Attraction Effect Beyond Experiments

How Dominant Brand Positioning Affects Marketing Effectiveness on Sales and Brand Attitudes

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Attraction Effect

What is Attraction Effect?

Toaster **F**:
Not wide enough for bagels
$49

Toaster **C**:
Wide enough for bagels
$69

Which toaster would you choose?

"Regularity" axiom in Rational Choice Theory

- The regularity condition requires that if A is a subset of (i.e., includes fewer options than) B, the probability of choosing any option X from A must not be less than from B.
  - One cannot increase the probability of choosing an alternative by adding another alternative to the choice set.
- Not to suggest a tool for marketing practice.
  - However, as marketing scholars interested in understanding choice processes, they elected to use consumer products in constructing the stimuli.
- Vacation deals: price & hotel quality *(Moran and Meyer 2006)*;
- Orange juice: price & quality rating (*Zhou, Kim and Laroche 1996)*;
- Cars: quality of ride, fuel (*Bargava, Kim and Srivastava 2000*);
- MBA candidate: GMAT & GPA *(Dhar and Glazer 1996)*

Attraction Effect

What is Attraction Effect?

Toaster **F**:
Not wide enough for bagels
$49

Toaster **D**:
Not wide enough for bagels
$55

Toaster **C**:
Wide enough for bagels
$69

Which toaster would you choose?

The "attraction effect" suggests that **Toaster F** is more likely to be chosen when the dominated (decoy) option, Toaster D, is added to the choice set. *(Huber, Payne & Puto 1998).*

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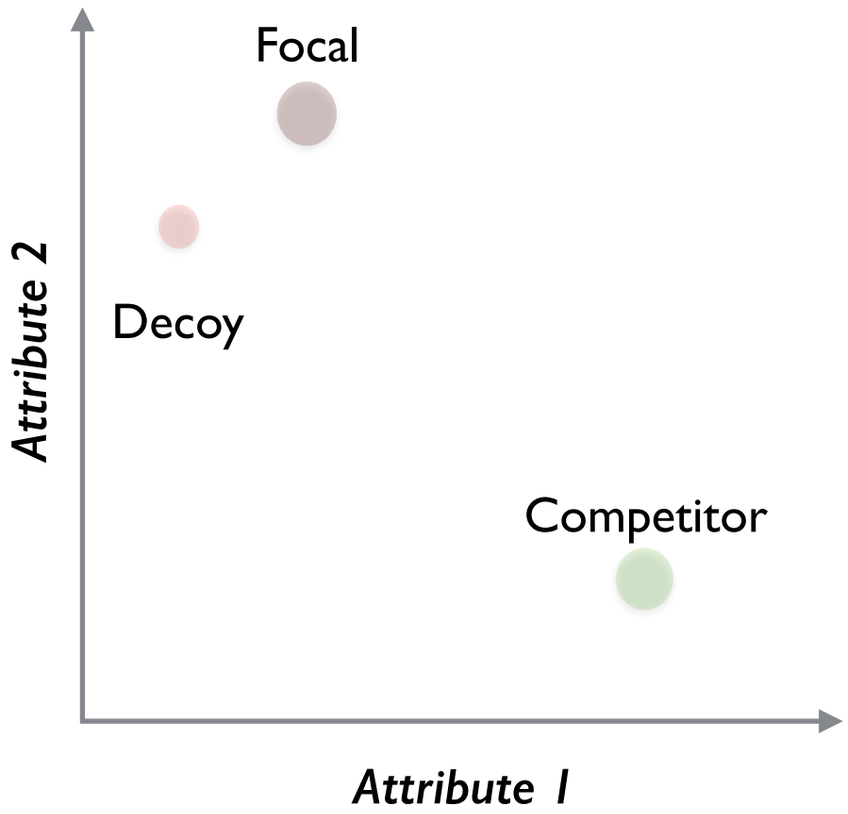
Previous Research

- Experimental work: controlled setting
- Dominated alternative: exists vs. does not exist
- Only 2 or 3 competing brands in the choice set
- Choice decisions (behaviors) are observed, not the attitudes

- "No strong reason to expect that the psychological processes evoked by stylized stimuli are similar to those evoked by more realistic stimuli" *(Frederic, Lee and Baskin 2014, JMR)*
- *Yang and Lynn (2014, JMR)* report many other studies that also fail to obtain an attraction effect, leading the authors to question the practical implications of the attraction effect as well and conclude that the field of marketing should ensure that research is "relevant to marketing practice" (p. 513).



Any Dominated Brands in Marketplace?

