Supplementary Materials

A.1 Formal Discussion of the Study Design

In this appendix, we formally define the concepts of masking and satisficing based on the potential outcomes framework for causal inference. We then justify our study design based on the formalization. We clarify the assumptions required for the proposed study design to identify satisficing and then discuss possible approaches for testing the assumptions, tests which we implement in our empirical study.

A.1.1 Masking

Suppose that we have L core attributes of interest and our goal is to estimate the causal effect of those attributes on a conjoint survey response denoted by Y_i for respondent $i \in \{1, ..., N\}$. For the sake of simplicity, we assume that the attributes are all binary, such that the values of the core attributes assigned to respondent i can be fully represented by a vector of L binary indicator variables, $D_i \equiv [D_{1i}, ..., D_{Li}]^\top$. Using the potential outcomes framework, we can denote the value of the outcome variable that would be realized for respondent i given a pair of conjoint profiles $D_i = d$ by $Y_i(d)$ or $Y_i(d_1, ..., d_L)$. (Note that we make the dependence of the potential outcomes on other profiles in the same conjoint task implicit.) Following Hainmueller et al. (2014) (hereafter HHY), the AMCE for the first core attribute can be defined as

$$\tau_1 \ \equiv \ \mathbb{E}[\tau_{1i}] \ \equiv \ \mathbb{E}[Y_i(1, D_{(-1)i}) - Y_i(0, D_{(-1)i})],$$

where $D_{(-1)i}$ represents the values of the core attributes for respondent i excluding the first attribute. The AMCEs for the other $L - 1$ core attributes can be analogously defined. HHY show that, under the completely independent randomization of all attributes (Assumption 5, HHY), the AMCE of each of these attributes can be identified by the population ordinary least squares (OLS) regression of the observed outcome Y_i on D_i, i.e. $L(Y_i|D_i) = \tau_0 + \tau^\top D_i$ where $\tau = [\tau_1, ..., \tau_L]^\top$ and $L(\cdot|\cdot)$ is the linear projection operator.

Now, suppose that we are interested in the AMCE of D_i *conditional on the design* that includes another set of M attributes $F_i \equiv [F_{1i}, ..., F_{Mi}]^\top$, which we call the filler attributes. That is, our quantity of interest is the average causal effects of the core attributes when respondents are also given information about the filler attributes. Under the assumptions discussed below, this quantity of interest can be written as $\beta \equiv \mathbb{E}[\beta_i]$ such that

$$Y_i(d) = \beta_0 + \beta_i^\top d + \gamma_i^\top F_i + \varepsilon_i, \tag{1}$$

where $\mathbb{E}[\varepsilon_i] = 0$. One obvious approach to identifying β is to implement a fully randomized conjoint experiment with the design of interest, i.e. include both D_i and F_i in the design with completely independent randomization. The population OLS regression of Y_i on D_i (or on D_i and F_i) will identify β because the actual D_i and F_i will be uncorrelated with either ε_i or each other.

In practice, however, researchers may wish to avoid this approach because of concerns about satisficing, as we discuss in the main text. Suppose instead that we use the conjoint design with only D_i as included attributes. The values of the filler attributes for respondent i will then not be assigned by the design, but *mentally imputed* by respondents based on their perceived association between the core and filler attributes. Denote the imputed values of the filler attributes given the core attributes d by $F_i(d)$, such that the potential outcome is now written as $Y_i(d) = \beta_0 + \beta_i^\top d + \gamma_i^\top F_i(d) + \varepsilon_i$. Under the assumption discussed below, the imputed value of the filler attributes can be expressed as,

$$F_i(d) = \alpha_0 + A_i d + \omega_i, \tag{2}$$

where A_i is a $M \times L$ matrix of parameters representing partial effects of D_i on F_i, α_0 is a vector of M intercepts and $\mathbb{E}[\omega_i] = 0$.

Masking can now be defined as $\tau - \beta$, i.e. the difference between the AMCE of D_i conditional on the design that includes D_i only and the true causal effect of interest—the AMCE of D_i conditional on the design that includes both D_i and F_i. Under the assumptions embedded in equations (1) and (2), masking for the first core attribute can be written as

$$\begin{aligned}
\tau_1 - \beta_1 &= \mathbb{E}[\tau_{1i} - \beta_{1i}] \\
&= \mathbb{E}[Y_i(1, D_{(-1)i}) - Y_i(0, D_{(-1)i}) - \beta_{1i}] \\
&= \mathbb{E}[(\beta_0 + \beta_{1i} + \beta_{(-1)i}^\top d_{-1} + \gamma_i^\top F_i(1, D_{(-1)i}) + \varepsilon_i) \\
&\qquad\qquad -(\beta_0 + \beta_{(-1)i}^\top d_{-1} + \gamma_i^\top F_i(0, D_{(-1)i}) + \varepsilon_i) - \beta_{1i}] \\
&= \mathbb{E}[\gamma_i^\top \left\{F_i(1, D_{(-1)i}) - F_i(0, D_{(-1)i})\right\}] \\
&= \mathbb{E}[\gamma_i^\top (\alpha_0 + A_{1i} + A_{(-1)i} d_{-1} + \omega_i - \alpha_0 - A_{(-1)i} d_{-1} - \omega_i)] \\
&= \mathbb{E}[\gamma_i^\top A_{1i}], \qquad (3)
\end{aligned}$$

and masking for the other $L - 1$ core attributes can be derived analogously. Equation (3) implies that β cannot be identified under the conjoint design that includes only the core attributes unless either of the following conditions is satisfied: (1) $\gamma_i = 0$, i.e., the filler attributes have no effect on the outcome for any respondent, or (2) $A_i = 0$, i.e., the core attributes have no perceived association with the filler attributes for any respondent.

A.1.2 Satisficing

Now, we consider the alternative identification strategy for β: including both D_i and F_i in the conjoint design. A practical concern for this approach is that including both D_i and F_i might cause *satisficing*, meaning that some respondents stop paying attention to the conjoint questions due to increased task difficulty. One way of formalizing the concept of satisficing under the current framework is to define it as a change in the data generating process for the observed outcome, such that it is no longer a function of the attributes. That is, respondent i is satisficing if the observed outcome Y_i does not equal the potential outcome $Y_i(d)$ given by equation (1). We note that this is a form of a Stable Unit Treatment Value Assumption (SUTVA) violation, because $Y_i \neq Y_i(d)$ even when $D_i = d$.

Satisficing generally causes attenuation bias in AMCE estimates that are otherwise unbiased. To see why, suppose that satisficing is of a form such that $Y_i \mid D_i \overset{i.i.d.}{\sim} L(y)$ where $L(y)$ is a probability distribution that does not depend on D_i, and that respondents randomly satisfice $100p$ percent of the time under the design with both the core and filler attributes but not under the core-only design, where the level of satisficing $p \in (0,1)$. Then, the population OLS regression of Y_i on D_i under the design including both the core and filler attributes will identify $(1-p)\beta$, which is attenuated towards zero compared to β (i.e. $|(1-p)\beta| < |\beta|$).

A.1.3 The Proposed Study Design

The above discussion implies that a naïve comparison of the AMCEs of the core attributes under the two designs—the core-only design and the design with both the core and filler attributes—will not isolate the amount of satisficing (i.e., p) because of the masking under the core-only design. A possible solution for this identification problem would entail utilizing the filler attributes that satisfy either of the no-masking conditions, i.e. $\gamma_i = 0$ or $A_i = 0$. Our proposed two-stage study design focuses on the second condition. More specifically, our first-stage experiment corresponds to empirically testing an observable implication of the second condition, $\mathbb{E}[A_i] = 0$. Indeed, this is a sufficient condition for no masking if we assume $\text{Cor}(\gamma_i, A_i) = 0$, i.e., if respondents' perceived association between D_i and F_i is uncorrelated with the effect of F_i on their conjoint responses. In other words, the tests in our first-stage experiment guarantee (with specified statistical uncertainty) that there is no masking for the core attributes caused by the filler attributes *unless* there exist respondents for whom $A_i \neq 0$ and they weigh those filler attributes systematically differently from the rest of the respondents in their conjoint responses. We call this latter (rather pathological) scenario *complex masking.* In Appendix A.6, we present empirical evidence that complex masking is highly unlikely in our experiment.

It is also important to note that the above discussion rests on a set of simplifying assumptions about the potential outcomes. Specifically, our model for the potential outcomes (i.e. equations (1) and (2)) assumes that there are no interaction effects on the outcome: 1) among any of the core attributes; 2) among any of the filler attributes; or 3) between any core and filler attributes. These assumptions are immaterial for the purpose of identifying filler attributes that cause no masking for the core attributes based on the proposed study design. However, we also assume that there are no interaction effects among the core attributes on the filler attributes, and this assumption is potentially consequential. Put differently, filler attributes could also cause masking if certain combinations of their values are perceived to be associated with the core attributes, even if those attributes are all individually unassociated. Appendix A.6 also empirically investigates the plausibility of this assumption, suggesting that it is indeed unlikely that such interactive association exists in respondents' perceptions.

A.2 Details of the First Stage, Study 1

Table A.1: Filler Attributes Tested in First Stage of Study 1

Attribute	Levels
Famous relative	Franklin Pierce, Chester Arthur, John Tyler, Zachary Taylor
Elementary school	Washington School, Jefferson School, Madison School
Favorite highway	Route 71, Route 73, Route 77, Route 79
Vacation spot	Crystal Lake, Twin Lake, Spring Lake, Long Lake
Marital Status	single, married, divorced
Ideology	liberal, conservative
Position on immigration policy	deport all unauthorized immigrants who are in the country illegally, allow unauthorized immigrants to stay but do not allow them to be citizens, allow all unauthorized immigrants to become citizens
Position on gun control	protect all Americans' right to have guns, restrict ownership of some guns
Education	high school degree, college degree, college degree from Ivy League university
Annual income	$75k, $180k, $290k
Prior elected office	none, governor, senator
Occupation	business owner, lawyer, high school teacher, car dealer
Gender	male, female
Military	did not serve, served
Race	white, African American, Asian American, Hispanic/Latino
Children	0, 1, 2, 3

Figure A.1 displays the results for the five filler attributes we tested that, in theory, should not be associated with the fixed attributes. The difference-in-means estimates are plotted in order of decreasing magnitude, with 95% confidence intervals constructed using standard errors that are clustered by respondent.[14] As the results show, the estimates for all five filler attributes are all substantively close to zero, with few estimates that are statistically significant. The estimate with the highest magnitude pertains to the marital status filler attribute, at approximately -0.055. While statistically distinguishable from zero, such a small effect is unlikely to contribute to a meaningful amount of masking, even if marital status had a sizable effect on candidate preferences.

[14] Because the age attribute in the first study included three levels, and hence two indicator variables, the difference between the two age indicators was also included in addition to the two age indicator variables themselves.

Figure A.1: Results from Study 1, first stage. Evidence of non-association between core attributes and filler attributes.

