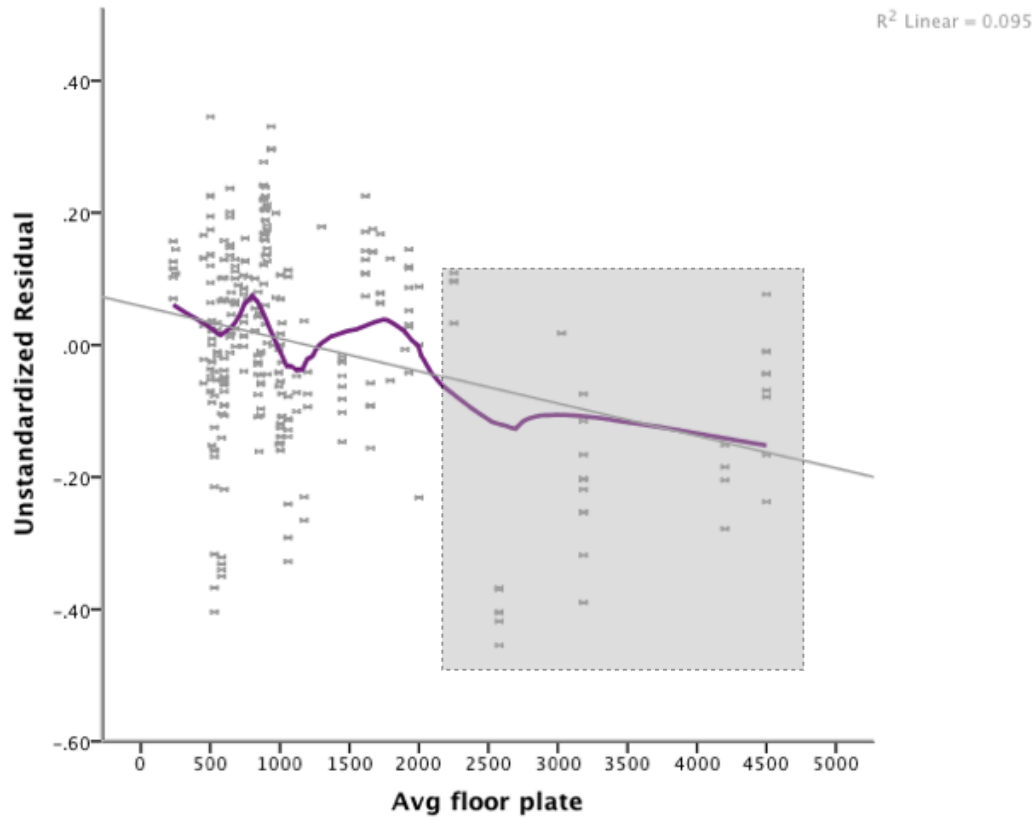
Noise:
Humanware variables when added altogether to the model, created unwanted noise and disturbance to other variables.

