Online Supplemental Table 1. Balance analysis for randomly assigned left/right position and 3 label variations.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Null hypothesis | Product category | Degrees of freedom | Chi-square | p-valuea |
| No association between age category and 3 cereal label variations. | Cereal (n=1017) | 10 | 13.85 | 0.180 |
| Crackers (n=1010) | 10 | 14.04 | 0.171 |
| Bread (n=1015) | 10 | 1.40 | 0.999 |
| No association between age category and left/right position. | Cereal (n=1017) | 5 | 2.53 | 0.772 |
| Crackers (n=1010) | 5 | 2.16 | 0.827 |
| Bread (n=1015) | 5 | 7.98 | 0.157 |
| No association between race category and 3 cereal label variations. | Cereal (n=1015) | 4 | 2.47 | 0.651 |
| Crackers (n=1008) | 4 | 2.89 | 0.576 |
| Bread (n=1013) | 4 | 5.97 | 0.202 |
| No association between race category and left/right position. | Cereal (n=1015) | 2 | 0.03 | 0.988 |
| Crackers (n=1008) | 2 | 0.67 | 0.716 |
| Bread (n=1013) | 2 | 1.82 | 0.402 |
| No association between education category and 3 cereal label variations. | Cereal (n=1017) | 6 | 3.74 | 0.711 |
| Crackers (n=1010) | 6 | 2.65 | 0.851 |
| Bread (n=1015) | 6 | 10.30 | 0.112 |
| No association between education category and left/right position. | Cereal (n=1017) | 3 | 5.80 | 0.122 |
| Crackers (n=1010) | 3 | 0.86 | 0.834 |
| Bread (n=1015) | 3 | 4.46 | 0.216 |

ap-value < 0.05 would indicate lack of balance in random assignment.

Online Supplemental Table 2. Relative frequency of correct response (unlabeled option was healthier) and incorrect response (WG labeled option was healthier or both options were equally healthy), for the full sample and for 3 variations on the product labelsa

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  | **Frequency** | **SE** | **Frequency** | **SE** | **Frequency** | **SE** | **Frequency** | **SE** |
|  | **Cereal (n=1030)** |  | **Full Sample** | | **1 Made with WG (n=310)** | | **2 Multigrain**  **(n=376)** | | **3 WG Stamp (n=344)** | |
| 1 | Unlabeled | Correct | 68.9 | 1.4 | 70.6 | 2.6 | 66.0 | 2.4 | 70.6 | 2.5 |
| 2 | Equally Healthy | Incorrect | 19.6 | 1.2 | 15.8 | 2.1 | 22.1 | 2.1 | 20.3 | 2.2 |
| 3 | Labeled | Incorrect | 11.5 | 1.0 | 13.5 | 1.9 | 12.0 | 1.7 | 9.0 | 1.5 |
|  | **Crackers (n=1016)** |  | **Full Sample** | | **1 Made with WG (n=334)** | | **2 Multigrain (n=353)** | | **3 WG Stamp (n=329)** | |
| 1 | Unlabeled | Correct | 65.3 | 1.5 | 63.5 | 2.6 | 61.8 | 2.6 | 70.8 | 2.5 |
| 2 | Equally Healthy | Incorrect | 22.7 | 1.3 | 22.2 | 2.3 | 24.9 | 2.3 | 21.0 | 2.2 |
| 3 | Labeled | Incorrect | 12.0 | 1.0 | 14.4 | 1.9 | 13.3 | 1.8 | 8.2 | 1.5 |
|  | **Bread (n=1022)** |  | **Full Sample** | | **1 Multigrain (n=344)** | | **2 Wheat (n=347)** | | **3 WG Stamp (n=331)** | |
| 1 | Unlabeled | Correct | 53.0 | 1.6 | 54.1 | 2.7 | 53.0 | 2.7 | 52.0 | 2.8 |
| 2 | Equally Healthy | Incorrect | 20.7 | 1.3 | 18.3 | 2.1 | 20.2 | 2.2 | 23.6 | 2.3 |
| 3 | Labeled | Incorrect | 26.3 | 1.4 | 27.6 | 2.4 | 26.8 | 2.4 | 24.5 | 2.4 |

aImages for the hypothetical product comparison are in Online Supplemental Figure 1.