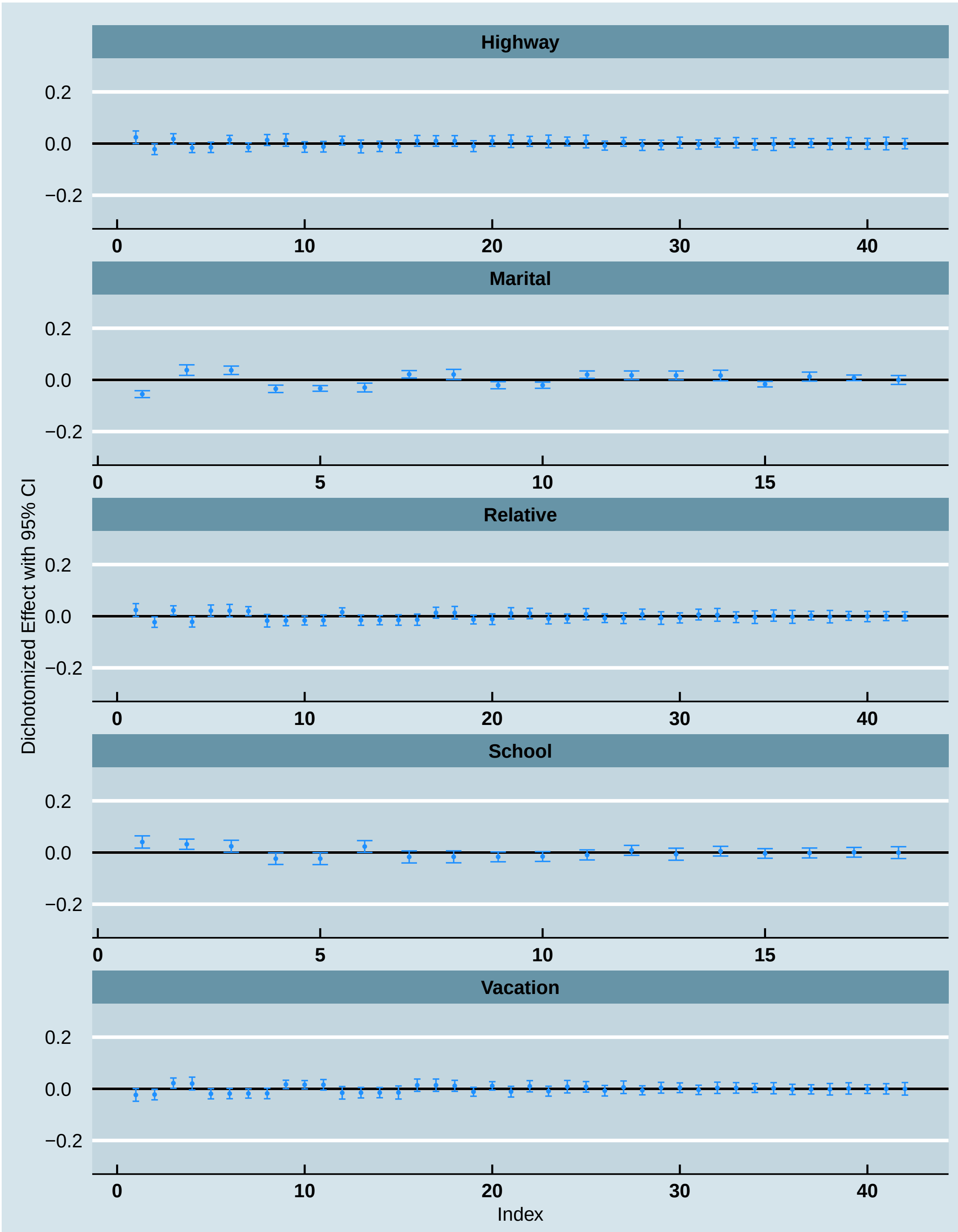
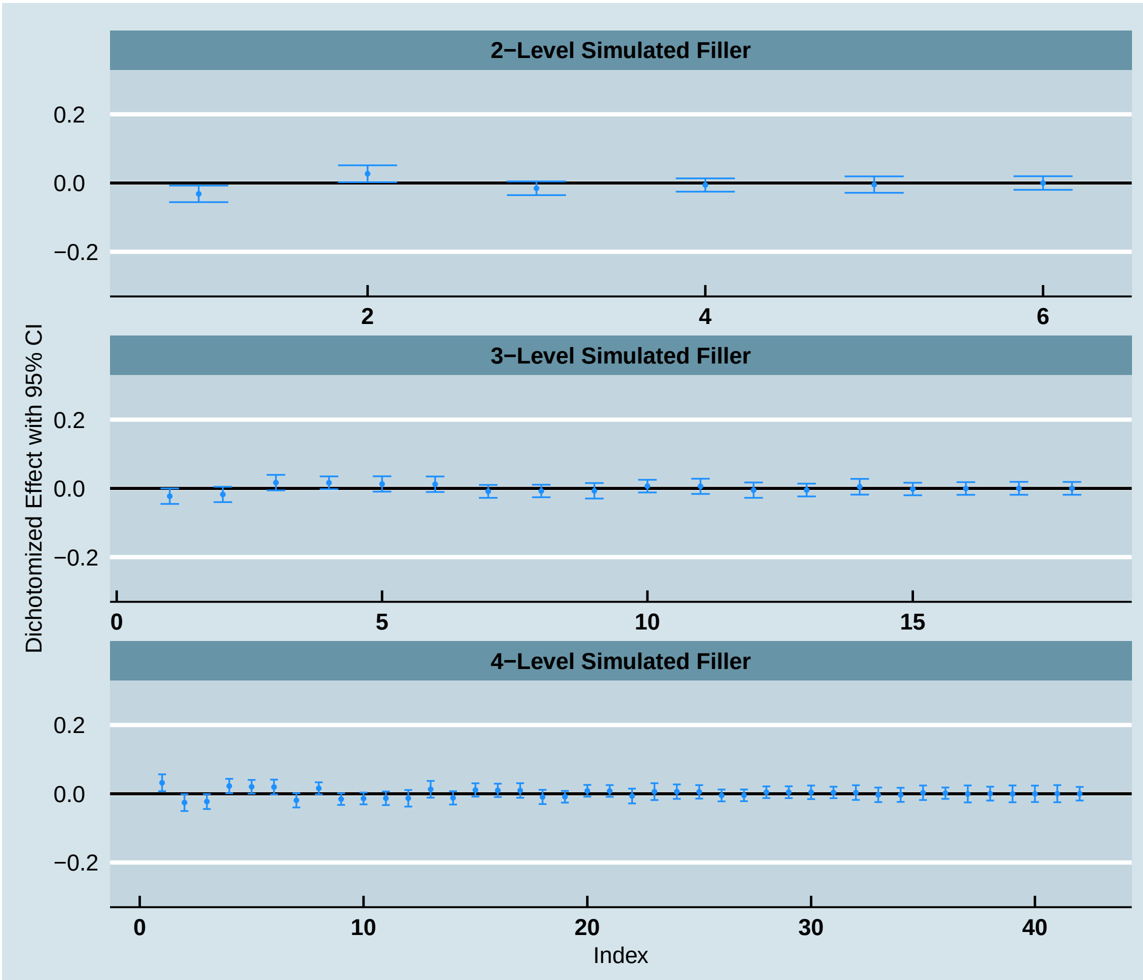


Figure A.2 shows similar plots for simulated filler attributes which have no association with the fixed attributes by construction. As can be seen, the patterns of actual estimates in Figure

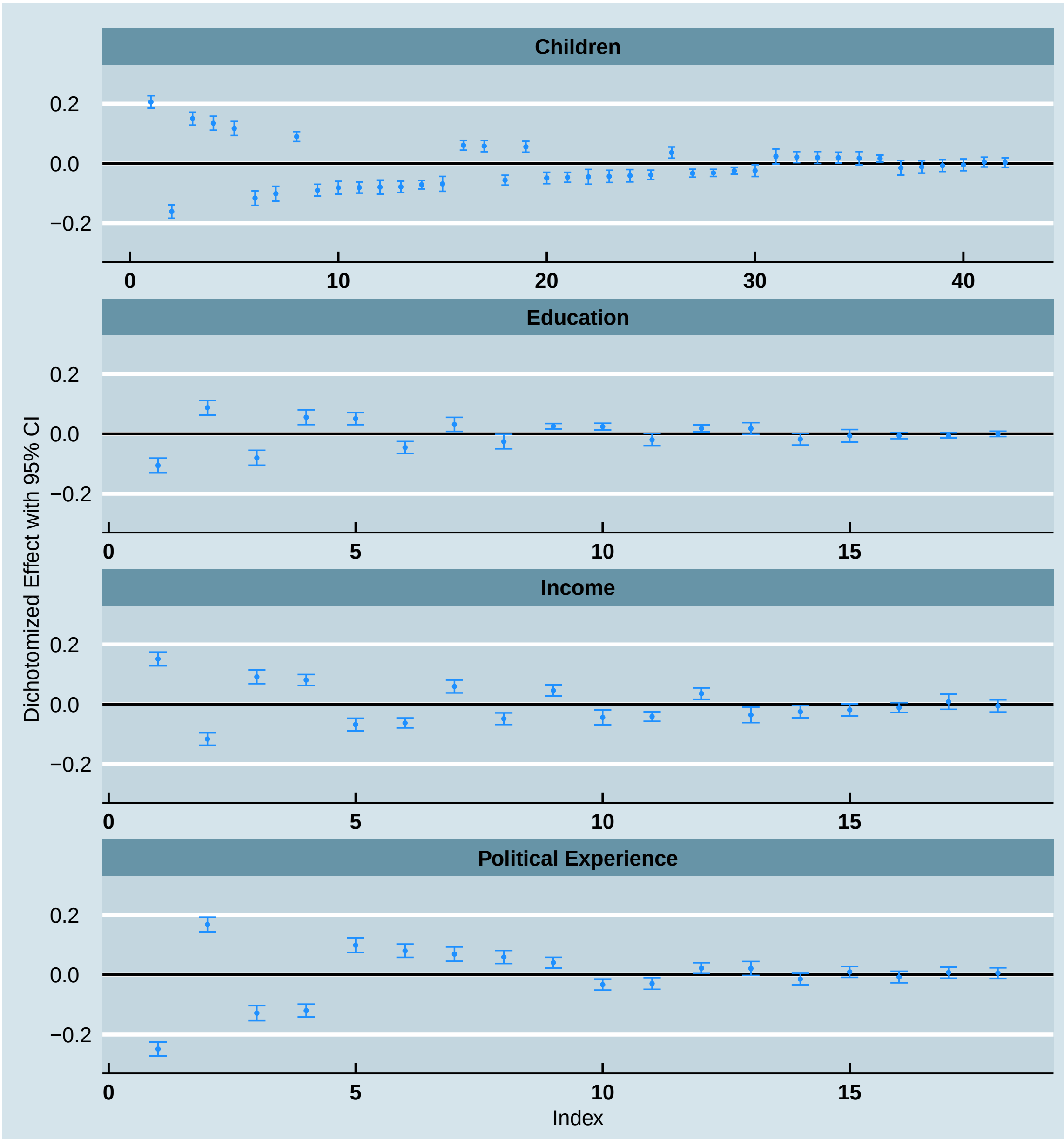
Figure A.2: Simulated Results from Study 1, first stage. Results using filler attributes that are simulated to have no association with the core attributes.



A.1 look similar to those of the simulated fillers, further illustrating the virtual non-association between the five filler attributes and the core attributes. In sum, based on the small magnitudes of the full set of difference-in-means estimates for these five filler attributes, it is not plausible that any of them could contribute to a meaningful amount of masking with respect to the core attributes. As a result, because these filler attributes do not pose the threat of masking, they can be used to isolate the possible effects of satisficing in the second stage of Study 1.

As an opposite point of comparison, Figures A.3-A.5 illustrate the results for a collection of filler attributes expected to have varying degrees of association with the core attributes. As the figures show, for each of these attributes, the estimates reach much higher magnitudes. In contrast to the five filler attributes discussed above, the filler attributes presented in Figures A.3-A.5 would

Figure A.3: Associated Fillers in Study 1, first stage. These filler attributes are associated with the Age core attribute.



be ill-suited for isolating the effects of satisficing from masking.

Figure A.4: Associated Fillers in Study 1, first stage. These filler attributes are associated with the Party and Issue Position core attributes.

