Managing Product Variety in a Competitive Environment:
An Empirical Investigation of Consumer Electronics Retailing
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ABSTRACT

Product variety is an important strategic tool that firms can use to attract customers and respond to competition. This study focuses on the retail industry and investigates how stores manage their product variety, contingent on the presence of competition and their actual distance from rivals. Using a unique data set that contains all Best Buy and Circuit City stores in the United States, the authors find that a store's product variety (i.e., number of stock-keeping units) increases if a rival store exists in its market but, in the presence of such competition, decreases when the rival store is collocated (within one mile of the focal store). Moreover, collocated rival stores tend to differentiate themselves by overlapping less in product range than do non-collocated rivals. This smaller and more differentiated product variety may be due to coordinated interactions between collocated stores. In summary, this article presents evidence of both coordination and competition in retailers' use of product variety.

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Online Appendix 2: Correlation Matrix of Variables
(N=1329, March 2006 Digital Camera Full Sample)

	Variables	1	2	3	4	5	6	7	8	9	10	11	12	13
1	PV	1.00												
2	Overlap	0.19	1.00											
3	COMP	0.19	0.17	1.00										
4	COLLOCATE	-0.03	-0.16	-0.54	1.00									
5	BESTBUY	-0.76	-0.05	-0.15	-0.12	1.00								
6	INCOME	0.10	0.11	0.40	-0.76	0.04	1.00							
7	POPDEN	0.05	0.11	0.40	-0.46	0.00	0.02	1.00						
8	COLLEGE	0.09	0.09	0.28	-0.62	0.03	0.68	0.05	1.00					
9	ADULT	0.06	0.06	-0.14	-0.10	-0.01	-0.12	0.04	0.41	1.00				
10	MALE	-0.06	-0.09	0.02	-0.35	0.01	0.27	-0.07	0.06	-0.23	1.00			
11	NONWHITE	0.00	0.10	0.42	-0.36	-0.03	-0.10	0.47	-0.14	-0.21	-0.05	1.00		
12	HHSIZE	0.00	0.04	0.13	-0.22	0.00	0.22	0.12	-0.29	-0.75	0.39	0.33	1.00	
13	SUPERURBAN	0.12	0.15	0.35	-0.64	0.01	0.43	0.43	0.23	-0.02	-0.01	0.25	0.25	1.00

Online Appendix 3: Probit Models in the First Stage (Models 1-11) [a]
(March 2006 Digital Camera Sample)

	All areas included		Superurban effect controlled		Only non-superurban areas included		Collocate $\leq$ 0.5 miles
	(1-1)	(2-1) (3-1)	(4-1)	(5-1) (6-1)	(7-1)	(8-1) (9-1)	(10-1) (11-1)
Dependent Variable	COMP	COLLOC-ATE	COMP	COLLOC-ATE	COMP	COLLOC-ATE	COLLOC-ATE
CONSTANT	-6.615	17.803***	-8.606	16.400***	-5.562	17.259***	16.596***
	(5.626)	(4.229)	(5.935)	(4.572)	(6.253)	(5.586)	(4.773)
BESTBUY	-0.354***	-0.057	-0.352***	-0.058	-0.346***	-0.043	-0.042
	(0.108)	(0.076)	(0.108)	(0.076)	(0.115)	(0.093)	(0.078)
INCOME	0.766*	-1.074***	0.935**	-0.953***	0.634	-1.106***	-0.923**
	(0.410)	(0.320)	(0.441)	(0.354)	(0.465)	(0.423)	(0.364)
POPDEN	3.346***	-0.071	3.371***	-0.058	3.364***	-0.117	-0.049
	(0.356)	(0.048)	(0.355)	(0.050)	(0.387)	(0.174)	(0.056)
COLLEGE	1.445	0.235	1.283	0.072	1.597	2.192*	0.709
	(1.415)	(1.102)	(1.424)	(1.120)	(1.499)	(1.343)	(1.164)
ADULT	-4.790*	-3.618*	-4.304	-3.160	-5.022*	-5.349*	-5.233**
	(2.807)	(2.122)	(2.838)	(2.196)	(3.038)	(2.902)	(2.309)
MALE	8.516	-6.614*	7.811	-7.259*	9.563	-2.979	-6.233
	(5.652)	(3.995)	(5.675)	(4.073)	(5.990)	(5.072)	(4.188)
NONWHITE	1.973***	-0.876***	1.988***	-0.834**	1.942***	-0.832*	-0.649*
	(0.498)	(0.333)	(0.499)	(0.337)	(0.527)	(0.440)	(0.351)
HHSIZE	-1.017**	0.038	-0.941**	0.078	-1.018**	-0.165	-0.014
	(0.410)	(0.293)	(0.416)	(0.297)	(0.4420)	(0.399)	(0.307)
SUPERURBAN			-0.204	-0.088			-0.037
			(0.189)	(0.109)			(0.116)
N	1329	1138 [b]	1329	1138 [b]	944	771 [c]	1138 [b]
Log-likelihood	-370.19	-756.51	-369.62	-756.19	-330.81	-495.64	-700.41

Notes: Standard errors in parenthesis.
***Significant at the 1% level. **Significant at the 5% level. *Significant at the 10% level.

[a] The first-stage Probit estimation of Models 1-11 is to predict $\hat{COMP}$ (the IV for COMP) and $\hat{COLLOCATE}$ (the IV for COLLOCATE). [b] The full sample has 1329 observations, and the competitive subsample contains 1138 observations. [c] The subsample that includes only non-superurban areas has 944 observations, among them 771 observations are in the category of competition.