Staybridge Suites Atlanta - Buckhead ★★★½
Atlanta (Midtown - Piedmont) Map
1-866-599-6675 • Expedia Rate ✔Free Cancellation
Booked in the last 23 hours

Excellent! 4.3/5
(127 reviews)
$169
avg/night

Norton from symantec
$80
Norton Internet Security
5.0
Buy Now

The Georgian Terrace Hotel ★★★
Atlanta (Midtown - Piedmont) Map
1-866-267-9053 • Expedia Rate ✔Free Cancellation
Booked in the last 3 hours

Very good! 4.2/5
(1850 reviews)
$189
avg/night
✔ Book Now, Pay Later

McAfee Proven Security
$118
McAfee Total Protection
4.0
Buy Now

Four Seasons Hotel Atlanta ★★★★★
Atlanta (Midtown - Piedmont) Map
1-866-263-3710 • Expedia Rate ✔Free Cancellation
Booked in the last 11 hours

Exceptional! 4.7/5
(203 reviews)
$449
avg/night

ZoneAlarm by Check Point
$55
ZoneAlarm Extreme Security
3.0
Buy Now

Electrolux
EWMED70JIW
Electric Dryer
$1,549
99

LG DLEX8000W
Electric Dryer
$1,399
97

Samsung
DV433ETGJWR/A1
Electric Dryer
$1,299
98

Red lines indicate the dominated (decoy) brands in given choice sets; source: findthebest.com; expedia.com

This Research

RQ: Can we quantify the superior-relative position of a brand, i.e. dominance effect, on consumers' buying decisions?

- Conducts an econometric analysis of how perceptions of ***relative brand positioning*** influence consumer responses to brand actions
    - Assuming that quality and price are the two major dimensions, each brand is positioned on a product space
        - Operationalizes a measure of *dominance* according to the positioning of brands in this product space (*3 types of dominance*)

- Examines whether and how ***marketing mix effectiveness*** changes due to dominance effect

★ Secondary data
  - Laundry detergent, over 10-year period

★ Actual buying behavior (sales)

★ Additionally, attitudinal measures (i.e., consideration and liking of a brand)

★ Control for the impact of other brands in the category (not only 2-3 brands)

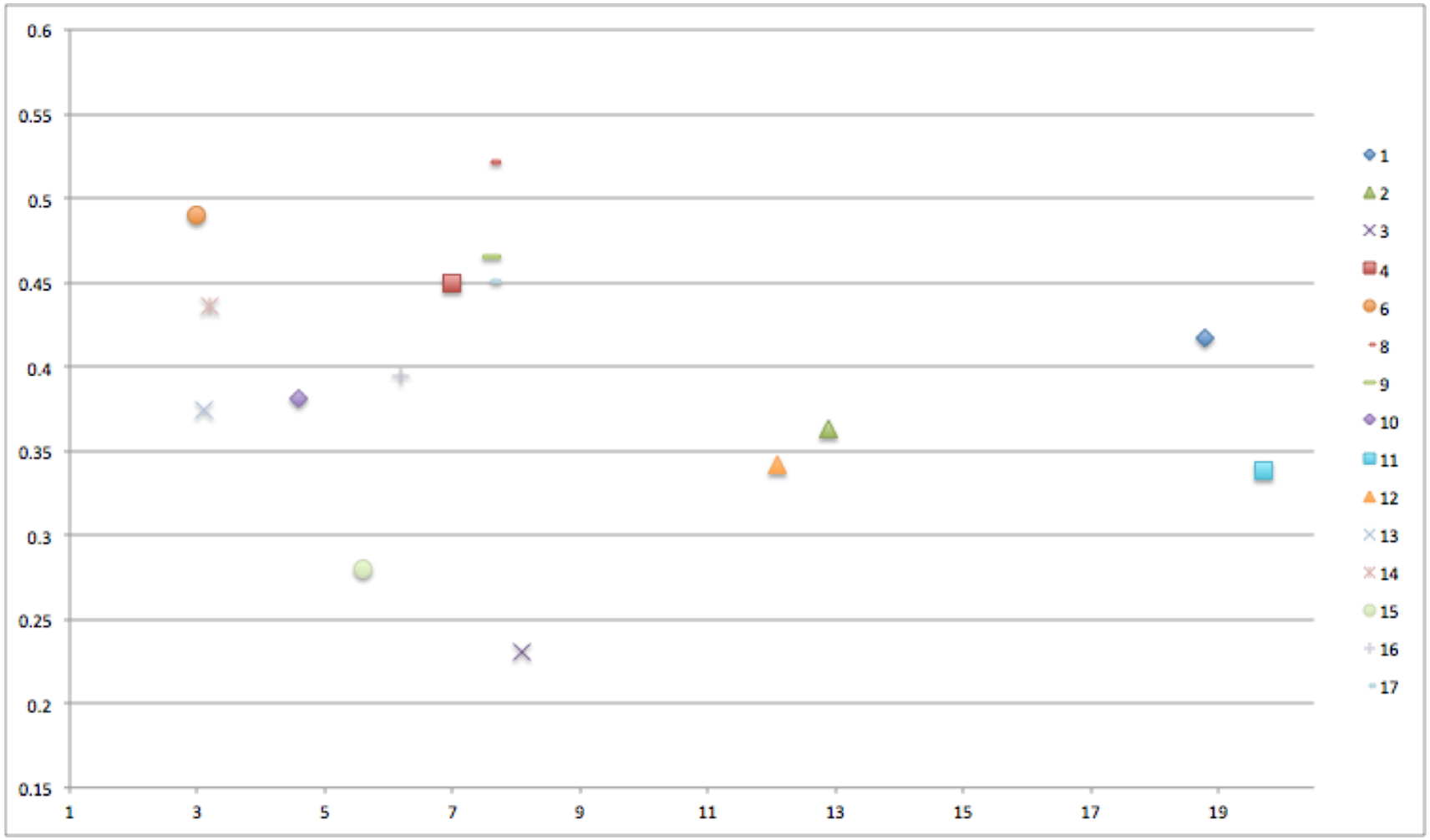
★ Observe the differential responses of HP-HQ vs. LP-LQ brands to dominance effect