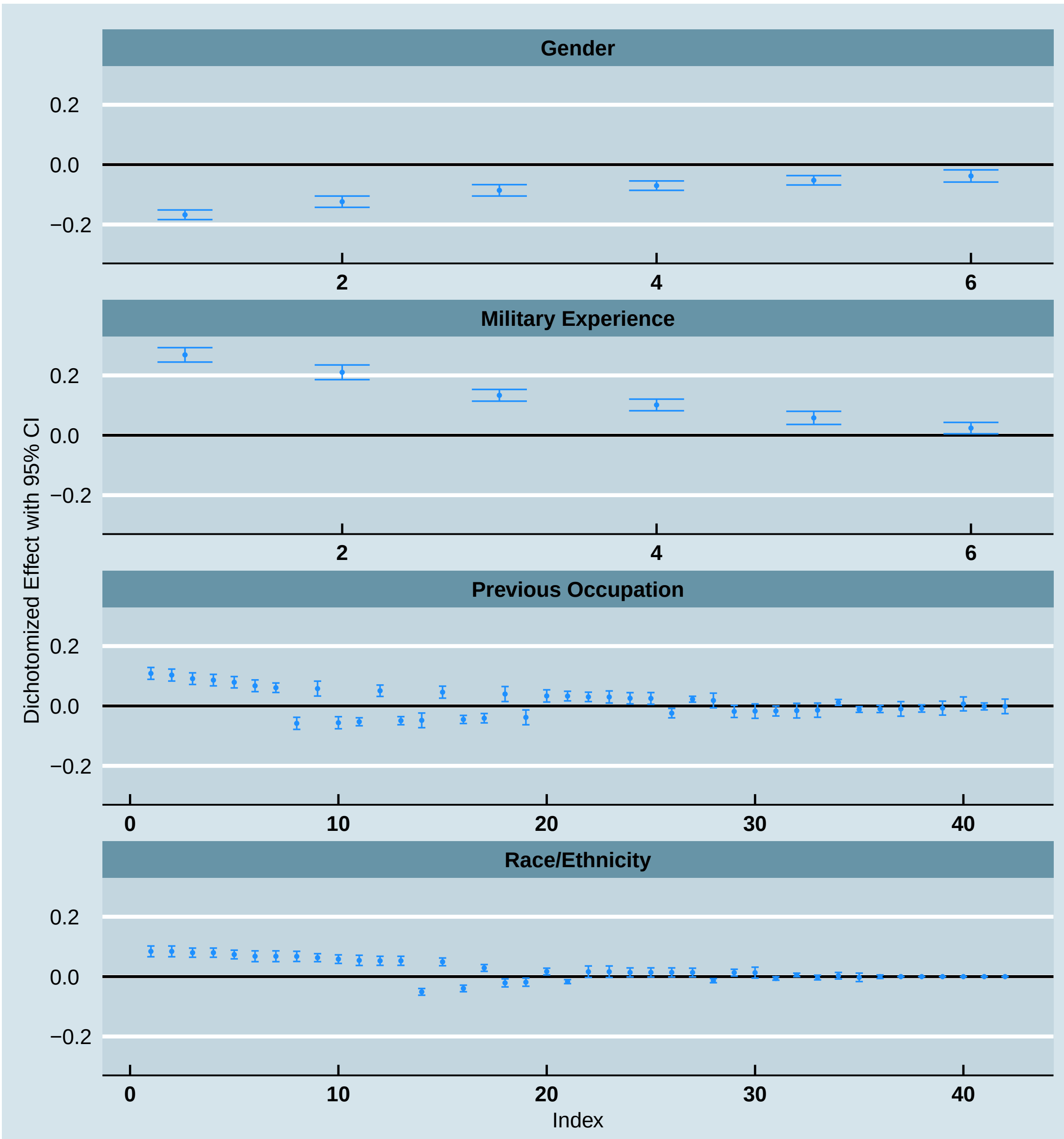
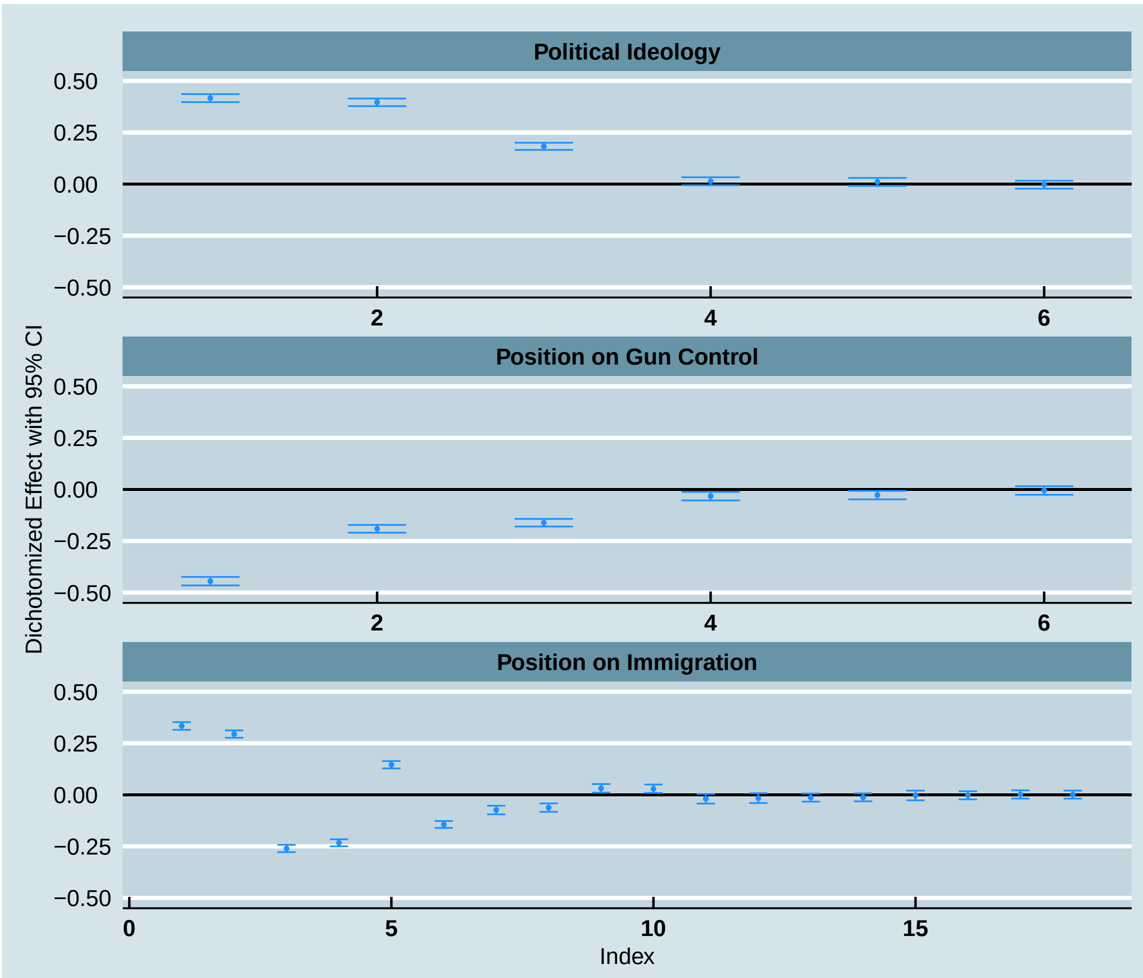


Figure A.5: Associated Fillers in Study 1, first stage. These filler attributes are associated with the Party and Issue Position core attributes.



A.3 Details and Additional Results from the Second Stage, Study 1

Table A.2: Filler Attributes for Second-Stage Conjoint Experiments in Study 1

Attribute	Levels	Waves
Famous Relative	Franklin Pierce, Chester Arthur, John Tyler, Zachary Taylor	MT1, MT2, MT3, SSI
Elementary School	Washington School, Jefferson School, Madison School	MT1, MT2, MT3, SSI
Favorite Highway	Route 71, Route 73, Route 77, Route 79	MT1, MT2, MT3, SSI
Favorite Vacation Spot	Crystal Lake, Twin Lake, Spring Lake, Long Lake	MT1, MT2, MT3, SSI
Marital Status	Single, Married, Divorced	MT1, MT2, MT3, SSI
Family Dog's Name	Rover, Bailey, Charlie, Buddy, Duke	MT2, MT3, SSI
Favorite Ice Cream Flavor	Chocolate, Vanilla, Strawberry	MT2, MT3, SSI
First Election Eligible to Vote in	Congress, Governor, President	MT2, MT3, SSI
Age when First Voted for President	18, 19, 20, 21	MT2, MT3, SSI
Took High School Trip to Washington DC in	9th Grade, 10th Grade, 11th Grade, 12th Grade	MT2, MT3, SSI
Birthstone	Red Garnet, Emerald, Sapphire, Opal	MT2, MT3, SSI
9th Grade First-Period Class	Math, History, English, Science	MT2, MT3, SSI
Favorite Dinosaur as a Child	Triceratops, Stegosaurus, Allosaurus, Tyrannosaurus	MT2, MT3, SSI
First Book Report on	George Washington, John Adams, Thomas Jefferson, James Madison	MT2, MT3, SSI
Wedding Anniversary	May 14, June 12, September 16, October 10	MT2, MT3
Born on a	Monday, Tuesday, Wednesday, Thursday	MT3, SSI
Favorite Color	Blue, Green, Orange, Red	MT3, SSI
Born in	Odd Year, Even Year	MT3, SSI
First Name Ends in a	Vowel, Consonant	MT3, SSI
Disliked Food	Bananas, Pickles, Lettuce, Popcorn	MT3, SSI
Shares a Birthday with Family Member	Yes, No	MT3, SSI
Sixth Grade Classroom on	First Floor, Second Floor, Third Floor	MT3, SSI
Favorite Baseball Team Won World Series when	Candidate was 6, Candidate was 7, Candidate was 8, Candidate was 9	MT3, SSI
Favorite Morning Beverage	Coffee, Milk, Orange Juice, Water	MT3, SSI
Favorite Season	Winter, Spring, Summer, Autumn	MT3, SSI
Type of Tree in Home Backyard	Oak, Maple, Pine	MT3, SSI
Favorite Composer	Beethoven, Bach, Mozart	MT3, SSI
Current Home Address is on a	Street, Road, Way, Avenue	MT3, SSI
Home Front Door Faces	North, South, East, West	MT3, SSI
Color of Childhood Family Car	White, Black, Silver, Red	MT3, SSI
Best High School Sports Team was	Basketball Team, Track and Field Team, Soccer Team, Baseball Team	MT3, SSI
Prefers to Respond to E-mail in the	Morning, Afternoon, Evening	MT3, SSI
Usual Day for Grocery Shopping	Saturday, Sunday, Monday, Tuesday	MT3, SSI
Relative Fought in	World War I, World War II, Vietnam War, Korean War	MT3, SSI
Has Visited the Grand Canyon	Yes, No	MT3, SSI
Preferred Side to Sit on when Riding a Train	Left, Right	SSI

Table A.3: MTurk Sample (Pooled across Waves), DV: Preference (Forced Choice)

# Fillers	0	1	2	3	4	5	6	8	10	12	15	25	35
Own Party$^{\gamma}$	0.198*	0.205*	0.199*	0.178*	0.170*	0.184*	0.147*	0.193*	0.154*	0.192*	0.158*	0.158*	0.178*
	(0.012)	(0.011)	(0.011)	(0.012)	(0.011)	(0.010)	(0.016)	(0.017)	(0.015)	(0.016)	(0.016)	(0.021)	(0.022)
SS Marriage Position$^{\gamma}$	0.228*	0.232*	0.229*	0.233*	0.202*	0.231*	0.233*	0.190*	0.243*	0.258*	0.232*	0.220*	0.206*
	(0.019)	(0.018)	(0.017)	(0.018)	(0.018)	(0.015)	(0.025)	(0.024)	(0.024)	(0.022)	(0.025)	(0.031)	(0.030)
Healthcare Position$^{\gamma}$	0.193*	0.158*	0.160*	0.189*	0.163*	0.177*	0.168*	0.170*	0.181*	0.187*	0.180*	0.125*	0.151*
	(0.015)	(0.015)	(0.015)	(0.014)	(0.015)	(0.013)	(0.020)	(0.019)	(0.019)	(0.019)	(0.020)	(0.024)	(0.023)
Age 54	−0.007	−0.008	−0.006	−0.025*	0.003	0.008	−0.013	−0.007	−0.030*	−0.005	0.012	−0.014	−0.027
	(0.012)	(0.011)	(0.011)	(0.012)	(0.011)	(0.010)	(0.015)	(0.015)	(0.015)	(0.014)	(0.015)	(0.020)	(0.020)
Age 72	−0.080*	−0.091*	−0.100*	−0.124*	−0.084*	−0.070*	−0.068*	−0.081*	−0.077*	−0.082*	−0.046*	−0.073*	−0.041
	(0.013)	(0.012)	(0.012)	(0.013)	(0.012)	(0.011)	(0.018)	(0.018)	(0.017)	(0.015)	(0.017)	(0.019)	(0.021)
R^2	0.131	0.130	0.127	0.132	0.102	0.123	0.109	0.108	0.119	0.144	0.115	0.095	0.098
Adj. R^2	0.130	0.130	0.127	0.132	0.101	0.122	0.109	0.107	0.118	0.143	0.114	0.094	0.097
Num. obs.	10800	11520	11160	11100	11460	14370	6090	6420	6030	6060	5730	3720	3540

$^{*}p < 0.05$, standard errors clustered by respondent.
γ: coded in concordance with partisan affiliation.
All models fit with only core attributes.

Table A.4: SSI Sample, DV: Preference (Forced Choice)

# Fillers	0	1	2	4	6	8	10	15	25	35
Own Party$^{\gamma}$	0.197*	0.182*	0.203*	0.148*	0.172*	0.218*	0.157*	0.172*	0.146*	0.176*
	(0.015)	(0.015)	(0.015)	(0.015)	(0.016)	(0.016)	(0.015)	(0.016)	(0.017)	(0.016)
SS Marriage Position$^{\gamma}$	0.190*	0.129*	0.155*	0.147*	0.158*	0.126*	0.169*	0.127*	0.128*	0.122*
	(0.021)	(0.022)	(0.024)	(0.023)	(0.021)	(0.021)	(0.020)	(0.022)	(0.022)	(0.021)
Healthcare Position$^{\gamma}$	0.146*	0.122*	0.131*	0.111*	0.113*	0.125*	0.138*	0.101*	0.090*	0.100*
	(0.020)	(0.019)	(0.020)	(0.020)	(0.018)	(0.018)	(0.018)	(0.017)	(0.018)	(0.016)
Age 54	−0.001	0.010	−0.009	−0.048*	0.004	0.010	−0.019	−0.021	−0.025	0.011
	(0.014)	(0.013)	(0.016)	(0.015)	(0.014)	(0.015)	(0.014)	(0.014)	(0.016)	(0.014)
Age 72	−0.074*	−0.061*	−0.092*	−0.107*	−0.069*	−0.046*	−0.056*	−0.074*	−0.069*	−0.040*
	(0.014)	(0.015)	(0.017)	(0.017)	(0.015)	(0.015)	(0.015)	(0.017)	(0.018)	(0.015)
R^2	0.103	0.069	0.088	0.062	0.071	0.080	0.074	0.062	0.049	0.059
Adj. R^2	0.102	0.069	0.087	0.062	0.070	0.079	0.074	0.061	0.048	0.058
Num. obs.	7230	7770	6720	7020	7230	7230	7290	6870	6570	7080

$^*p < 0.05$, standard errors clustered by respondent.

γ: coded in concordance with partisan affiliation.

All models fit with only core attributes.

Figure A.6: This figure illustrates the AMCEs for our core attributes of interest from only the first MT survey wave as the number of relevant attributes increases.

