

## SUPPLEMENTARY MATERIALS

### Appendix A

**Table A1** rPET food packaging policies in China

Policy name	Time of issuance	Issuing office	rPET food packaging-related content	Current status
“Managing Measures for the Hygiene of Plastic Products and Raw Materials for Food”	November 1990	Then Ministry of Health	Article 7 “No recycled plastics shall be used in the processing of plastic utensils, containers, and food packaging materials”	This policy was annulled in December 2010.
“Emergency Notice on Carrying Out Concentrative Management of Plastic Food Packaging and Containers” in response to the illegal behavior of enterprises producing baby bottles with recycled plastic material in Yiwu, Zhejiang Province	June 2006	Then General Administration of Quality Supervision, Inspection and Quarantine	“Production and processing enterprises of recycled plastic are not allowed to sell recycled plastic materials to food packaging and container production enterprises”	The <i>Detailed Rules</i> were replaced by the “Implementation Rules for Production License for Food-related Products (1) Plastic Food Packaging, Containers, Tools and Other Products” in December 2018, in which there was no mention of the use of recycled plastic material.
“Detailed Rules for the Examination of Production License for Plastic Food Packaging, Containers, Tools and Other Products”	July 2006		2 (2) paragraph 4.1.4 “Recycled materials or contaminated raw materials shall not be used as raw materials”	
“Pollution Control and Technical Standards for the Recycling and Regeneration of Waste Plastics (for Trial Implementation) ”	September 2007	Then State Environmental Protection Administration	Paragraph 6.2 “It is not appropriate to use waste plastics to manufacture packaging, products or materials that have direct contact with food. (However,) recycled plastic that originated from products, packaging and materials that had direct contact with food, if independently recycled and processed and meet national food safety standards, can be used to manufacture packaging, products or materials that have direct contact with food, and should be labeled ‘made from recycled plastic’”	This is merely a recommended industry standard rather than a compulsory regulation. In addition, its content is in conflict with the above listed compulsory policies and regulations that were still in effect at the time of issuance of this recommended industry standard.

Note: This table is put together by author based on Yu and Lin<sup>[1]</sup>.

## **Appendix B** Cheap talk script

Recent studies show that people tend to act differently when they face hypothetical decisions. For example, some people would state a price they would pay for an item, but when this item becomes available in the grocery store, they will not pay this price. There can be several reasons for this behavior. It might be that it is too difficult to measure the impact of a purchase in the household budget or it might be difficult to visualize getting the product from a grocery store shelf and paying for it.

**We want you to behave in the same way that you would if you really had to pay for the product and take it home.** Please take into account how much you would really want the product, as opposed to other alternatives. Please respond to each of the following questions as if you were really in a grocery store.

## Appendix C Information treatment scripts

### T3 and T4: rPET information treatment

When you buy a bottled beverage product, it usually comes in a PET bottle. Virgin PET is not very eco-friendly: it is created from oil, and the processes for creating virgin PET plastic bottles use up a considerable amount of energy. **rPET (Recycled PET) is a more eco-friendly packaging alternative.** It takes less energy to recycle and create an rPET bottle than to manufacture a virgin PET bottle, and the recycling of PET bottles to make rPET bottles means that the original bottles are not thrown into landfills to cause more pollution. According to the scientific consensus, rPET bottles are both safe and hygienic to use for food and beverages and are just as light as virgin PET bottles. In Europe and North America, many bottled beverage companies (including Coca-Cola, PepsiCo, Nestlé and evian) are offering their products in bottles that are made of 50, 75, or even 100 percent rPET.

### T5 and T6: bottle size information treatment

Plastic pollution poses major threats to the environment, wildlife and humans. One way to reduce plastic pollution is through source reduction - eliminate plastic waste before it is created. Through weighing the two bottled juice product bundles in this study, which both total at 1.8 L in volume, we found that **the small bottle bundle (300 mL × 6 pack) uses 27 percent more plastic packaging than large bottle bundle (900 mL × 2 pack).** In addition, research by scholars from the University of South Carolina and University of California, Los Angeles in the U.S. estimated that holding constant the total volume of beverage sold, a 20 percent shift in consumption from small plastic bottles (below 473 mL) to midsize bottles (between 473 mL and 3L) could reduce the annual production of PET waste by over 10,000 tons in the U.S. alone.