A 1+model strategy was used to add each of the variables (one by one) after the model was fit. The objective was to observe the performance of this variables without disturbing the functioning model.
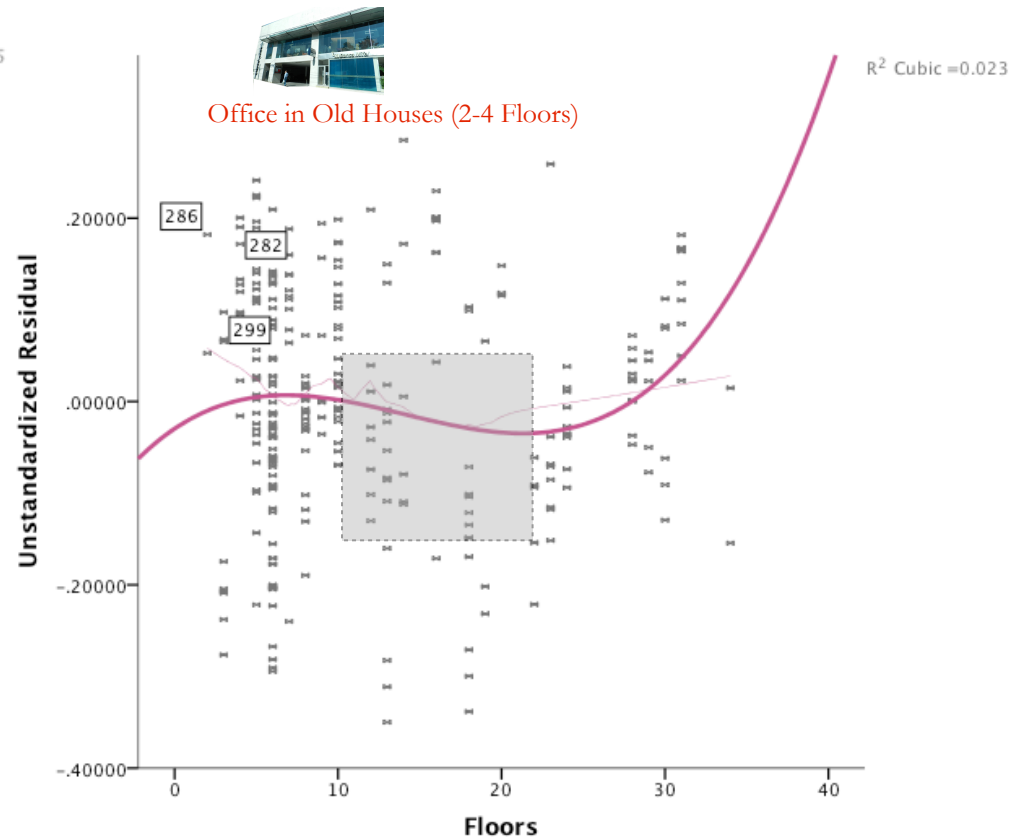
R e s u l t s :

Fit Model: Recoding Variables

Too few observations above 2000 M²
Provided a negative effect this was corrected by:

New variable: **Floor0_2000**
Significance: 0.000
B-Value: 0.204

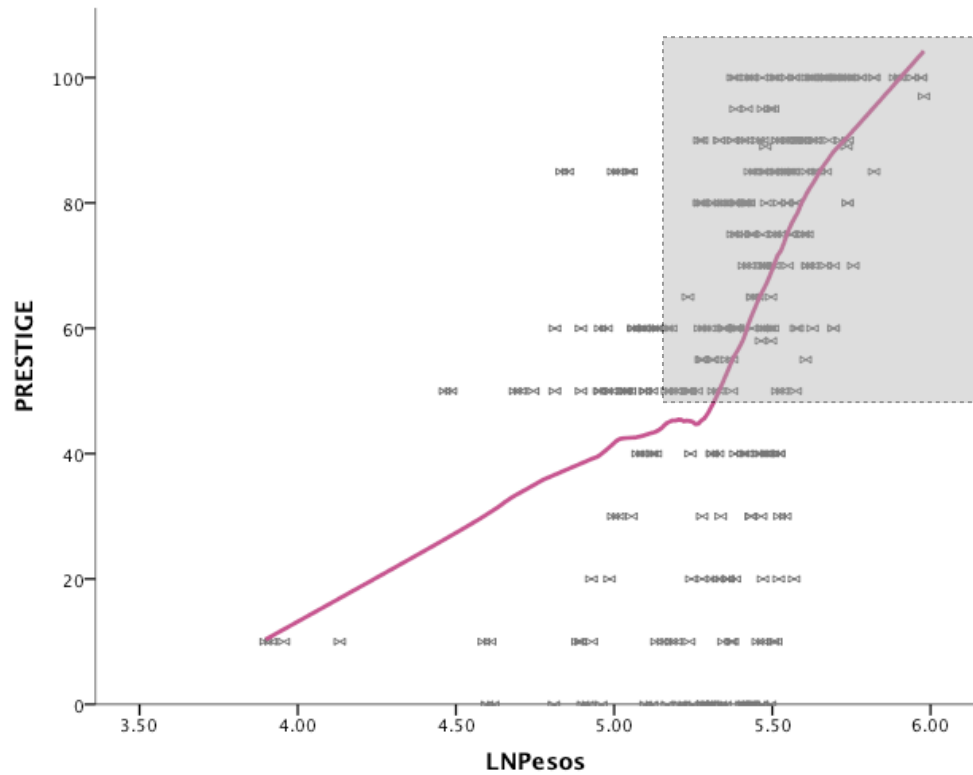Office in Old Houses (2-4 Floors)

No. of Floors was recoded to correct for negative effects.