Data & Product Space

- Four-weekly data, over 10 years *(from 2001 to 2010)*
- Laundry detergent category, with 16 brands

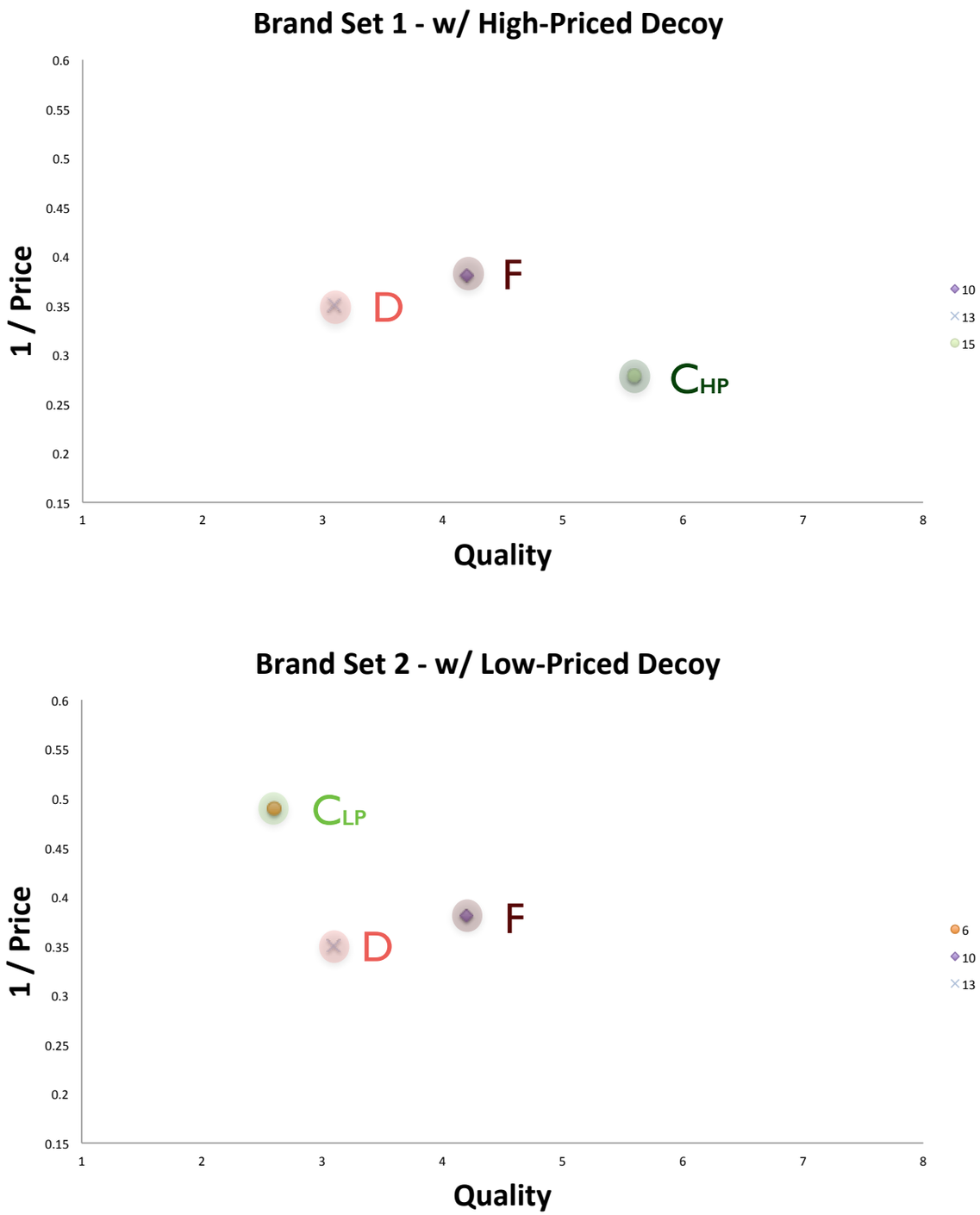
  - Sales
  - Brand quality (*constant*)
  - Competition
    - *average - weighted with sales*