### T7 and T8: both information treatments

When you buy a bottled beverage product, it usually comes in a PET bottle. Virgin PET is not very eco-friendly: it is created from oil, and the processes for creating virgin PET plastic bottles use up a considerable amount of energy. **rPET (Recycled PET) is a more eco-friendly packaging alternative.** It takes less energy to recycle and create an rPET bottle than to manufacture a virgin PET bottle, and the recycling of PET bottles to make rPET bottles means that the original bottles are not thrown into landfills to cause more pollution. According to the scientific consensus, rPET bottles are both safe and hygienic to use for food and beverages and are just as light as virgin PET bottles. In Europe and North America, many bottled beverage companies (including Coca-Cola, PepsiCo, Nestlé and evian) are offering their products in bottles that are made of 50, 75, or even 100 percent rPET.

Another way to reduce plastic pollution is through source reduction - eliminate plastic waste before it is created. Through weighing two bottled juice product bundles both totaling at 1.8 L in volume, we found that **the small bottle bundle (300 mL × 6 pack) uses 27 percent more plastic packaging than large bottle bundle (900 mL × 2 pack).** In addition, research by scholars from the University of South Carolina and University of California, Los Angeles in the U.S. estimated that holding constant the total volume of beverage sold, a 20 percent shift in consumption from small plastic bottles (below 473 mL) to midsize bottles (between 473 mL and 3L) could reduce the annual production of PET waste by over 10,000 t in the U.S. alone.

## Appendix D

**Table D1** Bottled non-carbonated beverage product purchasing behavior

Variable	T1 = Control	T2 = Green label	T3 = rPET info	T4 = rPET info + Green label	T5 = Size info	T6 = Size info + Green label	T7 = Both info	T8 = Both info + Green label	Overall
<b>Importance of packaging in food and beverage purchasing decisions</b>									
5 = Extremely important, 4 = Very important, 3 = Moderately important... to 1 = Not at all important	3.86 (1.03)	3.79 (1.04)	3.91 (0.95)	3.93 (1.03)	3.44 (0.97)	3.68 (1.01)	3.79 (1.12)	3.79 (1.02)	3.77 (1.03)
$X^2 = 14.12, df = 7, P = 0.05$									
<b>Purchase frequency (%)</b>									
Every day	5.63	6.41	11.39	11.25	8.86	9.20	13.10	6.58	9.15
Two to three times a week	50.70	42.31	43.04	35.00	41.77	43.68	41.67	39.47	42.11
Once a week	28.17	24.36	34.18	30.00	29.11	22.99	22.62	34.21	28.08
Twice a month	9.86	11.54	7.59	12.50	11.39	10.34	8.33	13.16	10.57
≤ Once a month	5.63	15.38	3.80	11.25	8.86	13.79	14.29	6.58	10.09
$X^2 = 30.12, df = 28, P = 0.36$									
<b>Purchase volume (%)</b>									
≤ 300 mL	5.63	3.85	7.59	2.50	8.86	8.05	5.95	6.58	6.15
300–600 mL (600 mL inclusive)	29.58	30.77	17.72	25.00	31.65	28.74	35.71	25.00	28.08
600 mL to 1 L (1 L inclusive)	25.35	28.21	20.25	31.25	27.85	19.54	17.86	25.00	24.29
1–1.5 L (1.5 L inclusive)	15.49	15.38	22.78	22.50	18.99	17.24	19.05	25.00	19.56
1.5–2 L (2 L inclusive)	18.31	19.23	22.78	8.75	10.13	16.09	13.10	11.84	14.98
> 2 L	5.63	2.56	8.86	10.00	2.53	10.34	8.33	6.58	6.94
$X^2 = 44.53, df = 35, P = 0.13$									
<b>N</b>	71	78	79	80	79	87	84	76	634

Note: Numbers in parentheses are standard deviations. Kruskal-Wallis tests (for importance of packaging) and Pearson's chi-square tests (for purchase frequency and volume) were conducted to test the null hypothesis of no difference in the distribution of variables across treatment groups.