Online Supplemental Table 3. Ordered logit estimates for propensity to respond incorrectly when comparing hypothetical product pairs for which the unlabeled option was healthier (reduced model without a question about “difficult to determine” WG content).a

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Cereal |  | Crackers |  | Bread |  |
| Explanatory Var.b | Coefd | SE | Coefd | SE | Coefd | SE |
| Label variation 1c | (comparison) |  | (comparison) |  | (comparison) |  |
| Label variation 2 | 0.154 | 0.169 | 0.068 | 0.160 | -0.002 | 0.151 |
| Label variation 3 | -0.050 | 0.176 | -0.343 | 0.168 | 0.065 | 0.152 |
|  |  |  |  |  |  |  |
| 18 to 24 years old | (comparison) |  | (comparison) |  | (comparison) |  |
| 25 to 34 years old | 0.470 | 0.260 | 0.544 | 0.256 | 0.127 | 0.242 |
| 35 to 44 years old | 0.368 | 0.260 | 0.357 | 0.256 | -0.001 | 0.240 |
| 45 to 54 years old | -0.190 | 0.273 | -0.256 | 0.267 | -0.481 | 0.247 |
| 55 to 64 years old | -0.478 | 0.290 | -0.171 | 0.273 | -0.561 | 0.255 |
| Age 65 or more | -0.543 | 0.293 | -0.876 | 0.300 | -0.743 | 0.259 |
|  |  |  |  |  |  |  |
| Black / Afr. Amer. | (comparison) |  | (comparison) |  | (comparison) |  |
| Asian / Pacific Islander and Other | 0.107 | 0.267 | -0.394 | 0.274 | -0.008 | 0.254 |
| White / Caucasian | -0.523 | 0.187 | -0.595 | 0.180 | -0.658 | 0.178 |
|  |  |  |  |  |  |  |
| College degree | (comparison) |  | (comparison) |  | (comparison) |  |
| Grad / prof. degree | 0.161 | 0.229 | 0.167 | 0.221 | 0.356 | 0.203 |
| HS or less | 0.546 | 0.178 | 0.450 | 0.176 | 0.757 | 0.163 |
| Some college | 0.2010653 | 0.188 | 0.214038 | 0.183 | 0.377096 | 0.170 |
|  |  |  |  |  |  |  |
| Cutpoint 1 (Equal versus Unlabeled) | 0.695 | 0.304 | 0.281 | 0.293 | -0.250 | 0.282 |
| Cutpoint 2 (Labeled versus Equal) | 1.992 | 0.312 | 1.729 | 0.300 | 0.722 | 0.283 |
| Obs | 1,015 |  | 1,008 |  | 1,013 |  |

aOutcome variable coded 1 (unlabeled), 2 (equally healthy), 3 (WG labeled). bSee also main ordered logit model in Table 4. An extended model is presented in Online Supplemental Table 4. cWG label variations for the cereal and cracker categories: (1) “made with whole grains,” (2) “multigrain,” and (3) a WG stamp; and for the bread category: (1) “multigrain,” (2) “wheat,” and (3) a WG stamp. dCoefficient shows effect of each explanatory variable on the log-odds of having the next higher value of the outcome variable (i.e. choosing equally healthy over unlabeled).

Online Supplemental Table 4. Ordered logit estimates for propensity to respond incorrectly when comparing hypothetical product pairs for which the unlabeled option was healthier (expanded model with additional demographic variables).a

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Cereal |  | Crackers |  | Bread |  |
| Explanatory Var.b | Coefd | SE | Coefd | SE | Coefd | SE |
| Label variation 1c | (comparison) |  | (comparison) |  | (comparison) |  |
| Label variation 2 | 0.144 | 0.174 | 0.005 | 0.163 | -0.012 | 0.152 |
| Label variation 3 | -0.079 | 0.180 | -0.356 | 0.171 | 0.095 | 0.154 |
|  |  |  |  |  |  |  |
| WG in left position | -0.197 | 0.141 | -0.160 | 0.136 | -0.139 | 0.126 |
|  |  |  |  |  |  |  |
| “Difficult to determine” which products contain WG |  |  |  |  |  |  |
| strong disagreement | (comparison) |  | (comparison) |  | (comparison) |  |
| some disagreement | -0.627 | 0.267 | -0.308 | 0.247 | -0.007 | 0.222 |
| neither | 0.274 | 0.244 | 0.209 | 0.236 | 0.490 | 0.219 |
| some agreement | 0.266 | 0.249 | 0.269 | 0.240 | 0.246 | 0.222 |
| strong agreement | 0.874 | 0.279 | 0.960 | 0.269 | 0.668 | 0.256 |
|  |  |  |  |  |  |  |
| 18 to 24 years old | (comparison) |  | (comparison) |  | (comparison) |  |
| 25 to 34 years old | 0.452 | 0.266 | 0.477 | 0.261 | 0.050 | 0.246 |
| 35 to 44 years old | 0.336 | 0.266 | 0.308 | 0.260 | -0.045 | 0.243 |
| 45 to 54 years old | -0.195 | 0.282 | -0.269 | 0.273 | -0.534 | 0.252 |
| 55 to 64 years old | -0.402 | 0.298 | -0.190 | 0.279 | -0.527 | 0.260 |
| Age 65 or more | -0.509 | 0.302 | -0.834 | 0.305 | -0.732 | 0.263 |
|  |  |  |  |  |  |  |
| Male | 0.250 | 0.146 | -0.147 | 0.141 | -0.033 | 0.130 |
|  |  |  |  |  |  |  |
| Black / Afr. Amer. | (comparison) |  | (comparison) |  | (comparison) |  |
| Asian / Pacific Islander and Other | 0.208 | 0.279 | -0.263 | 0.284 | -0.085 | 0.264 |
| White / Caucasian | -0.387 | 0.199 | -0.341 | 0.190 | -0.600 | 0.186 |
|  |  |  |  |  |  |  |
| Non-Hispanic | 0.028 | 0.222 | 0.160 | 0.221 | -0.310 | 0.200 |
|  |  |  |  |  |  |  |
| College degree |  |  | (comparison) |  | (comparison) |  |
| Grad / prof. degree | 0.038 | 0.237 | 0.112 | 0.227 | 0.356 | 0.208 |
| HS or less | 0.503 | 0.182 | 0.412 | 0.178 | 0.711 | 0.165 |
| Some college | 0.170 | 0.192 | 0.205 | 0.186 | 0.317 | 0.173 |
|  |  |  |  |  |  |  |
| Cutpoint 1 (Equal versus Unlabeled) | 0.922 | 0.431 | 0.575 | 0.417 | -0.351 | 0.392 |
| Cutpoint 2 (Labeled versus Equal) | 2.271 | 0.438 | 2.058 | 0.424 | 0.630 | 0.392 |
| Obs | 1008 |  | 1001 |  | 1006 |  |

