**Table 3.** Parameter estimates, standard errors, and goodness-of-fit statistics (R2) from the EASI demand model

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Parameters | Peanuts | Pecans | Almonds | Cashews | Walnuts | Pistachios | Mixed nuts | Other nuts | Macadamia nuts |
| Intercept *(αi0)* | 0.0711 | -1.0018\*\* | -0.5225\*\*\* | -2.3940\*\*\* | -0.7042\*\* | -2.2821\*\*\* | -2.8280\*\*\* | 1.4105\*\*\* | 9.2509\*\*\* |
|  | *(0.0660)* | *(0.4783)* | *(0.1966)* | *(0.4851)* | *(0.2949)* | *(0.5892)* | *(0.4218)* | *(0.2003)* | *(0.8937)* |
| Peanut price *(γ1i)* | -0.0094 | 0.0026 | -0.0102 | 0.0019 | 0.0059 | 0.0072 | 0.0076 | 0.0118\* | -0.0173\* |
|  | *(0.0113)* | *(0.0072)* | *(0.0064)* | *(0.0103)* | *(0.0082)* | *(0.0104)* | *(0.0097)* | *(0.0071)* | *(0.0089)* |
| Pecan price *(γ2i)* |  | -0.0109 | 0.0007 | 0.0104 | -0.0043 | -0.0122 | -0.0041 | 0.0017 | 0.0161\*\* |
|  |  | *(0.0095)* | *(0.0060)* | *(0.0102)* | *(0.0081)* | *(0.0108)* | *(0.0091)* | *(0.0058)* | *(0.0072)* |
| Almond price *(γ3i)* |  |  | -0.0122\* | -0.0087 | -0.0015 | -0.0020 | 0.0068 | 0.0074 | 0.0196\*\*\* |
|  |  |  | *(0.0074)* | *(0.0098)* | *(0.0074)* | *(0.0096)* | *(0.0078)* | *(0.0051)* | *(0.0062)* |
| Cashew price *(γ4i)* |  |  |  | -0.0161 | -0.0004 | 0.0134 | -0.0064 | -0.0005 | 0.0063 |
|  |  |  |  | *(0.0199)* | *(0.0122)* | *(0.0160)* | *(0.0127)* | *(0.0090)* | *(0.0123)* |
| Walnut price *(γ5i)* |  |  |  |  | -0.0274\*\* | -0.0090 | 0.0001 | -0.0087 | 0.0453\*\*\* |
|  |  |  |  |  | *(0.0122)* | *(0.0113)* | *(0.0100)* | *(0.0075)* | *(0.0076)* |
| Pistachio price *(γ6i)* |  |  |  |  |  | -0.0240 | -0.0015 | 0.0092 | 0.0189\* |
|  |  |  |  |  |  | *(0.0193)* | *(0.0127)* | *(0.0096)* | *(0.0103)* |
| Mixed nut price *(γ7i)* |  |  |  |  |  |  | -0.0230\* | -0.0074 | 0.0280\*\*\* |
|  |  |  |  |  |  |  | *(0.0134)* | *(0.0076)* | *(0.0095)* |
| Other nut price *(γ8i)* |  |  |  |  |  |  |  | -0.0107 | -0.0027 |
|  |  |  |  |  |  |  |  | *(0.0073)* | *(0.0069)* |
| Macadamia nut price *(γ9i)* |  |  |  |  |  |  |  |  | -0.1142\*\*\* |
|  |  |  |  |  |  |  |  |  | *(0.0129)* |
| Real expenditure *(βi1)* | -0.7275\*\*\* | -0.5624\*\*\* | 0.4006\*\*\* | 0.4643\*\*\* | 0.6908\*\*\* | 0.7132\*\*\* | -0.1844\*\*\* | 0.3324\*\*\* | -1.1270\*\*\* |
|  | *(0.0314)* | *(0.0262)* | *(0.0205)* | *(0.0445)* | *(0.0368)* | *(0.0406)* | *(0.0375)* | *(0.0303)* | *(0.0299)* |