New variable: **Floor0_9**
Significance: 0.009
B-Value: 0.056

New variable: **Floor21+**
Significance: 0.030
B-Value: 0.065

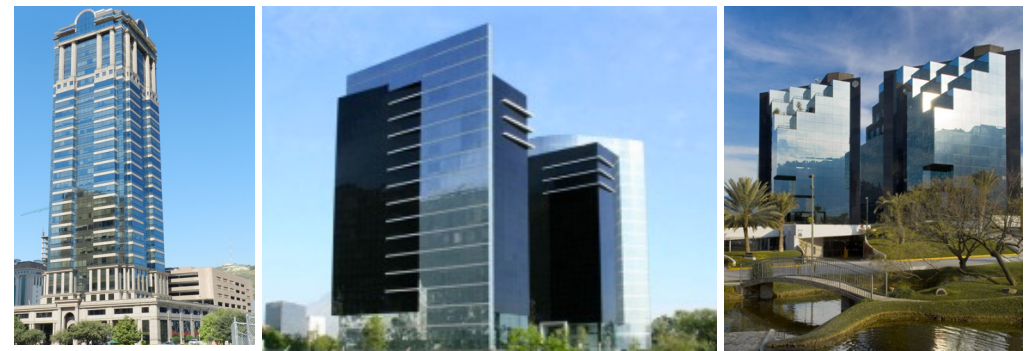# R e s u l t s :

Fit Model: Recoding Variables

Prestige seems to be relevant when buildings have
an above average score on the ranking system.

New variable: **Categorical_Pres**
Significance: 0.000
B-Value: 0.116

Fitting the Model:

Fit Model:

	R-Sq.	Adj. R-Sq.	Std. Error	Sig.
Total	0.759	0.741	0.12104	0.000

Trans_Yr 2004	0.054	0.191
Trans_Yr 2005	-0.004	0.922
Trans_Yr 2006	0.016	0.700
Trans_Yr 2007	0.003	0.949
Trans_Yr 2008	0.095	0.015
Trans_Yr 2009	0.253	0.000
Trans_Yr 2010	0.195	0.000
Trans_Yr 2011	0.152	0.000
Trans_Yr 2012	0.244	0.000
Sub_SM	0.025	0.419
Sub_ValleG	0.233	0.000
Sub_VO	0.083	0.000
Sub_Valle	0.198	0.000
Building Age	-0.005	0.000
Parking Ratio	-0.003	0.000
Floor Plate 0-2000	0.204	0.000
Floor 0-9	0.056	0.009
Floor 21+	0.065	0.030
Security High	0.100	0.007
Security Med	0.083	0.008
Categorical Prestige	0.116	0.000

Oficinas *hay de sobra*

Toman las oficinas su segundo aire

Recibe NL 20 proyectos que representan casi 200 mil metros cuadrados

Oficinas viven 'boom'

2010
Con lo que existe se satisfacería demanda de 18 meses
Hay oficinas para rato

Inventario total Clase A+ y A

Corredor	Inventario Total m²	Disponibilidad m²	Tasa de Disponibilidad	Precio Promedio de Renta USD $/m²/mes
Country	30,241	0	0.0%	$ -
San Jerónimo - Constitución	43,416	6,350	15%	$14.81
Margain-Gómez Morin	103,886	5,595	5%	$29.47
Monterrey Centro	126,050	20,178	16%	$15.98
Santa María	71,737	11,645	16%	$20.09
Valle	25,904	750	3%	$16.00
Valle Oriente	297,814	51,504	17%	$20.44
Total	699,048	96,022	14%	$19.58

Results:

Fit Model:

	R-Sq.	Adj. R-Sq.	Std. Error	Sig.
Total	0.759	0.741	0.12104	0.000

	Trans_Yr 2004	0.054	0.191
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	Building Age	-0.005	0.000
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	Floor 0-9	0.056	0.009
	Floor 21+	0.065	0.030
	Security High	0.100	0.007
	Security Med	0.083	0.008
	Categorical Prestige	0.116	0.000

R^2 Quadratic =0.019

+1

13.68

0

0   -.03%

15 · 10 · 5 · 0

0-9	10-20	21+
5.6	0	6.5

No. Floors

15 · 10 · 5 · 0

Low	Med	High
0	8.3	10

Security

A n s w e r s :

Sub- Questions

What criterion is currently considered to impact the willingness to pay for office buildings?