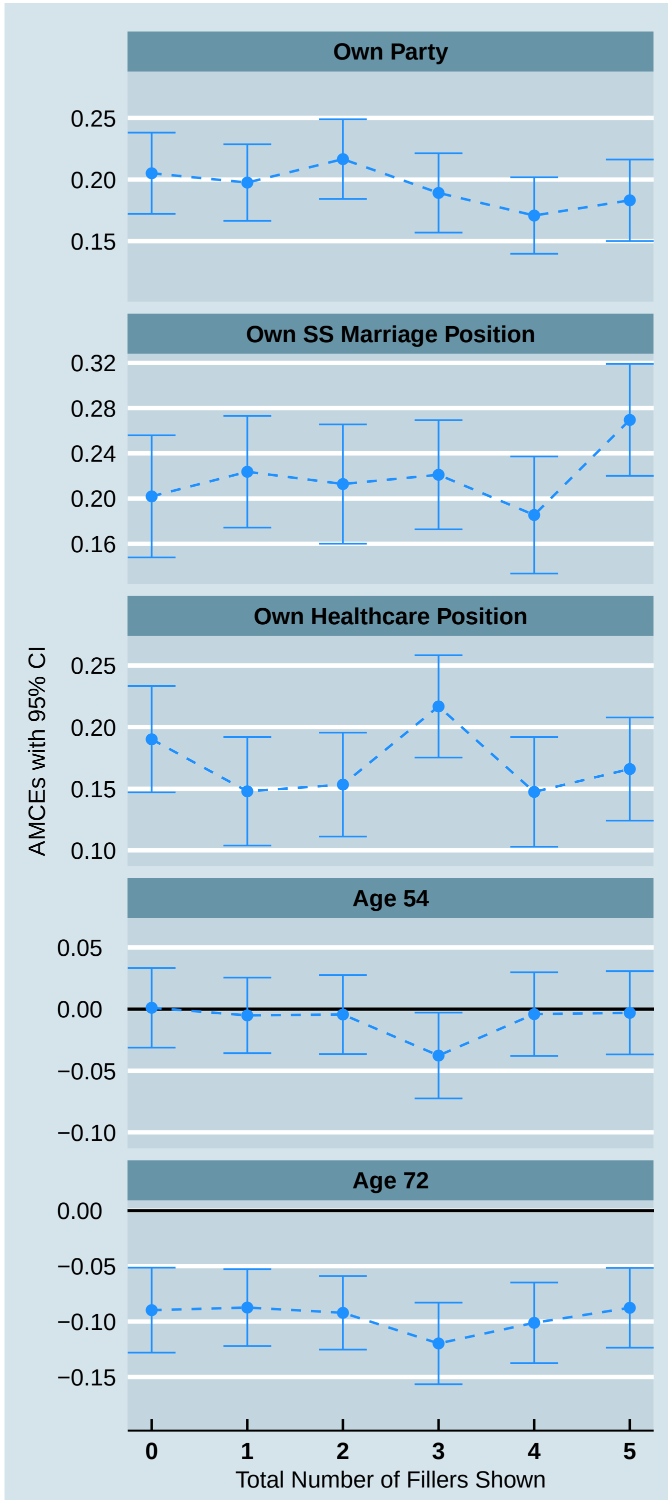


Figure A.7: This figure illustrates the partial R-squared values from models of the forced-choice outcomes using the core attributes as covariates, fit to only the first wave of the MT data.

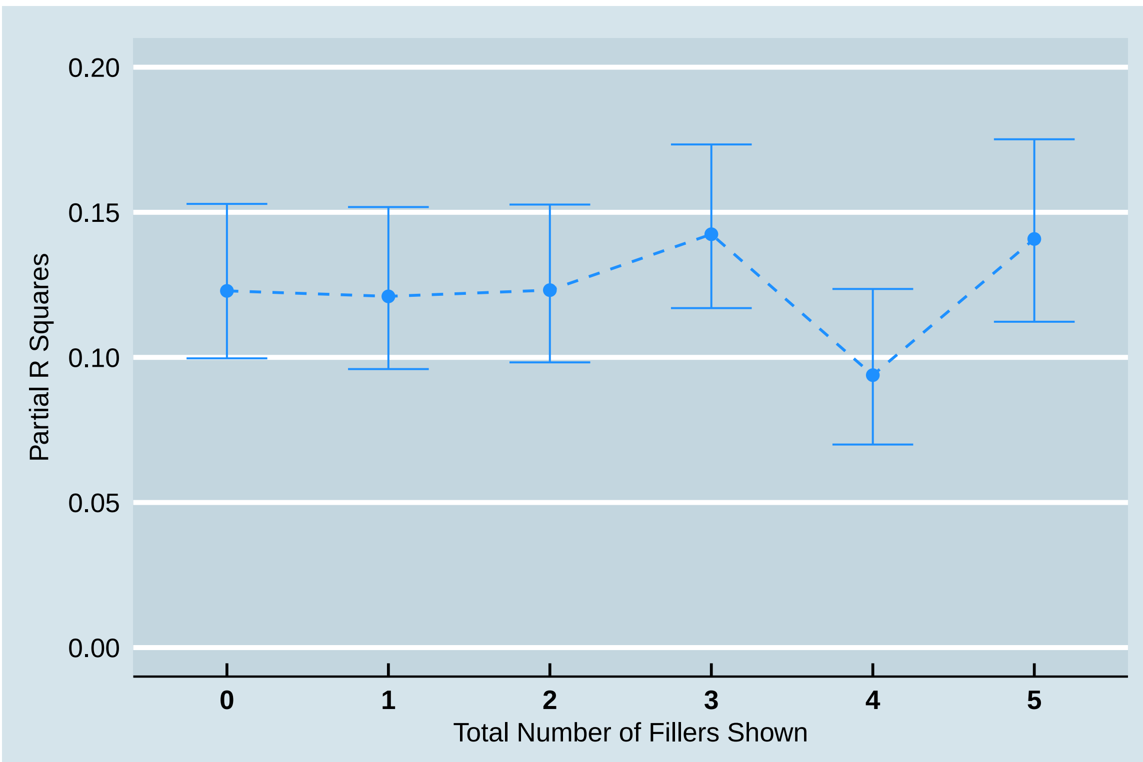


Figure A.8: This figure illustrates the AMCEs for our core attributes of interest from the three MT survey waves as the number of relevant attributes increases, using the rating dependent variable.

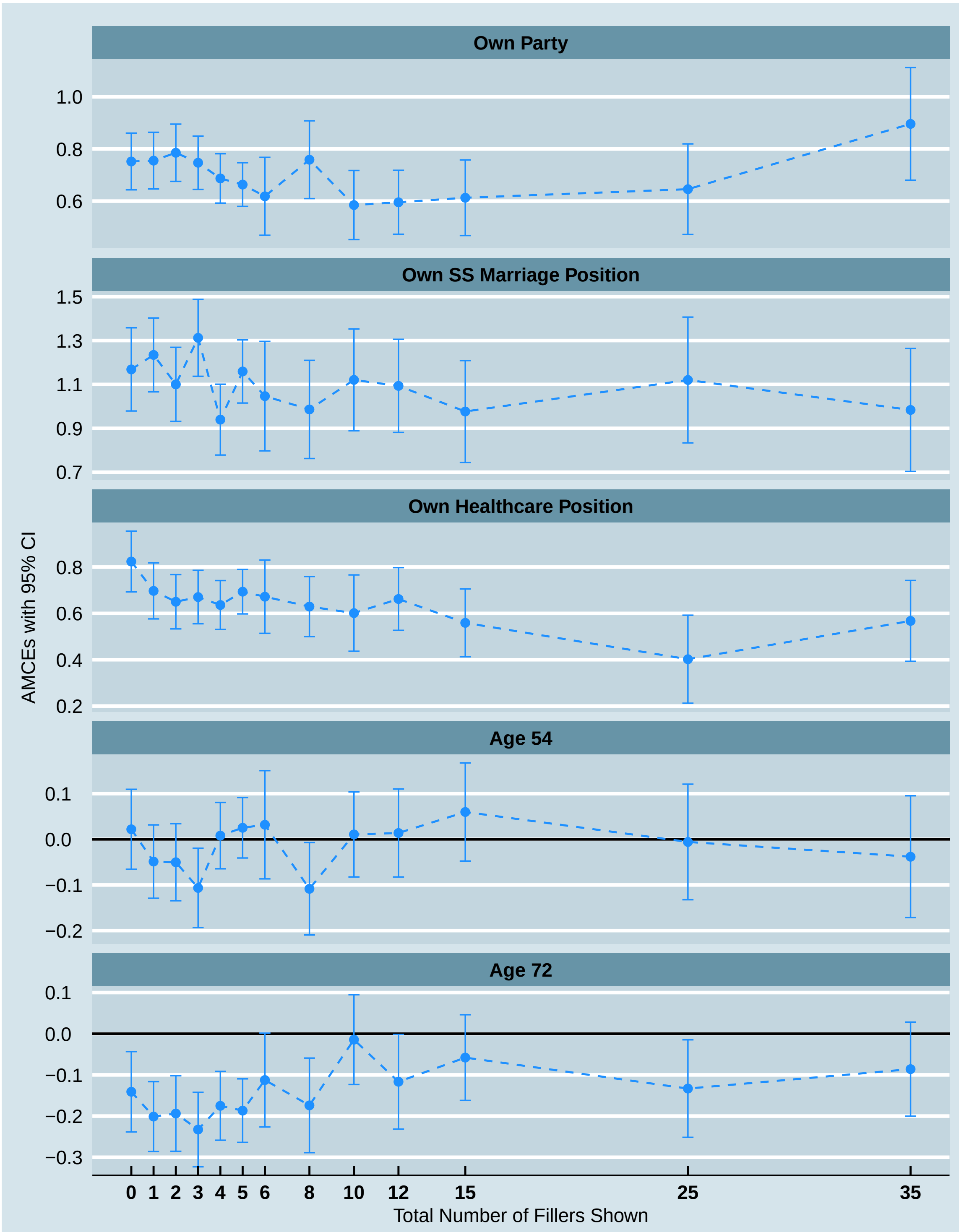


Figure A.9: This figure illustrates the AMCEs for our core attributes of interest from the SSI survey wave as the number of relevant attributes increases, using the rating dependent variable.

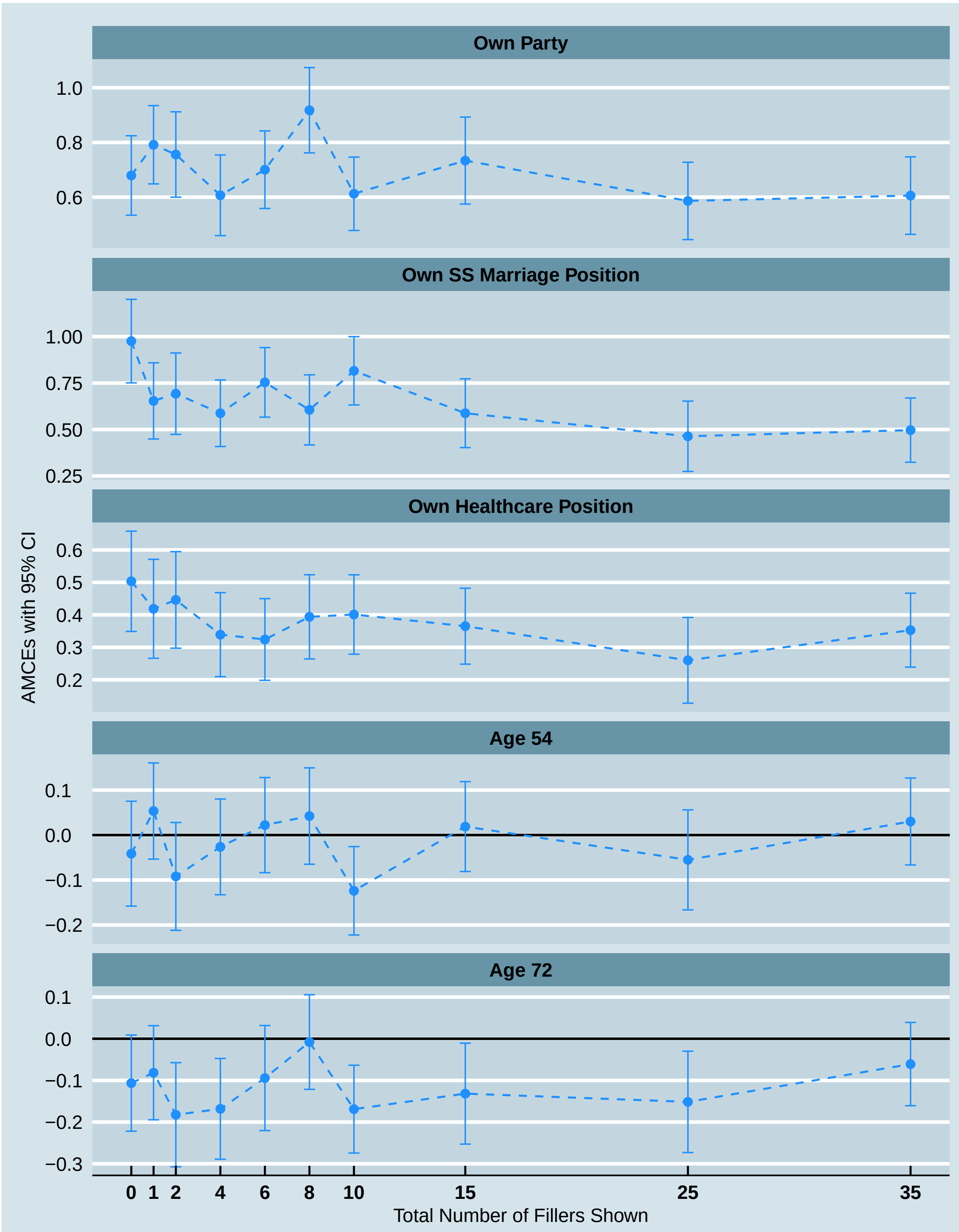


Table A.5: Study 1 Sample Sociodemographic Distributions

	Gender	Age				Education					
	Female	29/under	30-44	45-64	65/over	Less than High School Diploma	High School Diploma / GED	Some College (no degree)	2-year College Degree	4-year College Degree	Graduate Degree
Stage 1 MTurk	52%	36%	44%	18%	2%	0.5%	10%	26%	13%	38%	13%
Stage 2 MTurk	55%	45%	36%	17%	2%	0.4%	10%	27%	12%	37%	13%
Stage 2 SSI	56%	26%	28%	32%	13%	3%	19%	26%	13%	26%	13%