- Marketing Mix:
  - Price, promotion, advertising, distribution
- Mindset Metrics:
  - Brand consideration: % answers from the sentence “brands that you have in your mind when you are going to buy”
  - Brand liking: average liking score of the brand



16 brands plotted on the price-quality product space

Brand Sets & Price-Quality Tiers



- All of the brands were plotted on the product space that has two dimensions: **price** and **quality**.
- Each **brand set** is composed of 3 brands: **decoy - focal - competitor**

(1) Focal and competitor are equally attractive

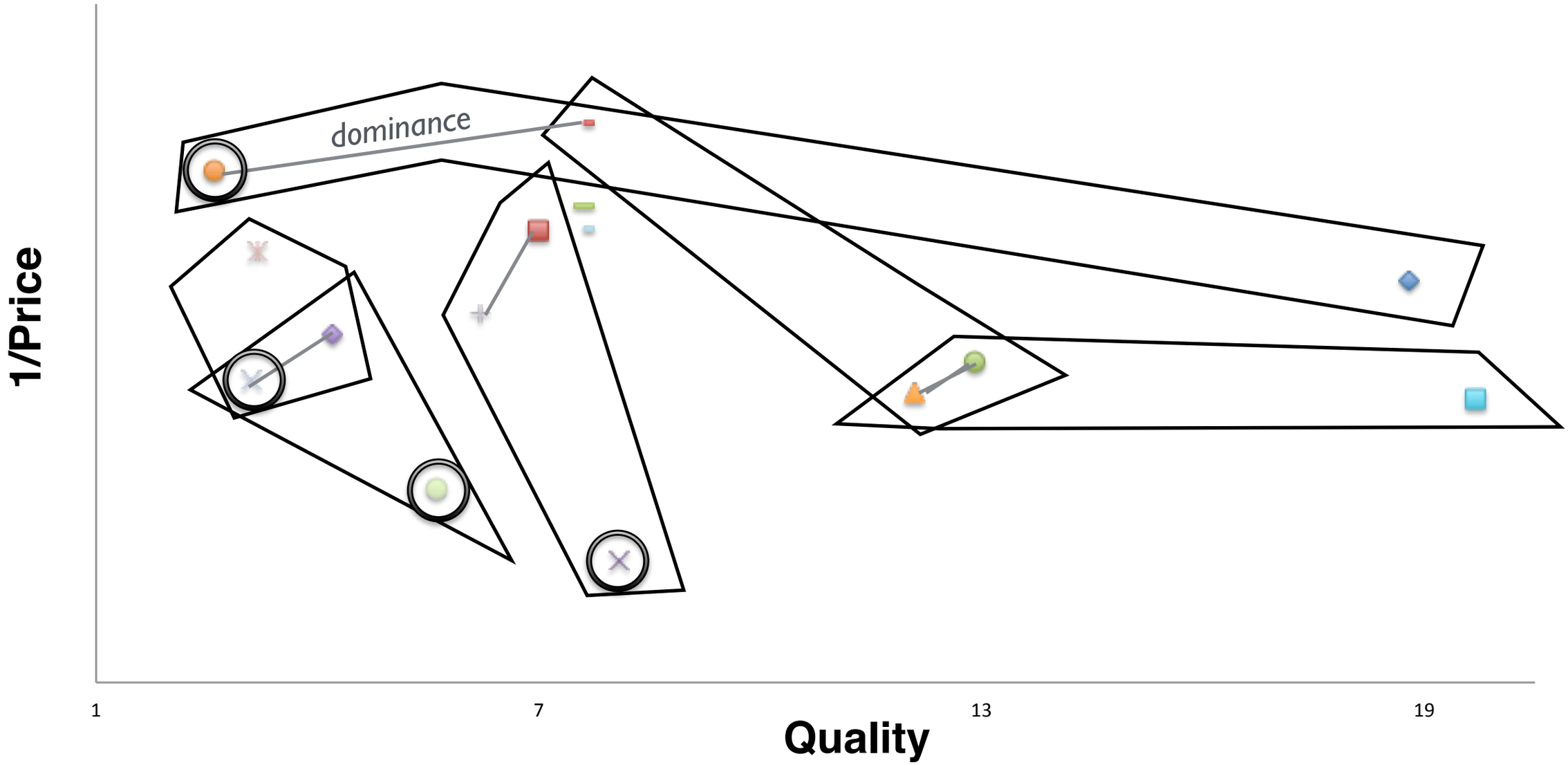
(1) Decoy is dominated by the focal but not the competitor