	Theory		Practice	Model

Author	Literature
Clapp (1980)	Size, Building Age, No. Floors, Distance to major roads.
Hough and Kratz (1983)	Building Awards
Dorion (1992)	Atriums
Gat (2000)	Services
Laverne, Winson-Geideman (2003)	Trees and Landscape
Ho et al (2005)	Services
Koppels (2008)	Image, Logo
Ozus (2009)	Floors, Banks in vicinity, accessibility
Fuerts (2010)	Star-Architects
Fuerts (2011)	LEED Certificates

Interviews
Parking Spaces
Average Floor Plate
Security
Class (A+, A, B, C)
Size
Services / Amenities
Maintenance
HVAC Systems
Elevators Speed / Privacy
Other tenants
Accessibility

	Transaction Years
	Submarket
	Building Age
	Parking Ratio
	Floor 0-9
	Floor 21+
	Floor Plate 0-2000
	Security High
	Security Med
	Categorical Prestige

A n s w e r s :

Explore and measure the economic impact of 'aura' variables on office buildings.

1 + Model
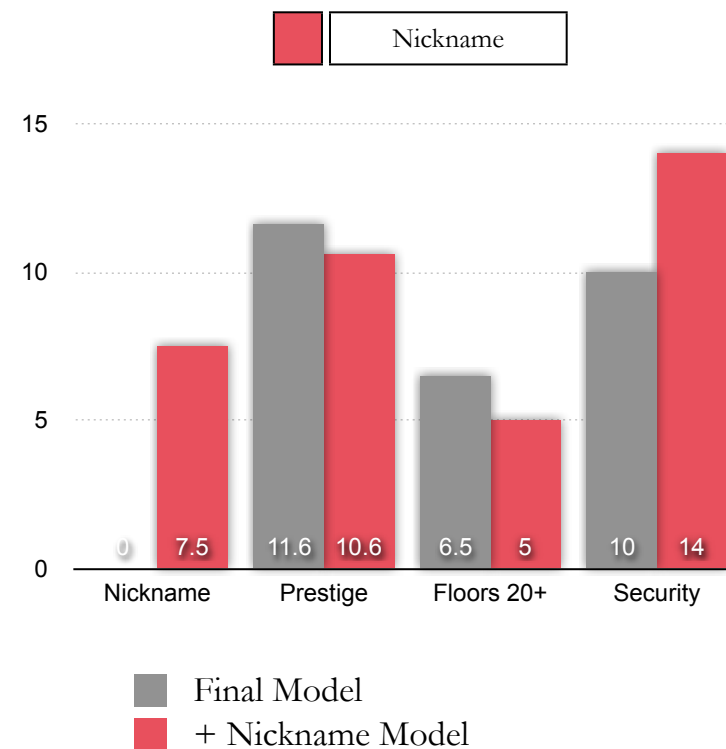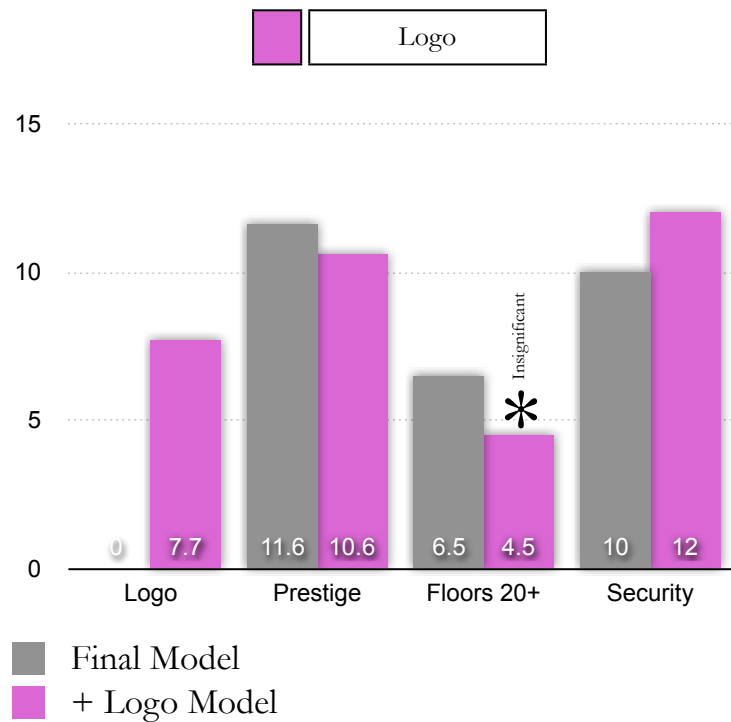
|	Quality	0.003	0.000
	Categorical Prestige	0.116	0.000