Table A.6: Study 1 Sample Sociodemographic Distributions, continued

	Income						
	$0 - $24,999	$25,000 - $49,999	$50,000 – $74,999	$75,000 – $99,999	$100,000 – $149,999	$150,000 – $199,999	$200,000+
Stage 1 MTurk	18%	31%	25%	15%	9%	2%	1%
Stage 2 MTurk	19%	32%	24%	14%	9%	2%	1%
Stage 2 SSI	19%	29%	20%	14%	11%	4%	2%

Table A.7: Study 1 Sample Sociodemographic Distributions, continued

	Party Identification				Party Identification and/or Leaning		
	Republican	Democrat	Independent	Other	Republican	Democrat	None
Stage 1 MTurk	21%	41%	35%	3%	28%	54%	17%
Stage 2 MTurk	23%	44%	30%	3%	31%	57%	12%
Stage 2 SSI	29%	39%	29%	3%	37%	48%	15%

A.4 Details of the First Stage, Study 2

Table A.8: Study 2 Filler Attributes

Attribute	Levels	Included in Stage 2	Abbreviated Name
Material in bed pillows	Feather, Down, Cotton, Memory Foam	Yes	Pillows
Television channels	Free cable channels, pay-per-view movie and event channels, Free Direct TV channels	Yes	Channels
Lamp lights	All fluorescent, All incandescent, Mix of fluorescent and incandescent	Yes	Lamps
Additional service provided	Free laundry, Free dry cleaning, Free bottled water, Free hot breakfast	Yes	Service
Closet options	1 walk-in closet, 2 separate reach-in closets	Yes	Closet
Hallway decor	Paintings, Photographs, Both paintings and photographs	Yes	Hallway
In-room office furniture	Large desk with desk chair but no reading lounge chair, Small desk with desk chair plus reading lounge chair	Yes	Office
In-room kitchen equipment	Refrigerator/freezer, Refrigerator/freezer and microwave, Only refrigerator	Yes	Kitchen
Wake-up calls performed by	Automated voice system, Live operator	Yes	Call
Bathroom towel options	Towels replaced daily, Towels replaced every other day, Towels not replaced during guests' stay	Yes	Towels
Bed linen options	Linens replaced daily, Linens replaced every other day, Linens not replaced during guests' stay	Yes	Linens
Proximity to elevators	Close, Far	Yes	Elevators
Mini-bar contents	Alcoholic beverages, Non-alcoholic beverages, Non-alcoholic and alcoholic beverages	Yes	Bar
Bathroom sinks	2 sinks with limited countertop space, 1 sink with extra countertop space	Yes	Sinks
Ceiling fan location	Above bed, Above couch	Yes	Fan
Default temperature (F) on thermostat	68, 70, 72, 74	Yes	Thermo
Room service menu	Same as hotel restaurant's, Different than hotel restaurant's	Yes	Menu
Complimentary chocolate on pillow	Milk chocolate, Dark chocolate, White chocolate, Mint chocolate	Yes	Chocolate
Room color scheme	Light green and blue, Light green and yellow, Beige and light grey, Sky blue and white	No	Color
Shower design	Bathtub shower with curtain, Walk-in shower with clear door, Walk-in shower with opaque door, Open walk-in shower with no door	No	Shower
Balcony options	40 sq. ft. balcony, 40 sq. ft. of extra interior space and no balcony	No	Balcony
Amount of in-room decor	Minimal decor, Moderate decor, Elaborate decor	No	Decor
Theme of in-room decor	Local artwork, Modern art, Landscape art	No	Theme
In-room coffee/tea	Drip coffee machine, Automatic espresso machine, Water heater for tea	No	Coffee
Bathroom soap and shampoo scent	Lavender, Mint, Citrus	No	Scent
Parking options	Valet parking, Self-parking in indoor garage, Self-parking in outdoor lot	No	Parking
Flooring material	Carpet, Hardwood, Tile	No	Flooring
In-room lights	Turn on automatically upon entry, Must be turned on manually	No	Lights
Hotel restaurant type	American, Italian, Chinese, Mexican	No	Food
On-site hotel car rental service	Large national chain, Small local company, None	No	Car
Television location	In front of bed, In front of couch	No	TV
Bathroom door type	Hinged door with knob, Hinged door with lever handle, Sliding door	No	Bathroom Door
Windows	Do open, Do not open	No	Windows
Valet to bring bags to room	Yes, No	No	Valet
Hours room service menu is available	8am - 11pm, 4pm - 11pm, 24 hours	No	Hours
*24/7 access to	Gym, Pool, Club lounge	No	Access
*Hotel room window has view of	Sailboats, Trees	No	Boats
*Bedroom pillow size	King size, Queen size, Standard size	No	Size

Figure A.10: Results from Study 2, first stage. Evidence of non-association between core attributes and filler attributes included in stage 2.

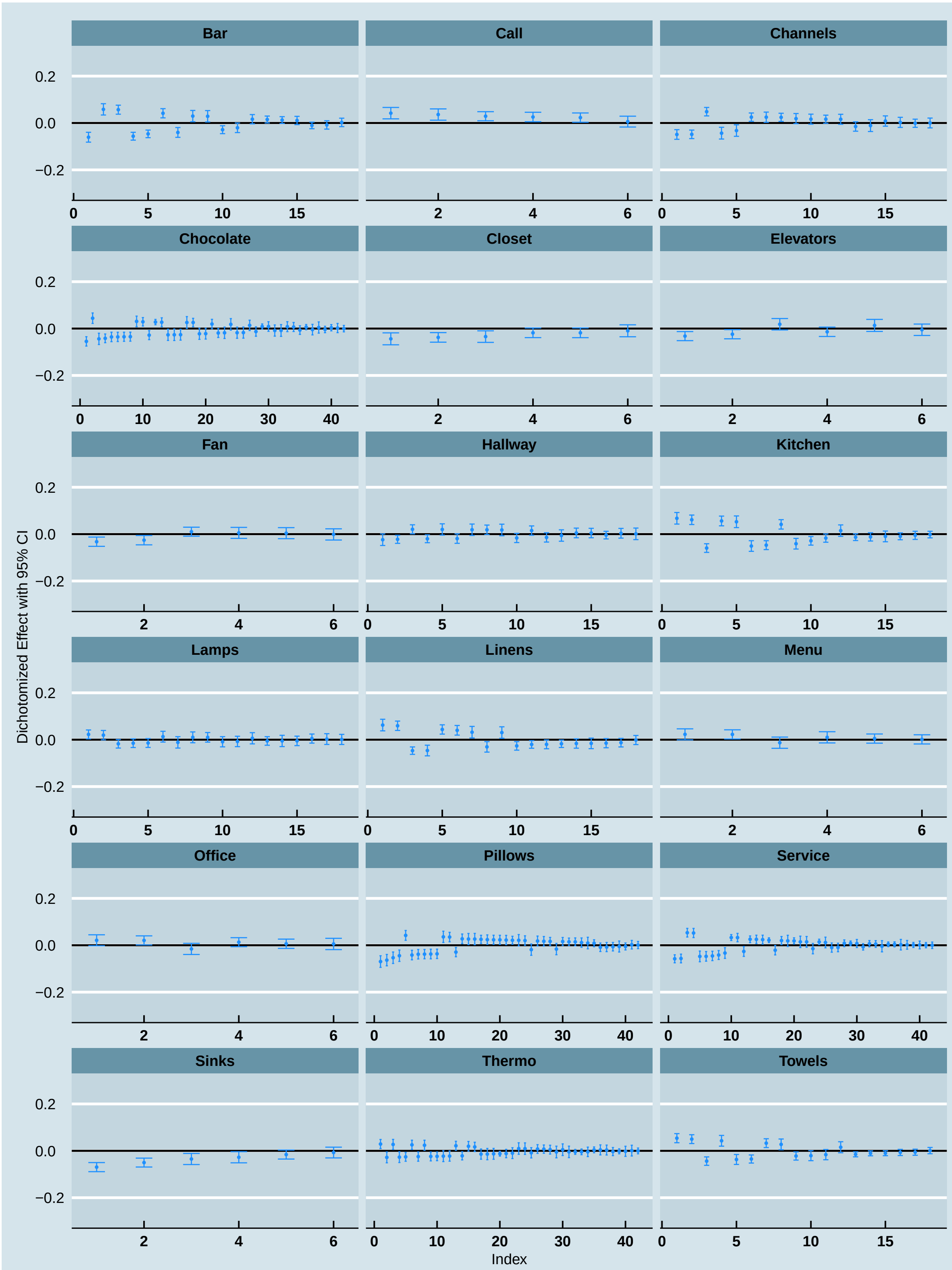


Figure A.11: Associated Filler from Study 2, first stage. These fillers were associated with core attributes.

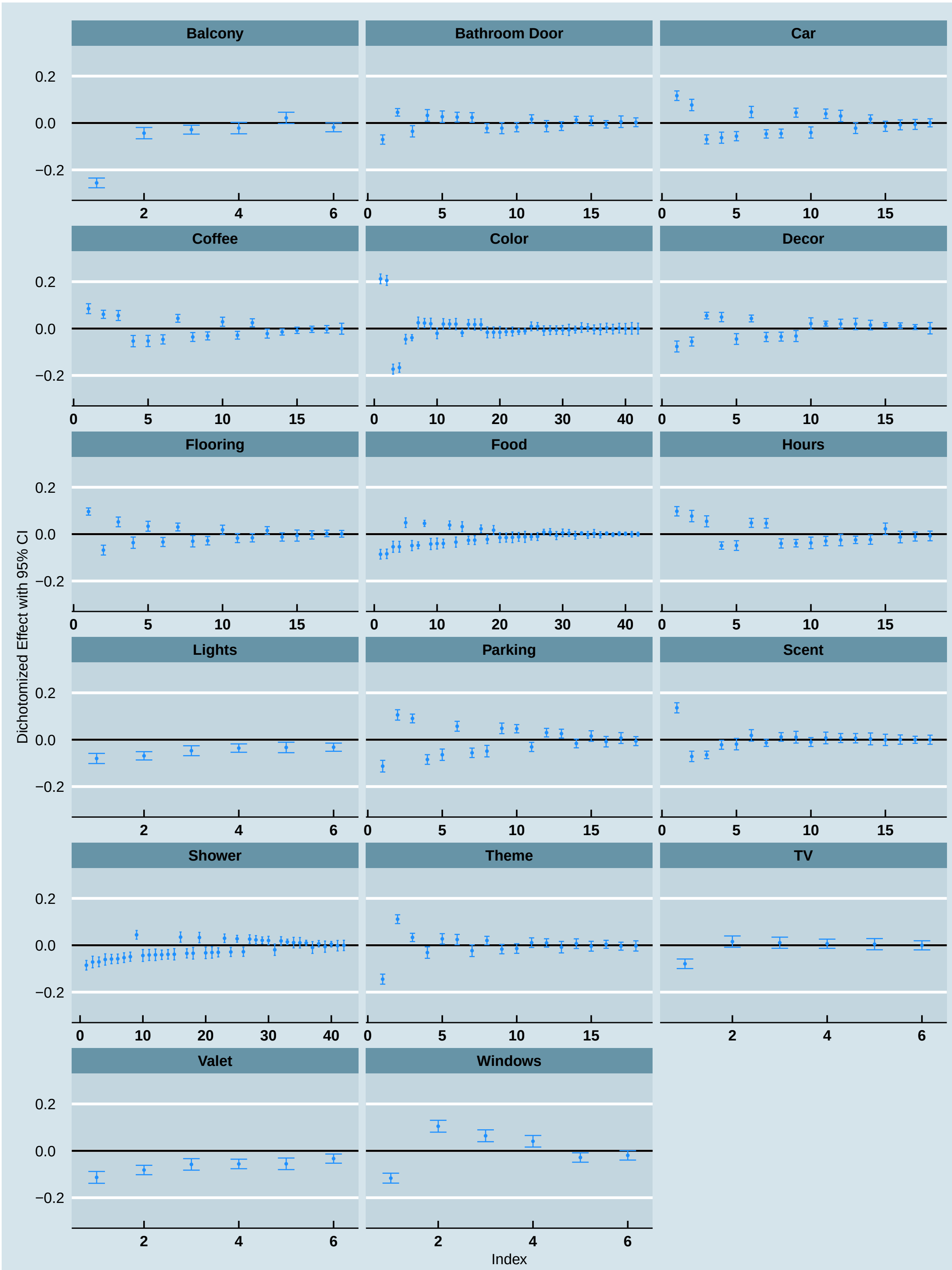
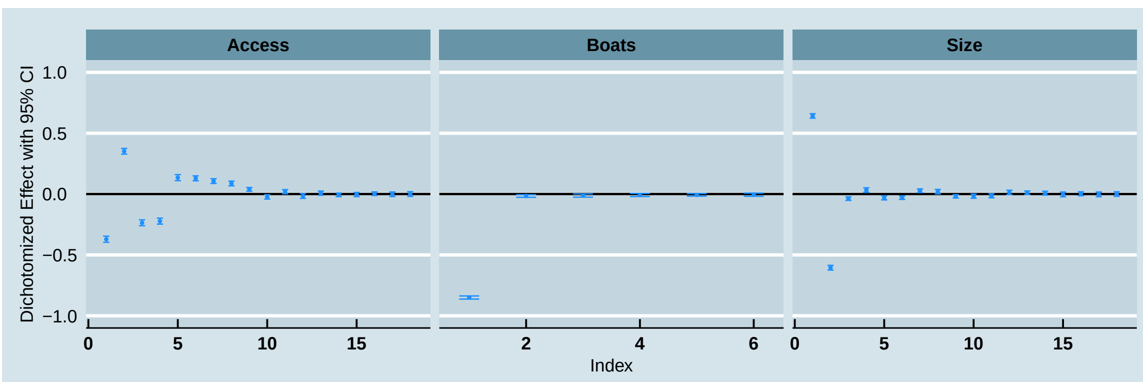


Figure A.12: Attention Check Fillers from Study 2, first stage. These fillers were designed to be associated with certain core attributes and were included as attention checks in the first stage.