| Real expenditure *(βi2)* | 0.3847\*\*\* | 0.2634\*\*\* | -0.2314\*\*\* | -0.2277\*\*\* | -0.3144\*\*\* | -0.2481\*\*\* | 0.1062\*\*\* | -0.2611\*\*\* | 0.5283\*\*\* |
|  | *(0.0200)* | *(0.0186)* | *(0.0153)* | *(0.0307)* | *(0.0250)* | *(0.0304)* | *(0.0268)* | *(0.0206)* | *(0.0204)* |
| Real expenditure *(βi3)* | -0.0904\*\*\* | -0.0572\*\*\* | 0.0598\*\*\* | 0.0510\*\*\* | 0.0653\*\*\* | 0.0421\*\*\* | -0.0261\*\*\* | 0.0716\*\*\* | -0.1161\*\*\* |
|  | *(0.0056)* | *(0.0057)* | *(0.0047)* | *(0.0092)* | *(0.0074)* | *(0.0095)* | *(0.0082)* | *(0.0062)* | *(0.0060)* |
| Real expenditure *(βi4)* | 0.0095\*\*\* | 0.0058\*\*\* | -0.0071\*\*\* | -0.0052\*\*\* | -0.0063\*\*\* | -0.0034\*\* | 0.0031\*\*\* | -0.0083\*\*\* | 0.0119\*\*\* |
|  | *(0.0007)* | *(0.0008)* | *(0.0006)* | *(0.0013)* | *(0.0010)* | *(0.0013)* | *(0.0011)* | *(0.0008)* | *(0.0008)* |
| Real expenditure *(βi5)* | -0.0004\*\*\* | -0.0002\*\*\* | 0.0003\*\*\* | 0.00020\*\*\* | 0.0002\*\*\* | 0.0001 | -0.0002\*\*\* | 0.0004\*\*\* | -0.0005\*\*\* |
|  | *(0.0001)* | *(0.0001)* | *(0.00001)* | *(0.0001)* | *(0.0001)* | *(0.0001)* | *(0.0001)* | *(0.0001)* | *(0.0001)* |
|  |  |  |  |  |  |  |  |  |  |
| log of income | -0.0374\*\*\* | 0.0524\*\*\* | 0.0215\*\* | 0.0062\*\* | -0.0094\* | 0.0521\*\*\* | 0.0890\*\*\* | -0.0346\*\*\* | -0.1398\*\*\* |
|  | *(0.0023)* | *(0.0163)* | *(0.0104)* | *(0.0033)* | *(0.0053)* | *(0.0196)* | *(0.0123)* | *(0.0032)* | *(0.0275)* |
| Hsize | 0.0529\*\*\* | 0.0323\*\*\* | 0.0023 | 0.0388\*\*\* | 0.0105 | 0.0249\*\*\* | 0.0315\*\*\* | -0.0257\*\*\* | -0.1675\*\*\* |
|  | *(0.0045)* | *(0.0090)* | *(0.0014)* | *(0.0118)* | *(0.0070)* | *(0.0076)* | *(0.0062)* | *(0.0051)* | *(0.0166)* |
| agehhunde25 | -0.1848\*\* | -0.0753 | 0.1129 | -0.4123\*\* | 0.0410 | 0.0485 | -0.2914\*\* | -0.1832\*\* | 0.9446\*\*\* |
|  | *(0.0840)* | *(0.0853)* | *(0.0704)* | *(0.1653)* | *(0.0609)* | *(0.1576)* | *(0.1293)* | *(0.0899)* | *(0.1240)* |
| agehh25to29 | -0.0105 | -0.2821\*\*\* | 0.0062 | -0.6428\*\*\* | -0.0781 | -0.0836 | -0.4116\*\*\* | 0.0408\*\* | 1.4618\*\*\* |
|  | *(0.0226)* | *(0.0700)* | *(0.0204)* | *(0.1615)* | *(0.0717)* | *(0.0562)* | *(0.0729)* | *(0.0191)* | *(0.1713)* |
| agehh30to34 | -0.0516\*\*\* | -0.0608\*\*\* | 0.0591\*\*\* | -0.2320\*\*\* | -0.1535\*\*\* | 0.0117 | -0.5083\*\*\* | -0.0439\* | 0.9794\*\*\* |
|  | *(0.0143)* | *(0.0223)* | *(0.0129)* | *(0.0533)* | *(0.0470)* | *(0.0211)* | *(0.0685)* | *(0.0242)* | *(0.0872)* |