(2) Decoy is dominated by the focal and also by the competitor

(2) Dominance varies across brand sets

- HP-HQ Focal [HP-HQ Decoy] —> LP-LQ Competitor (*Brand Set 1*)
- LP-LQ Focal [LP-LQ Decoy] —> HP-HQ Competitor (*Brand Set 2*)

How to Define Dominance?



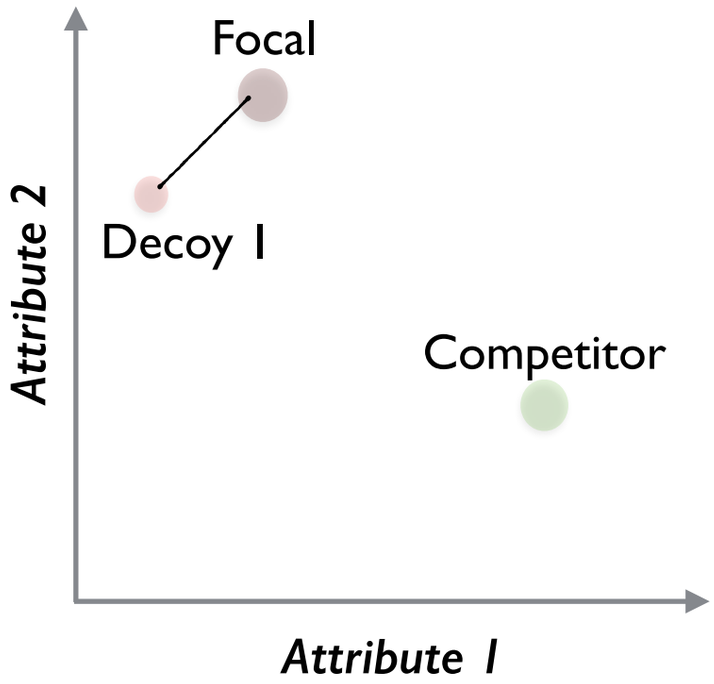
- 13 Focal Brands - *3 brands have no decoy*
- 8 Decoy brands
- 14 Competitors

- In total, there are 456 brand sets all of which has marketing actions, sales, attitudinal metrics data for the focal brand, the decoy and competitor

Brand Groups

Group 1:

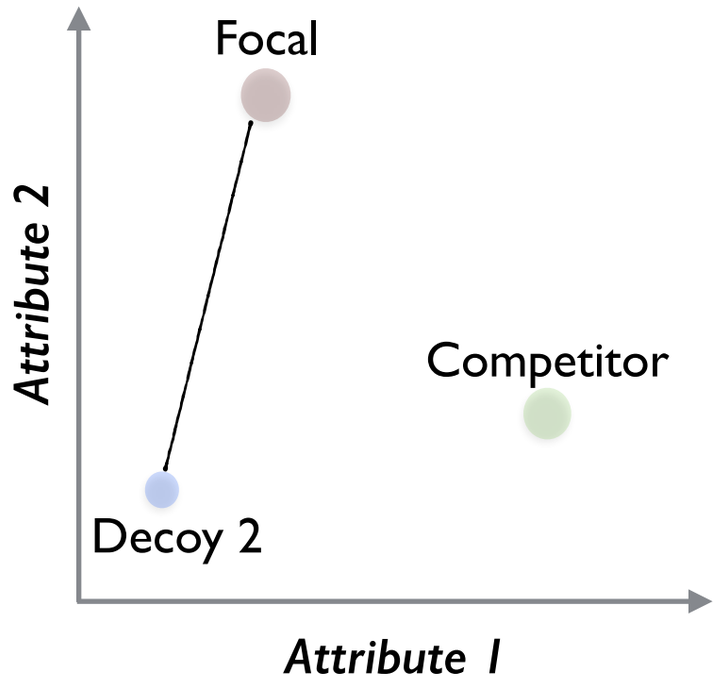
Decoy is dominated by the focal but not the competitor