A n s w e r s :

How should knowledge of building features be translated to practical advise for developers and brokers in the market ?

		Green	AON
	Submarket	**Valle G**	Valle G	Valle G
	Building Age	**0-8 yrs**	1	7
	Parking Ratio	**< 24.00**	17.01	22.48
	Floor Plate 0-2000	**1250 Avg.**	1300	1446
	Floor 0-9	**0-9**	7	8
	Security High	**High**	High	High
	Categorical Prestige	**> 70**	100	75

$ 395.07

$ 296.96
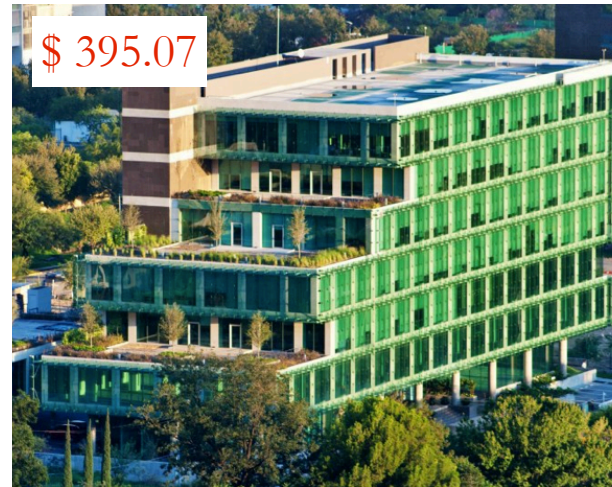
		Red	Kalos
	Submarket	**Center**	Center	Center
	Building Age	**+ 9 yrs**	14	28
	Parking Ratio	**> 24.00**	24.5	36.00
	Floor Plate 0-2000	**< Avg. or >2000**	500	6000
	Floor 0-9	**10-21**	14	10
	Security High	**Med-Low**	Low	Med
	Categorical Prestige	**< 70**	10	50

$ 188.13

$ 188.13

**What is the impact of prestige and image on financial performance of office buildings in the city of Monterrey?**

Prestige is proven to be highly significant (0.000) and has an impact of 11.6% on the rent level.