**Table D2** Waste sorting and recycling behavior

Variable	T1 = Control	T2 = Green label	T3 = rPET info	T4 = rPET info + Green label	T5 = Size info	T6 = Size info + Green label	T7 = Both info	T8 = Both info + Green label	Overall
<b>Waste sorting frequency</b>									
6 = Always, 5 = Most of the time, 4 = About half of the time... to 1 = Never	4.72 (1.35)	4.94 (1.15)	4.82 (1.34)	4.98 (1.08)	4.81 (1.25)	4.82 (1.24)	5.18 (1.07)	4.58 (1.44)	4.86 (1.25)
$X^2 = 10.25, df = 7, P = 0.17$									
<b>Plastic bottle recycling frequency</b>									
6 = Always, 5 = Most of the time, 4 = About half of the time... to 1 = Never	5.08 (1.01)	5.41 (0.69)	5.08 (1.14)	5.14 (1.19)	5.08 (1.25)	5.16 (1.12)	5.08 (1.18)	4.96 (1.15)	5.12 (1.11)
$X^2 = 6.21, df = 7, P = 0.52$									
<b>N</b>	71	78	79	80	79	87	84	76	634

Note: Numbers in parentheses are standard deviations. Kruskal-Wallis tests (for waste sorting and plastic bottle recycling frequency) were conducted to test the null hypothesis of no difference in the distribution of variables across treatment groups.

**Table D3** Knowledge and perception of rPET

Variable	T1 = Control	T2 = Green label	T3 = rPET info	T4 = rPET info + Green label	T5 = Size info	T6 = Size info + Green label	T7 = Both info	T8 = Both info + Green label	Overall
<b>Do you know anything about using rPET as packaging material for food and beverage products? (%)</b>									
Yes	84.51	80.77	86.08	85.00	87.34	81.61	91.67	86.84	85.49
No	15.49	19.23	13.92	15.00	12.66	18.39	8.33	13.16	14.51
$X^2 = 6.63, df = 7, P = 0.47$									
<b>N</b>	71	78	79	80	79	87	84	76	634
<b>Do you like rPET as packaging material for food and beverage products?</b>									
5 = "I prefer rPET packaging to traditional plastic packaging", 4 = "I am open to trying rPET packaging", 3 = "I am neutral about it"... to 1 = "I would never buy it"	4.32 (0.62)	4.32 (0.71)	4.51 (0.61)	4.25 (0.66)	4.36 (0.75)	4.45 (0.77)	4.31 (0.67)	4.23 (0.80)	4.35 (0.70)
$X^2 = 11.62, df = 7, P = 0.11$									
<b>N</b>	60	63	68	68	69	71	77	66	542
<b>What do you know about laws, rules, or regulations concerning the use of rPET in food and beverage packaging in China? (%)</b>									
It is encouraged.	67.61	64.10	73.42	73.75	69.62	68.97	71.43	71.05	70.03
It is banned.	1.41	1.28	3.80	5.00	2.53	4.60	5.95	5.26	3.79
I don't know./I am not sure.	15.49	15.38	8.86	6.25	15.19	8.05	14.29	10.53	11.67
$X^2 = 14.66, df = 14, P = 0.40$									
<b>N</b>	60	63	68	68	69	71	77	66	542

Note: Numbers in parentheses are standard deviations. Only respondents who chose "Yes" in the question on rPET knowledge proceeded to respond to the next two questions about rPET preference and rPET policy and regulations. Pearson's chi-square tests (for knowledge about rPET and rPET policy and regulations) and Kruskal-Wallis tests (for rPET preference) were conducted to test the null hypothesis of no difference in the distribution of variables across treatment groups.

**Table D4** Food safety concerns

Variable	T1 = Control	T2 = Green label	T3 = rPET info	T4 = rPET info + Green label	T5 = Size info	T6 = Size info + Green label	T7 = Both info	T8 = Both info + Green label	Overall
<i>Food safety concerns</i>									
<b>To what extent do you agree with the statement "I am concerned about food safety"?</b>									
5 = Strongly agree, 4 = Agree, 3 = Neither agree nor disagree... to 1 = Strongly disagree	4.62 (0.57)	4.69 (0.49)	4.72 (0.48)	4.65 (0.58)	4.53 (0.60)	4.62 (0.53)	4.62 (0.51)	4.55 (0.64)	4.63 (0.55)
$X^2 = 6.59, df = 7, P = 0.47$									
<b>N</b>	71	78	79	80	79	87	84	76	634

Note: Numbers in parentheses are standard deviations. Kruskal-Wallis tests were conducted to test the null hypothesis of no difference in the distribution of variables across treatment groups.