aOutcome variable coded 1 (unlabeled), 2 (equally healthy), 3 (WG labeled). bSee also main ordered logit model in Table 4. An extended model is presented in Online Supplemental Table 4. cWG label variations for the cereal and cracker categories: (1) “made with whole grains,” (2) “multigrain,” and (3) a WG stamp; and for the bread category: (1) “multigrain,” (2) “wheat,” and (3) a WG stamp. dCoefficient shows effect of each explanatory variable on the log-odds of having the next higher value of the outcome variable (i.e. choosing equally healthy over unlabeled).

Online Supplemental Table 5. Whole grain content comprehension questions for actual products with varying amounts of WG contenta

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | Frequency of Respondent Choices (%) | | | | |
| Product Description | Actual Whole Grain Content | “All the grain is whole grain” | “Half or more than half the grain is whole grain” | “Less than half the grain is whole grain” | "There is little or no whole grain” | “Other” |
| Honey Wheat Bread | “Less than half” or “little or no” is correct. Whole wheat flour (6th ingredient) is less than unbleached enriched wheat flour (1st ingredient). | 17.89 | 24.95 | 22.44 | 30.46 | 4.26 |
| Multigrain Cracker | “Less than half” or “little or no” is correct. Whole wheat flour (5th ingredient) is less than enriched wheat flour (1st ingredient). | 14.33 | 26.62 | 30.40 | 25.56 | 3.10 |
| Farmhouse 12 Grain Bread | “Less than half” or “little or no” is correct. Whole wheat flour (3rd ingredient) is less than enriched wheat flour (1st ingredient). | 22.14 | 29.13 | 27.86 | 18.16 | 2.72 |
| Apple Cinnamon Oat Cereal | “Half or more” is correct. WG oats (1st ingredient) is more than corn starch (3rd ingredient). | 45.05 | 36.60 | 11.84 | 4.85 | 1.65 |

a.Product images are in Figure 1 (may be supplemental).

WG, Whole Grain

Online Supplemental Table 6. Chi-square hypothesis tests from ordered logit models of correct responses (unlabeled option was healthier) and incorrect responses (WG labeled option was healthier or both options were equally healthy) in hypothetical product comparisons.a

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Null hypothesis | Product category | Degrees of freedom | Chi-square | p-value |
| No association with left/right position | Cereal (n=1030) | 1 | 2.45 | 0.118 |
| Crackers (n=1016) | 1 | 2.73 | 0.099 |
| Bread (n=1022) | 1 | 2.54 | 0.111 |
| No association with 3 label variations | Cereal (n=1030) | 2 | 1.98 | 0.372 |
| Crackers (n=1016) | 2 | 7.92 | 0.019 |
| Bread (n=1022) | 2 | 0.00 | 0.998 |
| No association with agreement that it is difficult to determine WG content | Cereal (n=1023) | 4 | 56.71 | 0.000 |
| Crackers (n=1015) | 4 | 48.21 | 0.000 |
| Bread (n=1021) | 4 | 28.65 | 0.000 |

aImages for product comparisons are in Online Supplemental Figure 2. Ordered logit outcome variable coded 1 (unlabeled), 2 (equally healthy), 3 (WG labeled).