However, the effect is only relevant for building with a rank 70+ on prestige level. In other words prestige is only relevant in the high-end of the market (rents above Ln5.50 approx. 280 pesos/M² or 20.74 USD)
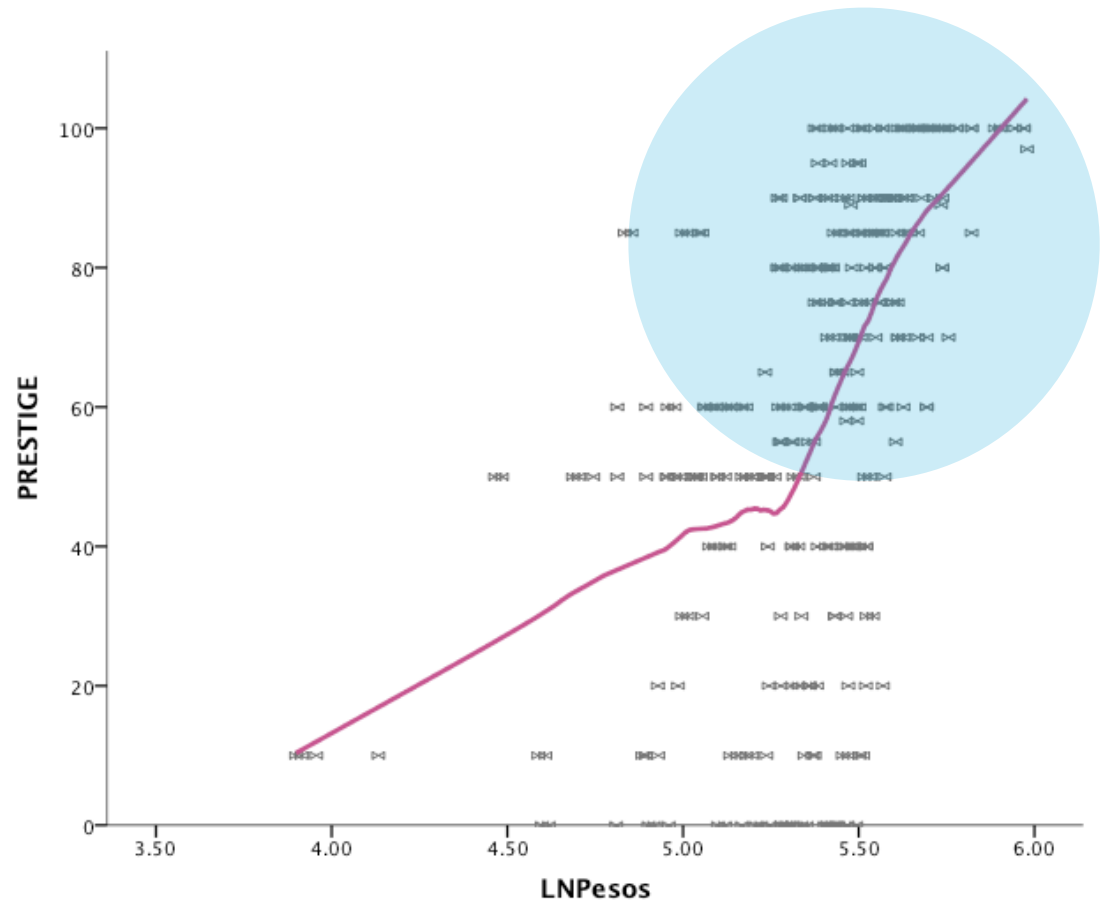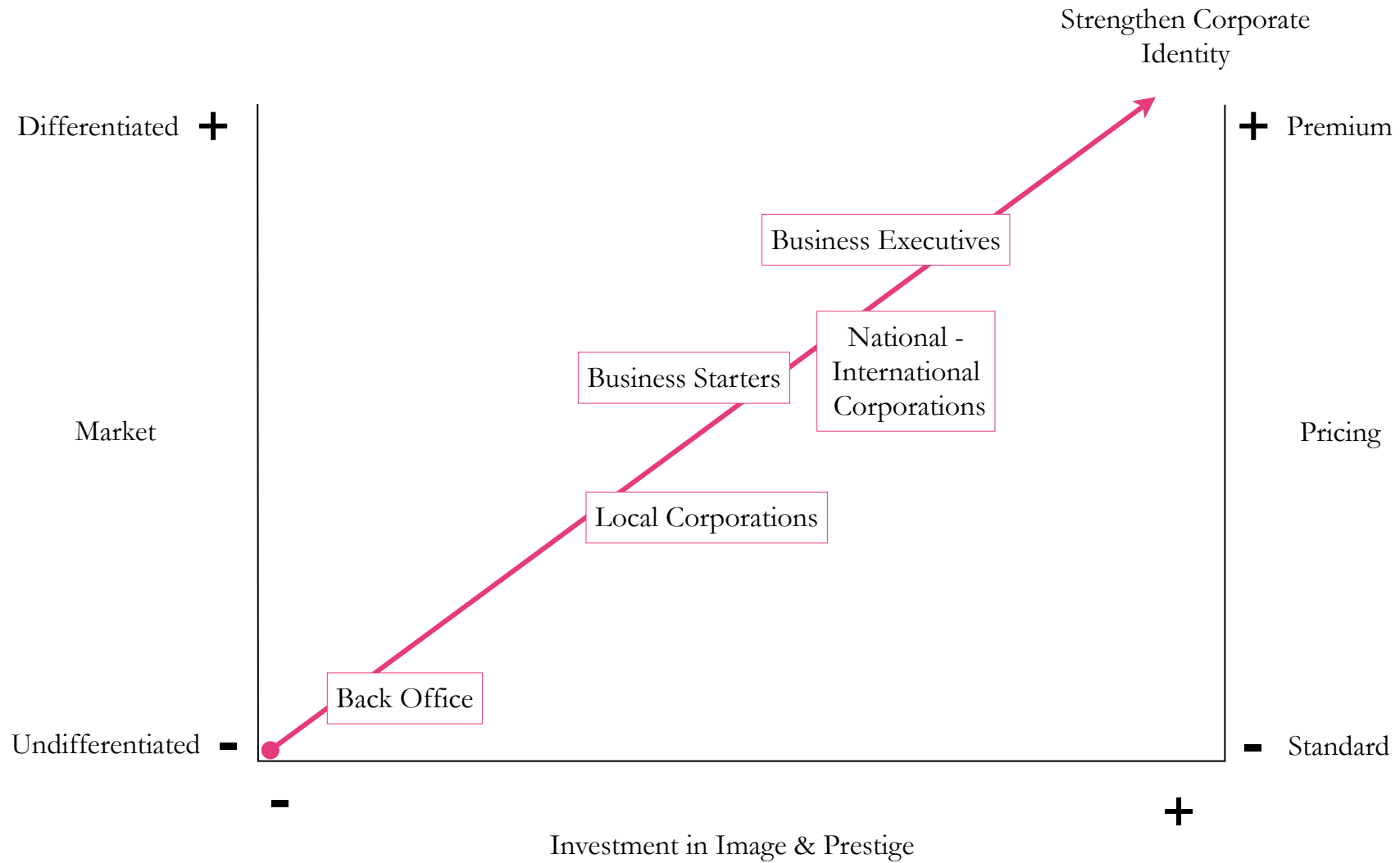
C o n c l u s i o n s :