A.5 Details of the Second Stage, Study 2

Table A.9: Study 2 Stage 2 Results, DV: Preference (Forced Choice)

# Fillers	0	1	2	3	4	5	6	8	10	14	18
Ocean View	0.175*	0.181*	0.162*	0.114*	0.147*	0.109*	0.141*	0.129*	0.122*	0.104*	0.082*
	(0.018)	(0.015)	(0.017)	(0.016)	(0.017)	(0.015)	(0.015)	(0.015)	(0.015)	(0.016)	(0.014)
King Bed	0.098*	0.092*	0.073*	0.070*	0.084*	0.070*	0.081*	0.070*	0.067*	0.044*	0.037*
	(0.013)	(0.012)	(0.013)	(0.012)	(0.013)	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)
Pay for Wireless	−0.303*	−0.263*	−0.259*	−0.254*	−0.218*	−0.217*	−0.194*	−0.192*	−0.170*	−0.161*	−0.131*
	(0.015)	(0.015)	(0.014)	(0.013)	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)	(0.015)	(0.014)
10th Floor	−0.007	−0.009	−0.020	0.004	−0.040*	−0.012	−0.011	−0.010	−0.009	−0.003	0.003
	(0.015)	(0.016)	(0.015)	(0.014)	(0.014)	(0.014)	(0.013)	(0.014)	(0.015)	(0.014)	(0.014)
20th Floor	0.040*	0.034	0.018	0.031	−0.001	0.034*	0.006	0.016	0.040*	0.006	0.011
	(0.018)	(0.019)	(0.018)	(0.016)	(0.016)	(0.015)	(0.015)	(0.015)	(0.015)	(0.015)	(0.014)
R^2	0.133	0.111	0.100	0.083	0.077	0.066	0.064	0.059	0.050	0.040	0.026
Adj. R^2	0.133	0.111	0.100	0.083	0.077	0.065	0.064	0.058	0.049	0.040	0.025
Num. obs.	8940	8490	9090	9330	9030	9120	9300	8910	9030	9030	8940

$^*p < 0.05$, standard errors clustered by respondent.
All models fit with only core attributes.

Figure A.13: This figure illustrates the AMCEs for our core attributes of interest from the second stage of study 2 as the number of relevant attributes increases, using the rating dependent variable.

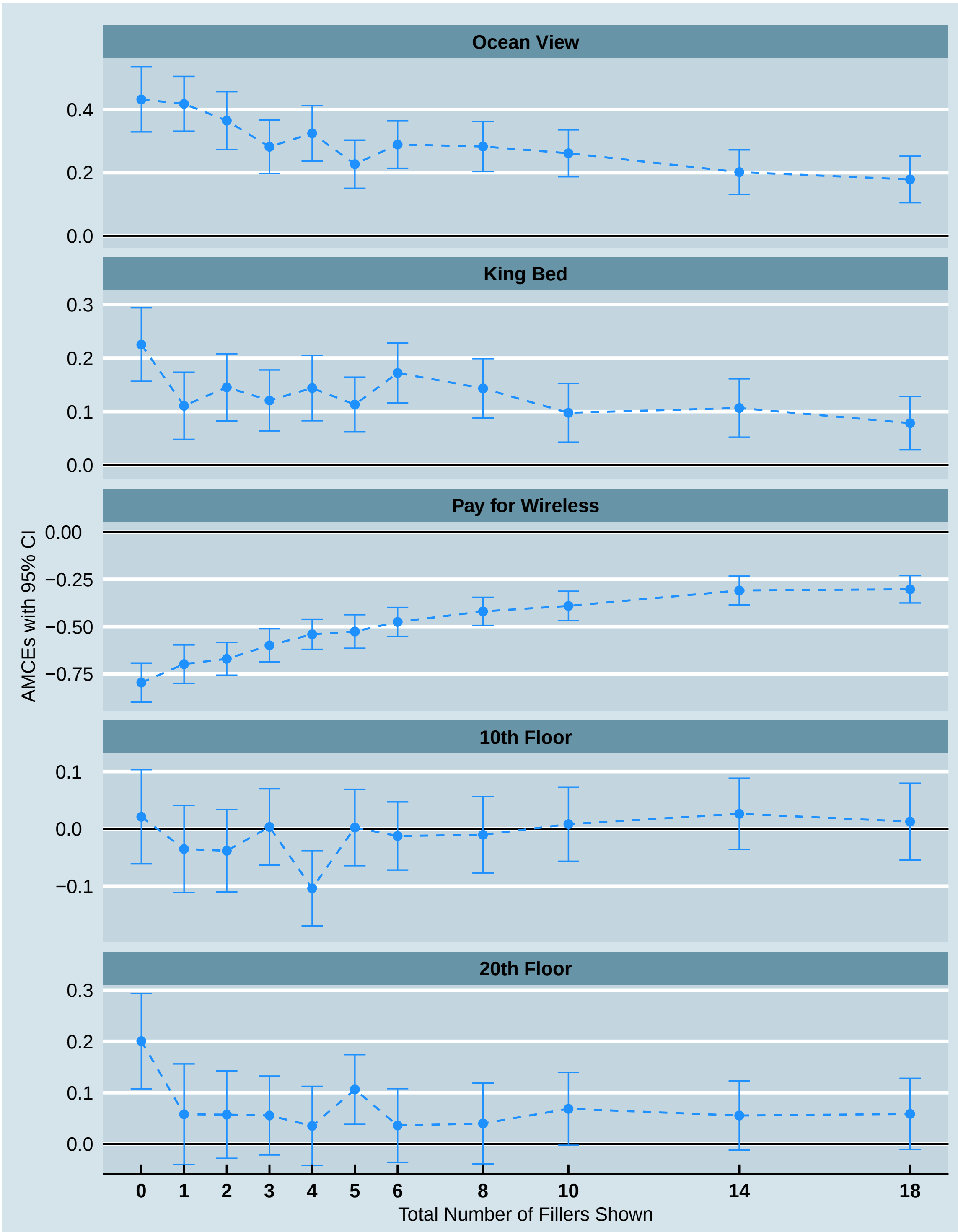


Table A.10: Study 2 Sample Sociodemographic Distributions

	Gender	Age				Education					
	Female	29/under	30-44	45-64	65/over	Less than High School Diploma	High School Diploma / GED	Some College (no degree)	2-year College Degree	4-year College Degree	Graduate Degree
Stage 1	53%	36%	42%	19%	3%	0.3%	10%	26%	12%	38%	14%
Stage 2	48%	40%	43%	16%	2%	1%	10%	25%	12%	39%	14%

Table A.11: Study 2 Sample Sociodemographic Distributions, continued

	Income						
	$0 - $24,999	$25,000 - $49,999	$50,000 – $74,999	$75,000 – $99,999	$100,000 – $149,999	$150,000 – $199,999	$200,000+
Stage 1	17%	30%	25%	15%	10%	3%	1%
Stage 2	17%	30%	24%	15%	10%	3%	1%

Table A.12: Study 2 Sample Sociodemographic Distributions, continued

	Party Identification				Party Identification and/or Leaning		
	Republican	Democrat	Independent	Other	Republican	Democrat	None
Stage 1	24%	42%	30%	3%	33%	57%	11%
Stage 2	24%	43%	30%	3%	31%	57%	12%

A.6 Testing Possibility of Complex Masking And Interactive Associations

Here, we present results from additional, non-prespecified tests which investigate the plausibility of the conditions under which our identification strategy is valid. First, we consider the possibility of complex masking. As we show in Appendix A.1, complex masking could occur even if filler attributes are perceived to be uncorrelated with the core attributes on average. This complex masking can occur if (1) correlations between the filler and core attributes exist for certain types of respondents and (2) if those respondents also place systematically different weights on the filler attributes when making their choices of candidates. In other words, complex masking requires systematic heterogeneity in the relationship between the fillers and the core attributes and systematic heterogeneity in the effect of the fillers on candidate choice. If the patterns of these correlations is "just right," it could lead to a decrease in the effects of the core attributes in the second-stage experiments when the fillers are added to the model even if there is no increase in satisficing.

To investigate the possibility that complex masking might explain our results we conduct two tests:

1. Using the data from the first-stage experiments we examine whether there is systematic heterogeneity in the effects of the core attributes on the guesses about the filler attributes. In particular, we regress the reported filler attributes on the core attributes, a set of respondent characteristics (including age, income, gender, and education), and all the pairwise interactions between the core attributes and the respondent characteristics. We then conduct Wald tests against the null hypothesis that the interaction effects are jointly equal to zero. Given that respondent characteristics like age, income, gender, and education are often important in structuring preferences, a failure to reject this null provides evidence against the idea that there is systematic heterogeneity in the effects of the core attributes on the guesses of the filler attributes as required by complex masking.

2. Using the data from the second-stage experiments we examine whether there is systematic heterogeneity in the effects of the added filler attributes on candidate choice. In particular, we regress the candidate choice on the filler attributes, a set of respondent characteristics (including age, income, gender, and education), and all the pairwise interactions between

the filler attributes and the respondent characteristics. We then conduct Wald tests agains the null hypothesis that the interaction effects are jointly equal to zero. Failure to reject this null provides evidence against the idea that there is systematic heterogeneity in the effects of the filler attributes on the candidate choice as required by complex masking.

In addition, we also consider the possibility that perceived associations might exist between a filler attribute and certain combinations of core attributes. That is, masking could also occur if respondents are able to guess the value of a filler attribute from a particular combination of the core attributes. For example, respondents might associate an elderly Republican candidate to a particular filler attribute even though neither age nor party alone informs them about the attribute. To investigate this possibility, we conducted a test similar to Test 1 above with respect to the pairwise interactions between the core attributes themselves.

Figure A.14 reports the tests from the first-stage experiments for the hotel study. Despite the large sample sizes we fail to reject the null that the interaction effects are jointly equal to zero. The p-values from the joint tests roughly follow a uniform distribution. Figure A.15 reports the same results for the candidate experiment and the results are similar to those from the hotel experiment. Overall these findings suggest that the effects of the core attributes on the choice of the fillers do not vary across respondents in ways that would be detected by the joint tests. This speaks against the possibility of complex masking as a potential explanation of our results.

Figures A.16 reports the test from the second-stage experiments for the hotel study. Again, we fail to reject the null that the interaction effects are jointly equal to zero for the large majority of fillers despite the large sample size. Figures A.17, A.18, and A.19 report the same results for the candidate experiment for the various samples and the results are similar to those of the hotel experiment. Overall, these findings suggest that the effects of the filler attributes on the candidate choice do not vary across respondents in ways that would be detected by the joint tests. This again inveighs against the possibility of complex masking as a potential explanation of our results.

Finally, Figures A.20 and A.21 show the results of the tests of whether the pairwise interactions of the core attributes have any perceived association with any of the filler attributes. Again, despite the large sample sizes, we fail to reject the joint null of no interaction effects, implying that such interactive association is unlikely to exist in respondents' perceptions.

Figure A.14: This figure illustrates the results from tests for the possibility of complex masking by examining whether there is systematic heterogeneity in the effects of the core attributes on the guesses of the filler attributes across respondent characteristics in the first-stage hotel experiment.

