International Journal of Strategic Property Management
ISSN: 1648-715X / eISSN: 1648-9179
2018 Volume 22 Issue 1
https://doi.org/10.3846/ijspm.2018.320

Supplementary material

TOWARDS HOUSING POLICIES THAT CONSIDER HOUSEHOLD'S PREFERENCES: ESTIMATING THE DEMAND FOR HOUSING ATTRIBUTES IN CHILE

Esteban LOPEZ, Dusan PAREDES

ANNEX A. Housing features index construction

A.1. Housing features index based on factor analysis

Table A.1 Factor analysis summary table of results

Factor analysis/correlation		Number of obs:		33733
Method: principal factors		Retained factors:		1
Rotation: (unrotated)		Number of parameters:		5
Factor	Eigenvalue	Difference	Proportion	Cumulative
Factor1	**0.88175**	0.8841	1.7124	1.7124
Factor2	–0.00235	0.04871	–0.0046	1.7079
Factor3	–0.05106	0.08572	–0.0992	1.6087
Factor4	–0.13678	0.03988	–0.2656	1.3431
Factor5	–0.17665	.	–0.3431	1
LR test: independent vs. saturated: chi2(10) = 1.0e+04 Prob>chi2 = 0.0000				
Factor loadings				
Variable	Factor1	Uniqueness		
Washer	0.4092	0.8325		
Refrigerator	0.1995	0.9602		
Landline	0.4556	0.7924		
Computer	0.4615	0.787		
Water Heater	0.5038	0.7462		

A.2. Housing features index based on Parsons (1986)

Parsons (1986) proposes a weighted average index resulting from a first step in which he computes a hedonic regression similar to equation (10) but were the complete set of housing attributes (Z=[A, F]) are now divided into two matrices with the regular housing attributes (A) plus a matrix of housing features variables (F) only, in our case: Washer, Refrigerator, Landline, Computer and Water Heater, yielding the following hedonic regression.

$$ln(P) = \alpha_0 + \sum_j \alpha_j A_j + \sum_s \alpha_s F_s + \varepsilon \quad \text{(A.2.1)}$$

Once this regression was estimated, the Housing Features index for an individual i is estimated by:

$$HF_i = \sum_s \hat{\alpha}_s F_s \,/\, \text{mean}\left[\sum_s \hat{\alpha}_s F_s\right] \quad \text{(A.2.2)}$$

As a way to provide a robustness check, Table A.2.2. shows the results of the hedonic regressions proposed in equation (10) using the Housing Features index based on Parsons (1986) and which can be compared with Table 3. As the reader can see, all coefficients are consistent between the two tables.

References

Parsons, G. R. (1986). An almost ideal demand system for housing attributes. *Southern Economic Journal, 53*(2), 347-363. https://doi.org/10.2307/1059418

Table A.2.2. Hedonic regressions with housing features based on Parsons (1986)
Dependent variable: log(*Rent Price*)