Supply Driven - Market
More Questions than answers... The market seems to be driven by how developers are pricing their buildings, which according to the results seems not really based on building or location features but rather on gut feeling and irrational over-pricing strategies.
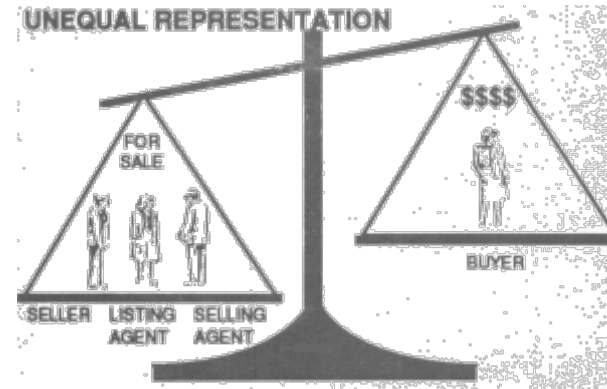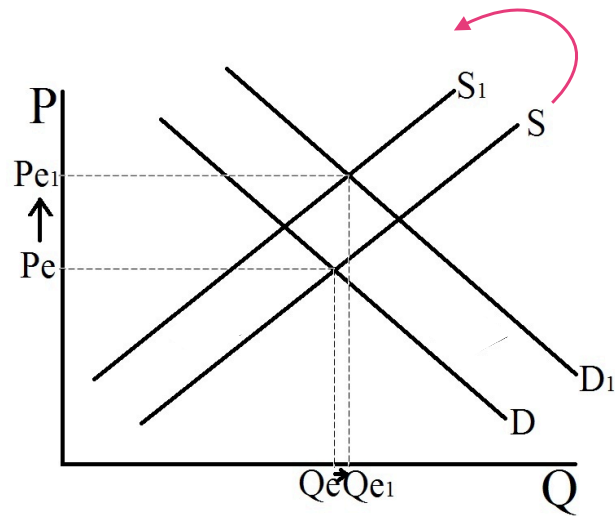
It is no surprise, but real estate is a difficult market to price and value. The unequal representation (a lot of intermediaries) in the business explains the difficulty to arrive to transparent and achieve a perfect market.
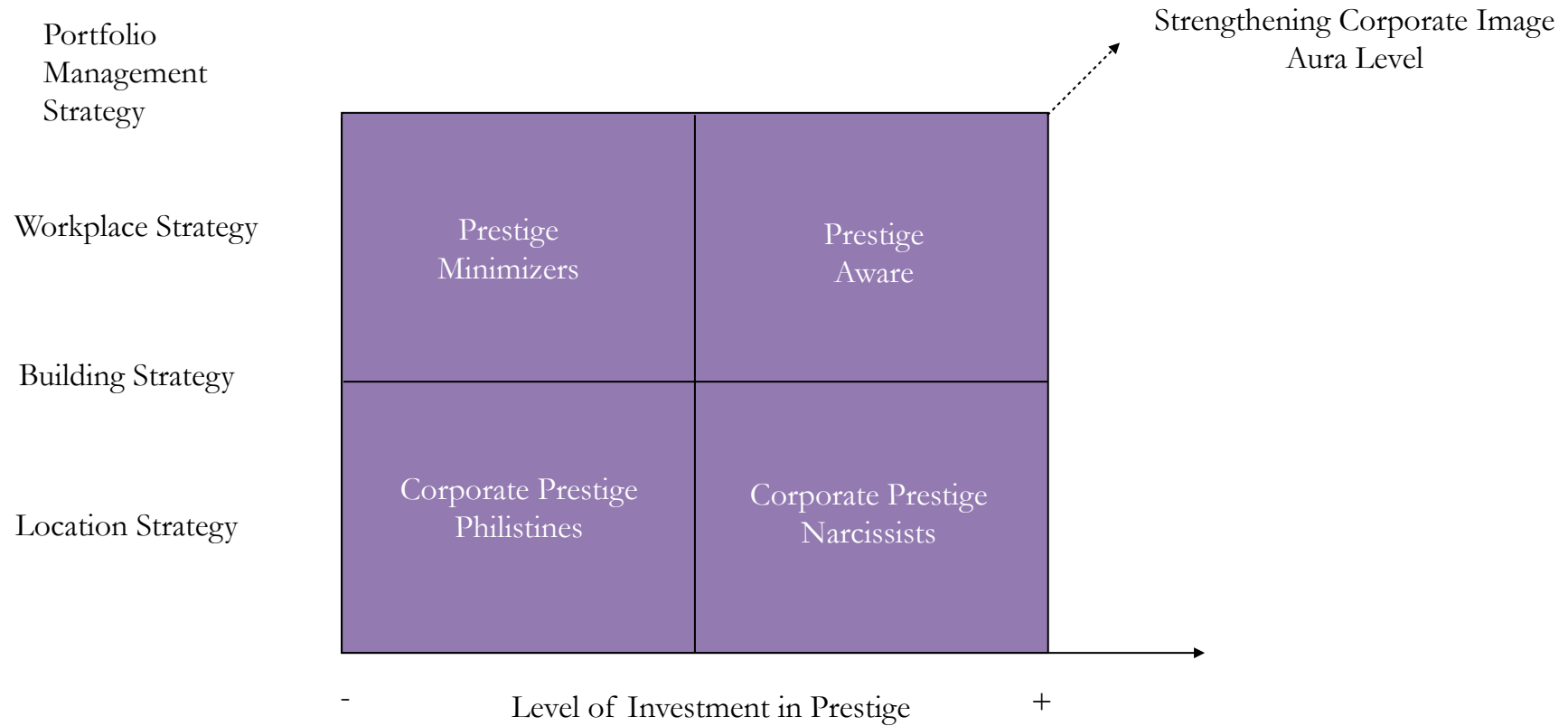
Conclusions:

Conclusions:

Quadrant for brokers and development processes.
By identifying the corporations position towards prestige and image, they could build better targeted solutions for the market in the correct level of investment to strengthen corporate identity.

Portfolio
Management
Strategy

Workplace Strategy

Building Strategy

Location Strategy

Strengthening Corporate Image
Aura Level

Prestige Minimizers	Prestige Aware
Corporate Prestige Philistines	Corporate Prestige Narcissists

−   Level of Investment in Prestige   +

¿ PREGUNTAS ?

¡ Gracias !