**Table D5** Estimates of mixed logit models across treatment groups

Variable	T1 = Control			T2 = Green label			T3 = rPET info			T4 = rPET info + Green label		
	Coef.	Std. Err.		Coef.	Std. Err.		Coef.	Std. Err.		Coef.	Std. Err.	
<i>Mean</i>												
Price	-0.043	0.005	***	-0.043	0.005	***	-0.042	0.005	***	-0.034	0.005	***
rPET	0.967	0.221	***	1.709	0.271	***	1.580	0.194	***	2.060	0.225	***
Large	0.042	0.160		-0.311	0.162	*	-0.024	0.142		-0.047	0.145	
rPET × GREEN score	0.028	0.071		0.258	0.082	***	0.251	0.073	***	0.288	0.061	***
Large × GREEN score	-0.003	0.052		0.011	0.042		0.023	0.052		-0.051	0.042	
ASCOpt-out	-3.547	0.305	***	-3.558	0.321	***	-3.031	0.283	***	-2.572	0.285	***
<i>Standard Deviation</i>												
rPET	1.300	0.272	***	1.591	0.436	***	0.915	0.288	***	1.209	0.213	***
Large	0.725	0.277	***	0.747	0.210	***	0.431	0.324		0.514	0.222	**
rPET × GREEN score	0.227	0.122	*	0.280	0.221		0.241	0.132	*	0.001	0.111	
Large × GREEN score	0.144	0.107		0.000	0.083		0.157	0.097		0.000	0.062	
<i>Log-likelihood</i>	-419.141			-403.241			-436.628			-395.392		
<i>AIC</i>	858.282			826.482			893.256			810.783		
<i>BIC</i>	901.703			870.844			937.745			855.398		
<i>Number of observations</i>	568			624			632			640		

Note: Asterisks \*, \*\*, and \*\*\* indicate 10%, 5%, and 1% significance levels. The Akaike information criterion (AIC) is an estimator of prediction error and thereby relative quality of statistical models for a given set of data. The Bayesian information criterion (BIC) is a criterion for model selection among a finite set of models

(Continue)

Variable	T5 = Size info			T6 = Size info + Green label			T7 = Both info			T8 = Both info + Green label		
	Coef.	Std. Err.		Coef.	Std. Err.		Coef.	Std. Err.		Coef.	Std. Err.	
<i>Mean</i>												
Price	-0.058	0.005	***	-0.036	0.004	***	-0.032	0.004	***	-0.025	0.004	***
rPET	1.733	0.231	***	1.371	0.191	***	1.027	0.186	***	1.506	0.177	***
Large	0.022	0.166		0.177	0.176		0.012	0.128		0.077	0.138	
rPET × GREEN score	0.054	0.059		0.214	0.059	***	0.069	0.057		0.206	0.047	***
Large × GREEN score	-0.075	0.048		0.104	0.058	*	-0.029	0.040		0.017	0.033	
ASCOpt-out	-3.532	0.300	***	-2.980	0.276	***	-2.691	0.247	***	-2.164	0.271	***
<i>Standard Deviation</i>												
rPET	1.424	0.221	***	1.224	0.198	***	1.289	0.212	***	0.880	0.218	***
Large	0.859	0.262	***	1.193	0.190	***	0.610	0.169	***	0.578	0.188	***
rPET × GREEN score	0.000	0.105		0.000	0.098		0.024	0.524		0.095	0.090	
Large × GREEN score	0.063	0.218		0.001	0.164		0.000	0.105		0.000	0.076	
<i>Log-likelihood</i>	-434.346			-494.902			-532.244			-434.507		
<i>AIC</i>	888.692			1009.803			1084.487			889.013		
<i>BIC</i>	933.180			1055.257			1129.590			933.115		
<i>Number of observations</i>	632			696			672			608		

Note: Asterisks \*, \*\*, and \*\*\* indicate 10%, 5%, and 1% significance levels. The Akaike information criterion (AIC) is an estimator of prediction error and thereby relative quality of statistical models for a given set of data. The Bayesian information criterion (BIC) is a criterion for model selection among a finite set of models.

## REFERENCE

[1] Yu Y, Lin L. Legal regulation of recycling of food contact plastic packaging materials in China: a case study on polyethylene terephthalate (PET) beverage bottles. *Food Science*, 2019, **40**(19): 370–377 (in Chinese)