(220)

Group 2:

Decoy is dominated by the focal and also by the competitor

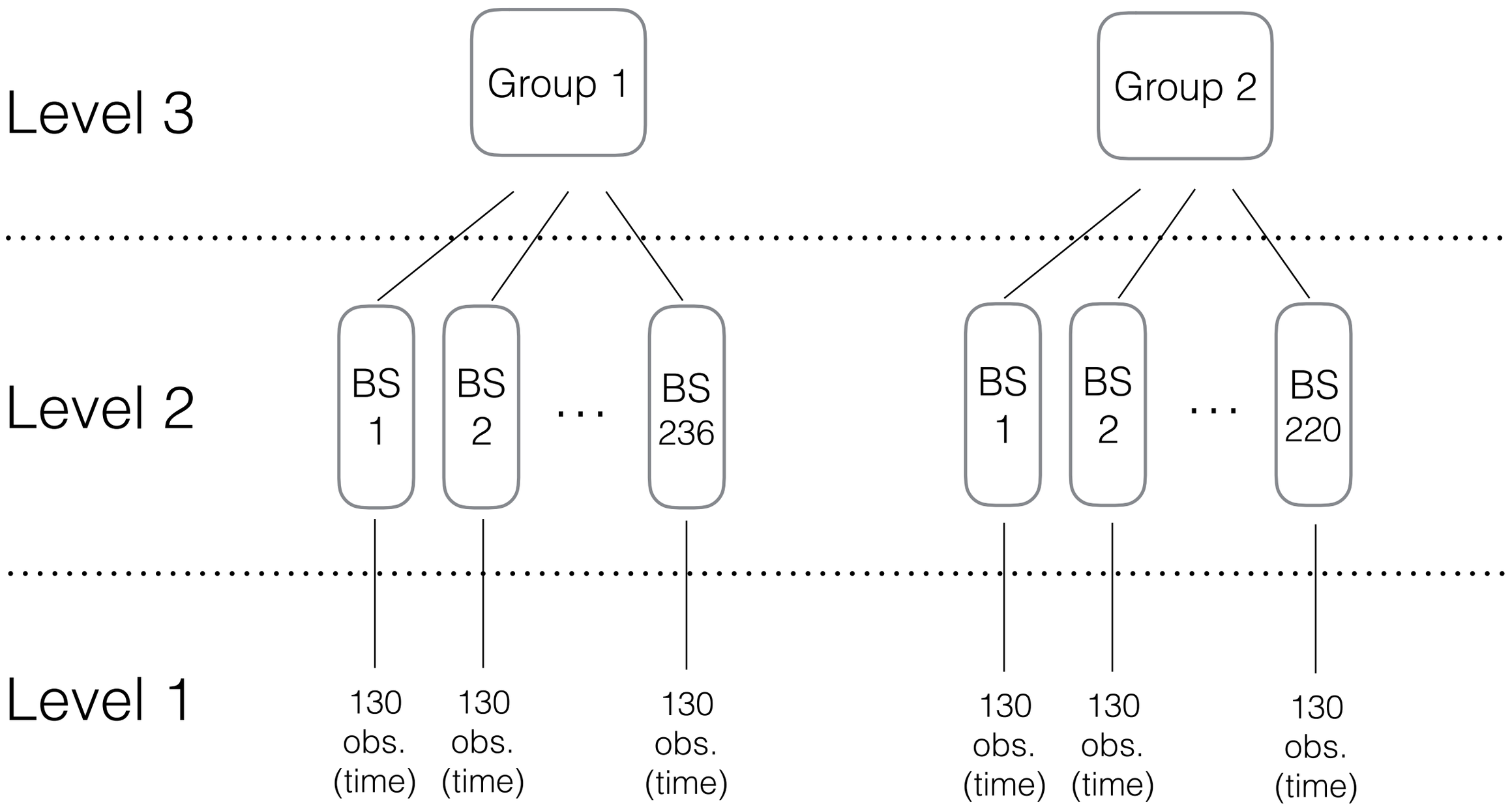


(236)