| agehh35to39 | -0.0998\*\*\* | -0.1050\*\*\* | 0.0601\*\*\* | -0.1859\*\*\* | -0.1681\*\*\* | -0.0048 | -0.5279\*\*\* | -0.0404 | 1.0716\*\*\* |
|  | *(0.0133)* | *(0.0262)* | *(0.0091)* | *(0.0466)* | *(0.0534)* | *(0.0165)* | *(0.0712)* | *(0.0268)* | *(0.0916)* |
| agehh40to44 | -0.0279\*\*\* | -0.1085\*\*\* | 0.0572\*\*\* | -0.0997\*\*\* | -0.1692\*\*\* | 0.0364\*\*\* | -0.4306\*\*\* | -0.0546\*\* | 0.7969\*\*\* |
|  | *(0.0078)* | *(0.0300)* | *(0.0086)* | *(0.0251)* | *(0.0551)* | *(0.0130)* | *(0.0572)* | *(0.0255)* | *(0.0830)* |
| agehh45to49 | -0.0243\*\*\* | -0.0681\*\*\* | 0.0486\*\*\* | -0.0540\*\*\* | -0.1376\*\*\* | 0.0700\*\*\* | -0.2772\*\*\* | -0.0726\*\*\* | 0.5152\*\*\* |
|  | *(0.0057)* | *(0.0226)* | *(0.0078)* | *(0.0125)* | *(0.0413)* | *(0.0203)* | *(0.0348)* | *(0.0265)* | *(0.0637)* |
| agehh50to54 | -0.0257\*\*\* | -0.0393\*\*\* | 0.0368\*\*\* | -0.0194\*\*\* | -0.0994\*\*\* | 0.0538\*\*\* | -0.2001\*\*\* | -0.0655\*\*\* | 0.3588\*\*\* |
|  | *(0.0047)* | *(0.0117)* | *(0.0064)* | *(0.0066)* | *(0.0305)* | *(0.0175)* | *(0.0255)* | *(0.0224)* | *(0.0480)* |
| agehh55to64 | -0.0205\*\*\* | -0.0187\*\*\* | 0.0257\*\*\* | 0.0653\*\*\* | -0.0578\*\*\* | 0.0476\*\*\* | -0.0938\*\*\* | -0.0461\*\*\* | 0.0983\*\*\* |
|  | *(0.0033)* | *(0.0070)* | *(0.0062)* | *(0.0149)* | *(0.0154)* | *(0.0165)* | *(0.0120)* | *(0.0148)* | *(0.0341)* |
| eduhh\_lesshigh | 0.0146 | -0.0813\*\*\* | -0.0989\*\* | 0.1558\*\*\* | -0.0111 | -0.0664 | -0.1132\*\*\* | 0.0989\*\*\* | 0.1017 |
|  | *(0.0135)* | *(0.0212)* | *(0.0498)* | *(0.0206)* | *(0.0156)* | *(0.0544)* | *(0.0243)* | *(0.0161)* | *(0.0646)* |
| eduhh\_highschool | 0.0566\*\*\* | -0.0295\*\*\* | -0.0545\*\*\* | -0.0396\*\*\* | 0.0077\* | -0.0113 | -0.0721\*\*\* | 0.0186\*\*\* | 0.1242\*\*\* |
|  | *(0.0041)* | *(0.0103)* | *(0.0185)* | *(0.0101)* | *(0.0044)* | *(0.0108)* | *(0.0112)* | *(0.0039)* | *(0.0228)* |
| eduhh\_somecollege | 0.0372\*\*\* | -0.0016 | -0.0355\*\*\* | 0.0173\*\*\* | -0.0035 | 0.0139\*\*\* | -0.0254\*\*\* | -0.0012 | -0.0011 |
|  | *(0.0036)* | *(0.0032)* | *(0.0103)* | *(0.0048)* | *(0.0035)* | *(0.0041)* | *(0.0050)* | *(0.0042)* | *(0.0120)* |
| White | -0.0102 | 0.0115 | 0.0064 | -0.0868\*\*\* | -0.0019 | -0.0197 | 0.0161\* | 0.0091 | 0.0756\*\*\* |
|  | *(0.0076)* | *(0.0099)* | *(0.0067)* | *(0.0198)* | *(0.0092)* | *(0.0145)* | *(0.0097)* | *(0.0089)* | *(0.0233)* |
| Black | -0.0214\*\* | 0.0333\*\*\* | -0.0441\*\* | 0.0458\*\*\* | -0.0399\*\* | -0.0145 | -0.0352\*\*\* | 0.0215\*\* | 0.0545\* |