Variable	Tarapacá (I)	Antofagasta (II)	Atacama (III)	Coquimbo (IV)	Valparaiso (V)	O'Higgins (VI)	Maule (VII)	Biobio (VIII)	Araucanía (IX)	Los Lagos (X)	Aysén (XI)	Magallanes (XII)	Metropolitana (R.M)
HS	0.0547	0.0446	0.0922	0.134	0.130	0.142	0.132	0.116	0.130	0.0707	0.0706	0.0785	0.0919
	(0.0125)	(0.0146)	(0.0188)	(0.0138)	(0.0103)	(0.00999)	(0.0117)	(0.0127)	(0.0177)	(0.00853)	(0.0173)	(0.0212)	(0.00627)
HQ	0.792	2.370	1.270	1.009	0.438	0.738	1.076	0.790	0.860	1.366	0.703	0.793	0.960
	(0.279)	(0.41)	(0.346)	(0.225)	(0.159)	(0.142)	(0.173)	(0.206)	(0.179)	(0.16)	(0.333)	(0.3)	(0.0985)
HF	0.262	0.270	0.228	0.230	0.221	0.155	0.263	0.220	0.283	0.191	0.207	0.167	0.203
	(0.0334)	(0.0363)	(0.0468)	(0.0284)	(0.0215)	(0.026)	(0.0246)	(0.0305)	(0.0374)	(0.0246)	(0.048)	(0.042)	(0.0132)
HL	0.0314	0.0301	0.0380	0.0406	0.0430	0.0410	0.0422	0.0484	0.0305	0.0303	0.0337	0.0410	0.0456
	(.00616)	(0.00743)	(0.00777)	(0.0043)	(0.00309)	(0.00437)	(0.00421)	(0.00533)	(0.00588)	(0.00377)	(0.00647)	(0.00907)	(0.00193)
Year2003D	–0.139	0.0509	–0.0676	–0.0172	–0.0248	–0.0527	–0.0672	–0.0254	–0.00825	–0.0189	0.0817	–0.0642	–0.00629
	(0.0693)	(0.0661)	(0.0792)	(0.0565)	(0.0298)	(0.048)	(0.0452)	(0.0363)	(0.0667)	(0.048)	(0.0736)	(0.113)	(0.0188)
Year2006D	–0.0939	0.0741	–0.0244	0.0389	–0.0183	–0.00401	–0.0466	–0.0012	–0.132	–0.00288	0.139	–0.0575	0.0266
	(0.0716)	(0.071)	(0.0769)	(0.0576)	(0.0291)	(0.0484)	(0.0393)	(0.0323)	(0.0542)	(0.0477)	(0.07)	(0.109)	(0.0197)
Year2009D	–0.0387	0.383	0.0996	0.201	0.117	0.130	0.0621	0.0515	–0.0178	0.151	0.372	0.0699	0.159
	(0.0711)	(0.0723)	(0.0834)	(0.0548)	(0.0312)	(0.0447)	(0.0444)	(0.0439)	(0.0539)	(0.0495)	(0.0678)	(0.105)	(0.0202)
Year2011D	–0.0446	0.11	0.229	–0.0228	0.0789	0.130	–0.213	–0.0137	–0.241	–0.546	0.168	0.0168	0.0343
	(0.091)	(0.0894)	(0.0993)	(0.0682)	(0.0511)	(0.0565)	(0.061)	(0.0745)	(0.0872)	(0.108)	(0.129)	(0.182)	(0.0282)
HouseTypeB	–0.181	0.0459	–0.384	0.366	0.0461	–0.188	–0.191	0.191	0.029	–0.231	0.122	–0.371	0.108
	(0.0701)	(0.0709)	(0.14)	(0.111)	(0.0393)	(0.0403)	(0.0834)	(0.0531)	(0.0662)	(0.0772)	(0.198)	(0.155)	(0.0199)
HouseTypeC	–0.0080	0.748	0.128	0.371	0.300	0.0449	0.406	0.0327	0.197	0.0883	0.293	0.138	0.154
	(0.104)	(0.237)	(0.16)	(0.202)	(0.144)	(0.168)	(0.111)	(0.125)	(0.163)	(0.101)	(0.161)	(0.159)	(0.0557)
Zone	–0.0486	–0.709	–0.244	0.124	0.12	0.111	–0.00974	0.0211	–0.00875	–0.155	0.0685	–0.524	0.046
	(0.111)	(0.142)	(0.136)	(0.0918)	(0.0835)	(0.0596)	(0.0691)	(0.0872)	(0.076)	(0.0548)	(0.123)	(0.275)	(0.0654)
Constant	9.785	9.000	8.903	8.472	9.106	8.833	8.474	8.912	9.030	9.752	9.540	10.27	9.116
	(0.139)	(0.208)	(0.193)	(0.121)	(0.0807)	(0.0914)	(0.0714)	(0.0632)	(0.107)	(0.0722)	(0.108)	(0.316)	(0.0688)
N	2029	1678	979	1132	3917	1903	2168	4091	1925	3164	930	591	9204
R-sq	0.367	0.509	0.417	0.583	0.452	0.510	0.571	0.553	0.532	0.488	0.499	0.486	0.498

Standard errors in parentheses.