Brand Groups - Model Visualization

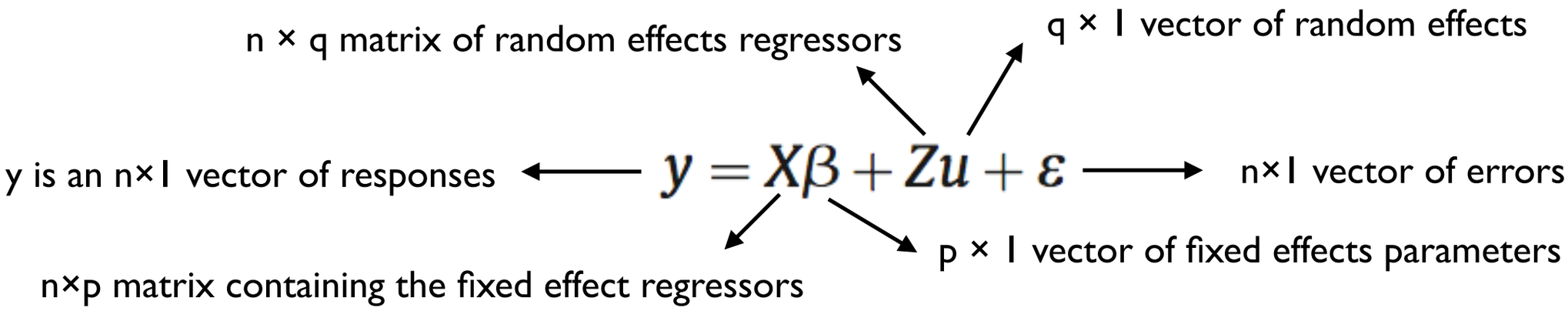
Decoy is dominated by the focal but not the competitor

Decoy is dominated by the focal and also by the competitor



Model

In matrix form, the general specification is:



- We allow for random effects at both the group and the brand-within-group levels

$$y_{ijk} = \alpha + \beta_{ij[k]} X_{ijk} + \zeta_{jk}^{(2)} + \zeta_{k}^{(3)} + \varepsilon_{ijk}$$

where,

i is for time series observations, j for brand sets and k for groups

$\zeta_k^{(3)}$ is the random intercept for groups k

$\zeta_{jk}^{(2)}$ is the random intercept for brand j and groups k

ε_{ijk} is the residual error

$\beta_{ij[k]}$ are the coefficients of interest

Variance Decomposition

- HLM vs. OLS
  - For each of the HLM models, the likelihood ratio (LR) test suggests the HLM (fixed and random specification) is superior to conventional regression (fixed effects only)
- 2-level vs. 3-level
  - The 3-level HLM model out-performs the 2-level model, justifying the groups as a third level
- Random-intercept vs. random-intercept and random-slope
  - We chose the higher likelihood model from between
    1) the varying- intercept model and
    2) the varying-intercept and varying-coefficient model

Variance partition coefficients (in percentages) for all HLM models

	Sales Model	Consideration Model	Liking Model
Group	40.46%	39.53%	2.44%
Brand Set	47.40%	44.19%	92.0%
Residual	12.14%	16.28%	5.57%

Attraction Effect on Sales

	Model 1 (DV = Log Sales)			
	Coefficient	*SE*	*z*	p > |z|
Fixed effects				
α	-2.75	0.18	-15.3	0.00
Lagged_Sales	0.34	0.00	3400	0.00
Log_Price	-0.89	0.06	-14.8	0.00
Log_Advertising	0.00	0.00	1.00	0.32
Log_Promotion	0.07	0.01	7.00	0.00
Log_Distribution	0.26	0.08	3.3	0.00
Log_Consideration	0.25	0.01	25.0	0.00
Log_Liking	0.11	0.01	11.0	0.00
Log Dominance	0.47	0.05	9.40	0.00
Random effects				
$\psi^{(2)}$	0.82			
$\psi^{(3)}$	0.21			
$\sigma_{\beta\,(Log\_price)}$	0.18			
$\sigma_{\beta\,(Log\_advertising)}$	0.02			
$\sigma_{\beta\,(Log\_promotion)}$	0.22			
$\sigma_{\beta\,(Log\_dominance)}$	0.07			
ϑ	0.36			
Log likelihood	− 327.674			
LR test	$\chi 2 =$ 262.61, prob > $\chi 2 =$ 0.000			