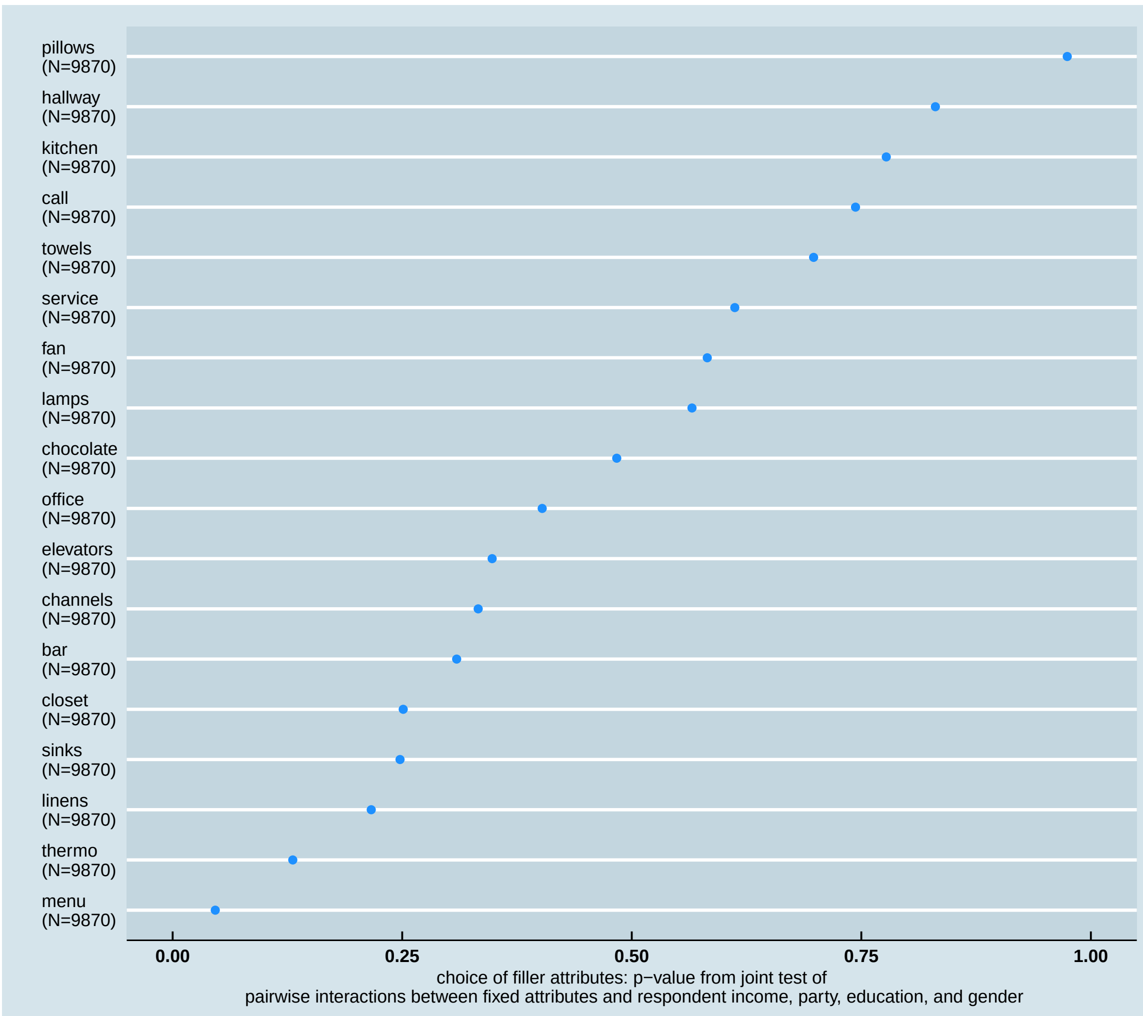


Figure A.15: This figure illustrates the results from tests for the possibility of complex masking by examining whether there is systematic heterogeneity in the effects of the core attributes on the guesses of the filler attributes across respondent characteristics in the first-stage candidate experiment.

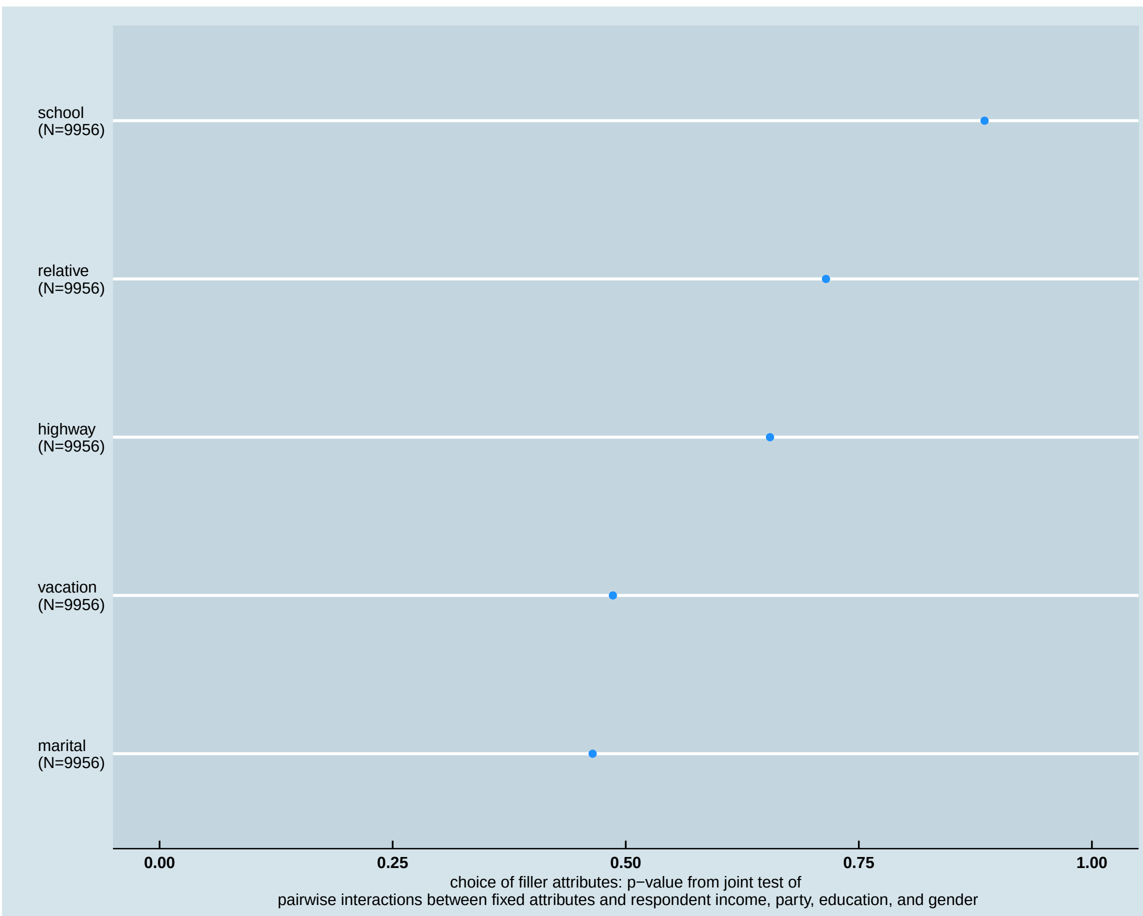


Figure A.16: This figure illustrates the results from tests for the possibility of complex masking by examining whether there is systematic heterogeneity in the effects of the fillers attributes on the candidate choice across respondent characteristics in the second-stage hotel experiment.

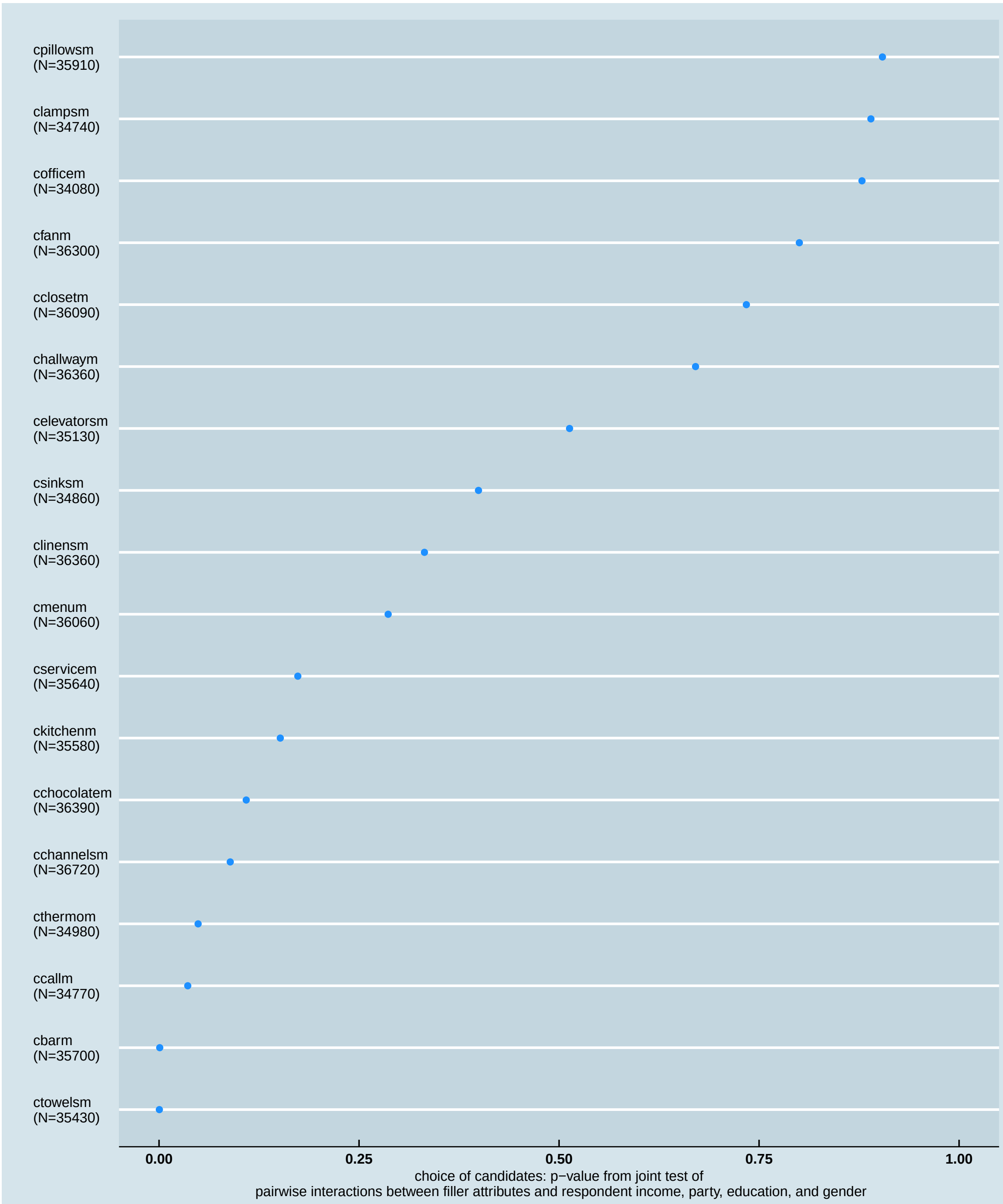


Figure A.17: This figure illustrates the results from tests for the possibility of complex masking by examining whether there is systematic heterogeneity in the effects of the fillers attributes on the candidate choice across respondent characteristics in the second-stage candidate experiment using all three MT samples.

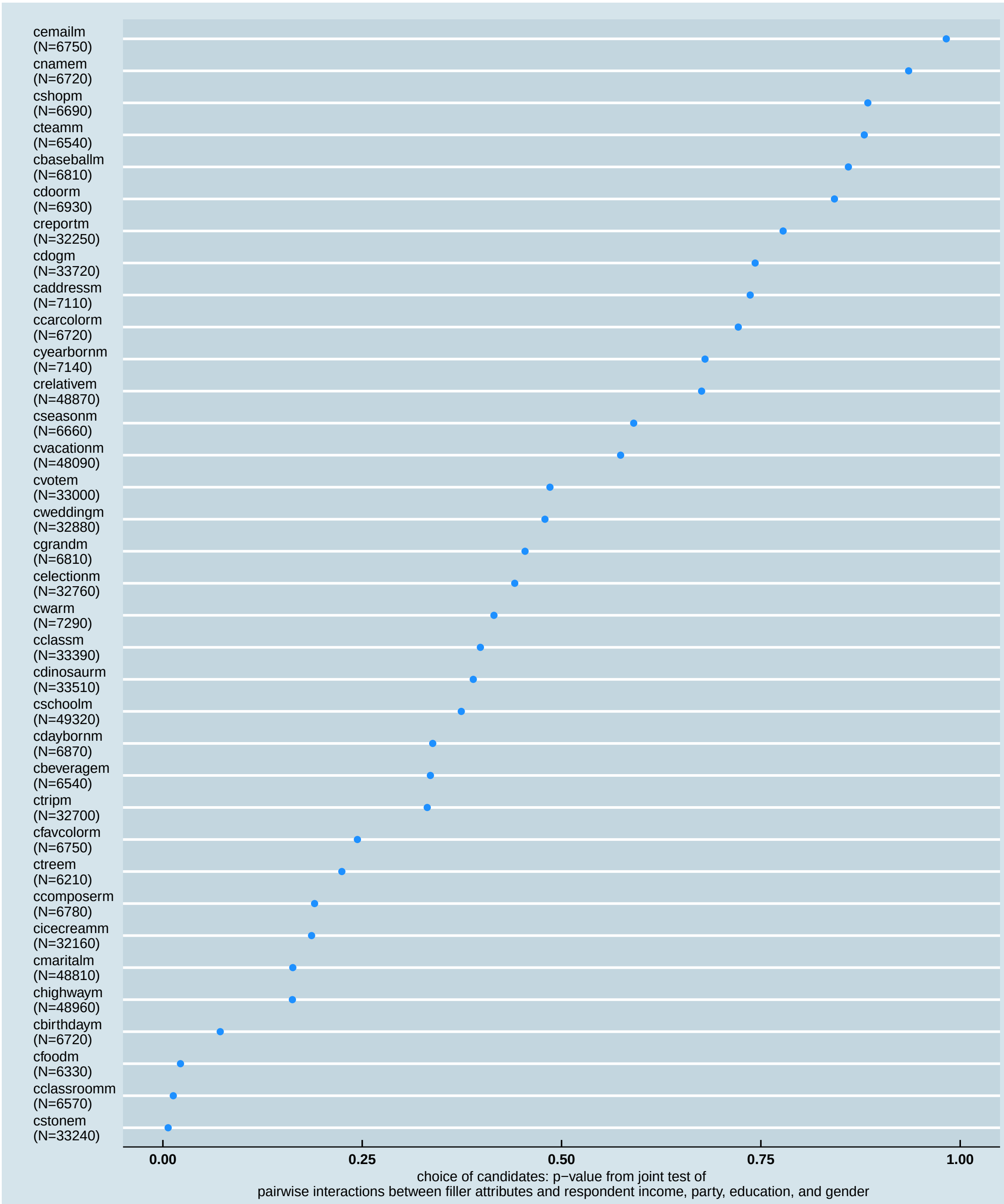


Figure A.18: This figure illustrates the results from tests for the possibility of complex masking by examining whether there is systematic heterogeneity in the effects of the fillers attributes on the candidate choice across respondent characteristics in the second-stage candidate experiment using the MT1 sample.