Attraction Effect on Brand Consideration

	Model 2 (DV = Log Consideration)			
	Coefficient	*SE*	*z*	p > |z|
Fixed effects				
α	0.69	0.03	23.00	0.00
Lagged_Cons	0.21	0.00	2100	0.00
Log_Price	-0.10	0.03	-3.33	0.00
Log_Advertising	0.00	0.00	1.00	0.32
Log_Promotion	-0.01	0.01	-1.00	0.32
Log_Distribution	0.22	0.03	7.33	0.00
Log_Liking	0.54	0.00	5400	0.00
Log Dominance	-0.07	0.01	-7.00	0.00
Random effects				
$\psi^{(2)}$	0.19			
$\psi^{(3)}$	0.07			
$\sigma_{\beta\,(Log\_price)}$	0.04			
$\sigma_{\beta\,(Log\_advertising)}$	0			
$\sigma_{\beta\,(Log\_promotion)}$	0.03			
$\sigma_{\beta\,(Log\_dominance)}$	0.03			
ϑ	0.13			
Log likelihood	− 35.282			
LR test	$\chi 2 =$ 711.90 prob > $\chi 2 =$ 0.000			

Attraction Effect on Brand Liking

	Model 3 (DV = Log Liking)			
	Coefficient	*SE*	*z*	p > |z|
Fixed effects				
α	-0.62	0.06	-10.3	0.00
Lagged_Liking	0.34	0.00	3400	0.00
Log_Price	-0.09	0.02	-4.50	0.00
Log_Advertising	0.00	0.00	1.00	0.32
Log_Promotion	0.04	0.01	4.00	0.00
Log_Distribution	-0.20	0.03	-6.67	0.00
Log_Consideration	0.43	0.00	4300	0.00
Log Dominance	0.07	0.01	7.00	0.00
Random effects				
$\psi^{(2)}$	0.19			
$\psi^{(3)}$	0.08			
$\sigma_{\beta\,(Log\_price)}$	0.08			
$\sigma_{\beta\,(Log\_advertising)}$	0			
$\sigma_{\beta\,(Log\_promotion)}$	0.07			
$\sigma_{\beta\,(Log\_dominance)}$	0.02			
ϑ	0.11			
Log likelihood	574.901			
LR test	$\chi 2 =$ 381.15 prob > $\chi 2 =$ 0.000			

Elasticity Estimates

Combining fixed and random effects for Groups

	Model 1 (DV = Log Sales)		Model 2 (DV = Log Cons)		Model 3 (DV = Log Liking)	
	Dominated by:		Dominated by:		Dominated by:	
	Only Focal	Both Focal & Decoy	Only Focal	Both Focal & Decoy	Only Focal	Both Focal & Decoy
	(Group 1)	*(Group 2)*	*(Group 1)*	*(Group 2)*	*(Group 1)*	*(Group 2)*
α	**-2.863**	**-2.637**	**0.608**	**0.652**	**-0.520**	-0.620
Log_Price	**-0.771**	-1.009	**-0.090**	-0.110	**-0.083**	-0.097
Log_Advertising	0.000	0.000	0.000	0.000	0.000	0.000
Log_Promotion	**0.054**	**0.086**	0.000	0.000	**-0.002**	**0.002**
Log_Dominance_HPHQ	**-0.083**	-0.157	**-0.021**	**-0.019**	**0.218**	**0.242**
Log_Dominance_LPLQ	**0.507**	0.433	**-0.021**	-0.019	**0.058**	**0.082**

Bold indicates significant; regular insignificant
Green indicates significant; red insignificant

Managerial Implications

(i) **Attraction effect is not limited to experimental settings:** if a brand (focal) dominates another brand (decoy) either on price or quality features, or on both, the focal brand seems more attractive than it would if there were no dominance relationship at all.

(ii) **Attraction effect exists also on attitudinal responses:** a stronger and opposite case of attraction effect is observed on liking than on brand consideration.

(iii) Brand sales appear to be less responsive to price increases in the presence of **dominance;** however promotions is less effective as well.

(iv) **Attraction effect has no impact on promotion and advertising effectiveness**

(v) There is a significant difference between **low-price-low-quality** and **high-price-high-quality** brands in terms of attraction effect.

(vi) **Low-price-low-quality focal brand** hurts **high-price-high-quality competitor** due to dominance, yet this damage reveals itself only on attitudinal metrics, not directly on sales. Therefore, it would be reasonable to assume that decrease in favorable attitudes for competitors will affect competitive sales negatively in the long-run.