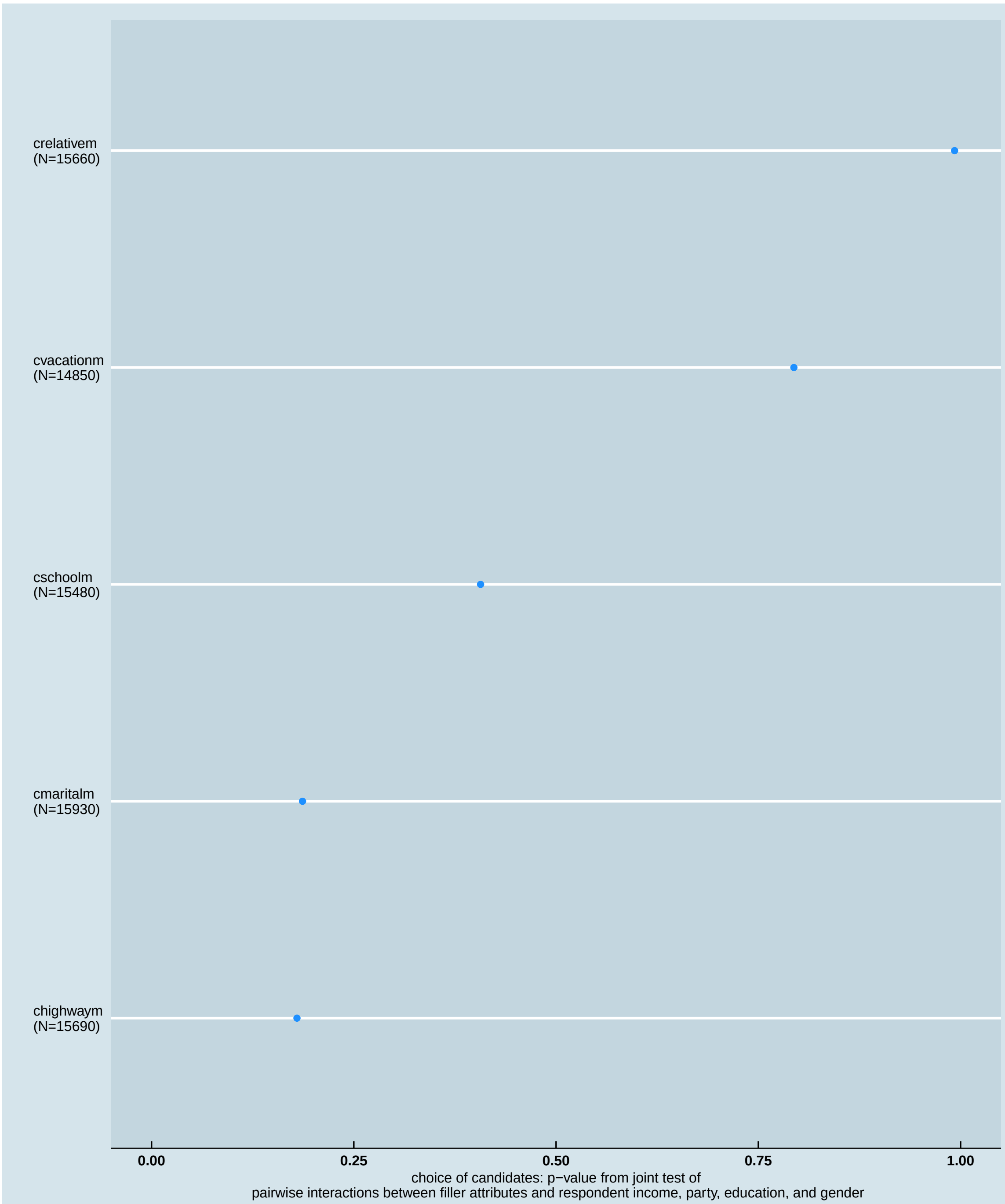


Figure A.19: This figure illustrates the results from tests for the possibility of complex masking by examining whether there is systematic heterogeneity in the effects of the fillers attributes on the candidate choice across respondent characteristics in the second-stage candidate experiment using the SSI sample.

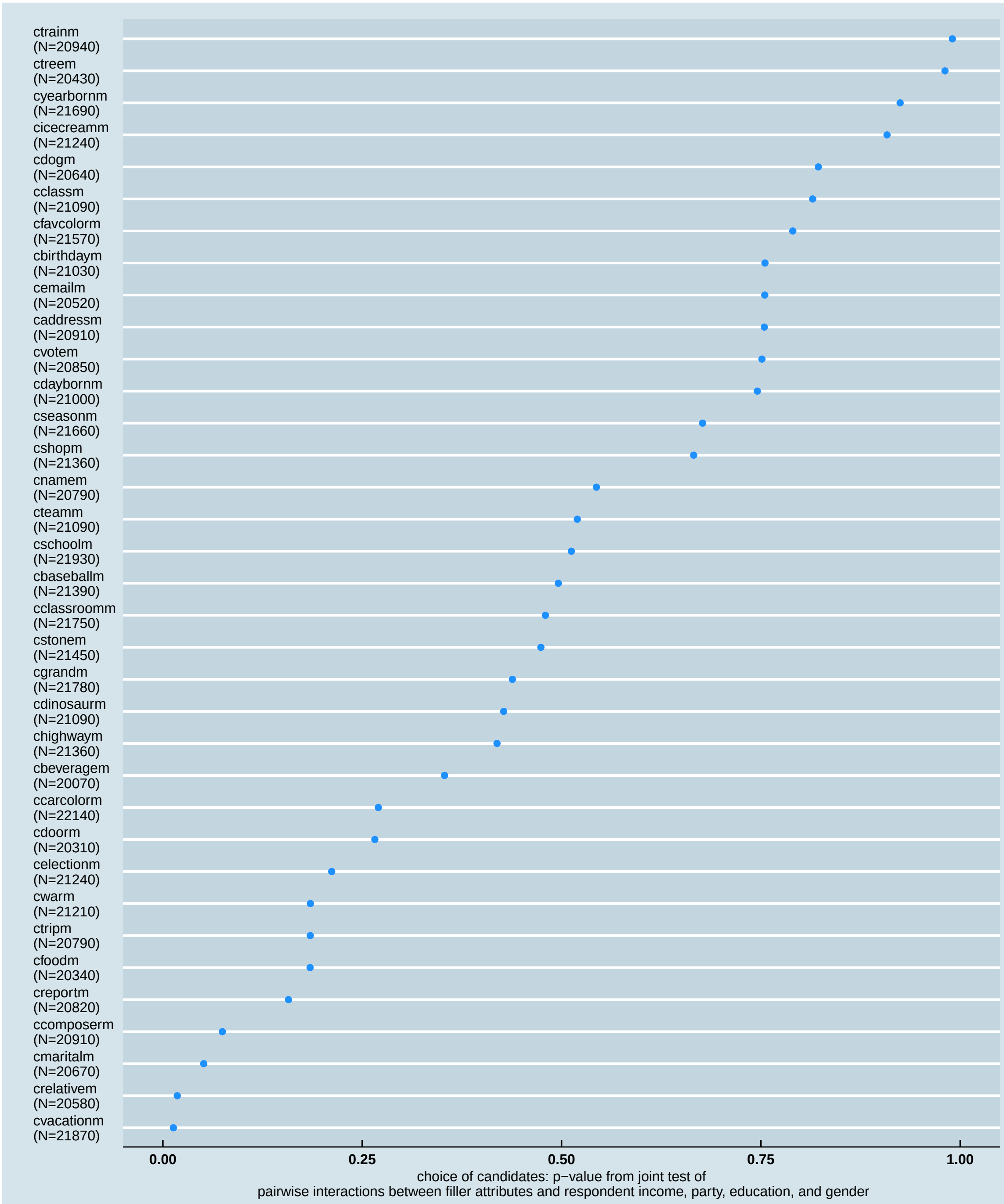


Figure A.20: This figure illustrates the results from tests for the possibility of interactive perceived association by examining whether there is systematic heterogeneity in the effects of the core attributes on the guesses of the filler attributes across values of the other core attributes in the first-stage hotel experiment.

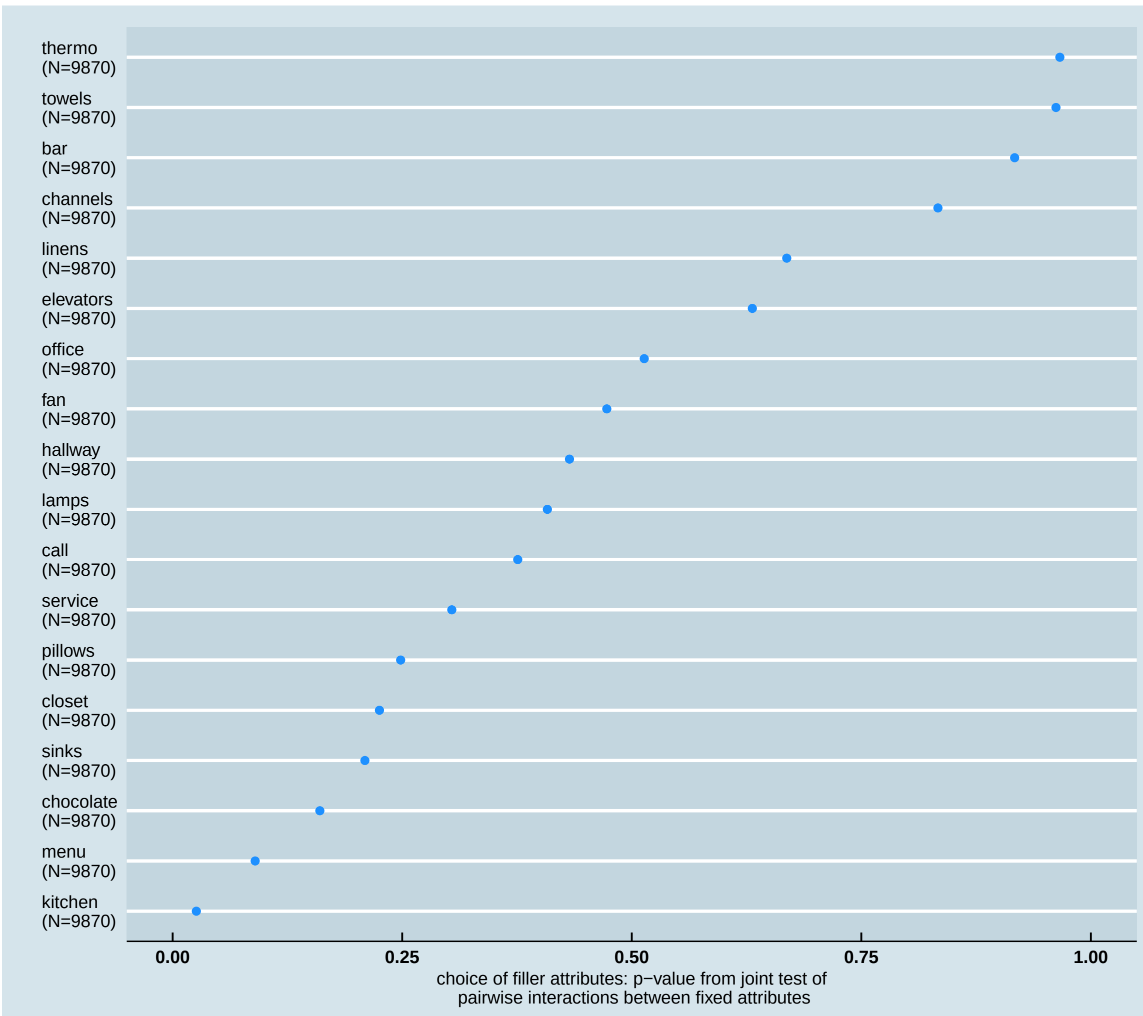


Figure A.21: This figure illustrates the results from tests for the possibility of interactive perceived association by examining whether there is systematic heterogeneity in the effects of the core attributes on the guesses of the filler attributes across values of the other core attributes in the first-stage candidate experiment.