|  | *(0.0093)* | *(0.0126)* | *(0.0188)* | *(0.0107)* | *(0.0163)* | *(0.0197)* | *(0.0118)* | *(0.0088)* | *(0.0295)* |
| Asian | 0.0569\*\*\* | -0.0917\*\* | -0.0006 | -0.0803\*\*\* | -0.0698\*\*\* | 0.1527\*\*\* | 0.0430\*\*\* | 0.0107 | -0.0209 |
|  | *(0.0104)* | *(0.0388)* | *(0.0096)* | *(0.0184)* | *(0.0226)* | *(0.0456)* | *(0.0138)* | *(0.0133)* | *(0.0646)* |
| hispanic\_yes | -0.0475\*\*\* | -0.0250\* | -0.0022 | -0.2099\*\*\* | 0.0039 | 0.0468\*\*\* | 0.0017 | -0.0576\*\*\* | 0.2898\*\*\* |
|  | *(0.0075)* | *(0.0132)* | *(0.0059)* | *(0.0407)* | *(0.0081)* | *(0.0146)* | *(0.0087)* | *(0.0152)* | *(0.0461)* |
| no\_child | 0.0868\*\*\* | 0.0364\*\* | 0.0078\* | 0.0727\*\*\* | 0.0212 | 0.0065 | 0.1325\*\*\* | 0.0190\*\* | -0.3829\*\*\* |
|  | *(0.0073)* | *(0.0144)* | *(0.0045)* | *(0.0201)* | *(0.0171)* | *(0.0067)* | *(0.0210)* | *(0.0085)* | *(0.0302)* |
| Region fixed effects |  |  |  |  |  |  |  |  |  |
| NewEngland | 0.0408\*\*\* | -0.0327\*\* | -0.0069 | 0.1649\*\*\* | 0.0991\*\* | 0.0365\*\*\* | -0.0358\*\*\* | 0.0690\*\*\* | -0.3350\*\*\* |
|  | *(0.0077)* | *(0.0134)* | *(0.0109)* | *(0.0384)* | *(0.0402)* | *(0.0131)* | *(0.0097)* | *(0.0180)* | *(0.0516)* |
| MiddleAtlantic | 0.0198\*\*\* | -0.1044\*\*\* | -0.0152 | 0.1636\*\*\* | 0.1058\*\*\* | 0.0667\*\*\* | -0.1493\*\*\* | 0.0760\*\*\* | -0.1630\*\*\* |
|  | *(0.0057)* | *(0.0227)* | *(0.0096)* | *(0.0346)* | *(0.0340)* | *(0.0133)* | *(0.0141)* | *(0.0207)* | *(0.0510)* |
| ENCentral | 0.0898\*\*\* | 0.1818\*\*\* | 0.0027 | 0.1920\*\*\* | 0.0501\* | -0.0231\* | -0.1014\*\*\* | -0.0065 | -0.3854\*\*\* |
|  | *(0.0079)* | *(0.0470)* | *(0.0056)* | *(0.0440)* | *(0.0295)* | *(0.0121)* | *(0.0076)* | *(0.0084)* | *(0.0686)* |
| WNCentral | 0.1280\*\*\* | 0.1692\*\*\* | 0.0066 | 0.0727\*\*\* | -0.0299\*\*\* | -0.1049\*\*\* | 0.0546\*\*\* | -0.0680\*\*\* | -0.2285\*\*\* |
|  | *(0.0102)* | *(0.0436)* | *(0.0059)* | *(0.0232)* | *(0.0086)* | *(0.0346)* | *(0.0137)* | *(0.0133)* | *(0.0573)* |
| SouthAtlantic | 0.0891\*\*\* | 0.1579\*\*\* | 0.0003 | 0.1632\*\*\* | 0.0045 | -0.0438\*\*\* | 0.1201\*\*\* | 0.0383\*\*\* | -0.5297\*\*\* |
|  | *(0.0074)* | *(0.0401)* | *(0.0051)* | *(0.0389)* | *(0.0181)* | *(0.0165)* | *(0.0225)* | *(0.0136)* | *(0.0568)* |
| ESCentral | 0.1759\*\*\* | 0.2741\*\*\* | 0.0041 | 0.0917\*\*\* | -0.0315\*\* | -0.1480\*\*\* | 0.1597\*\*\* | 0.0129 | -0.5389\*\*\* |
|  | *(0.0124)* | *(0.0647)* | *(0.0081)* | *(0.0275)* | *(0.0135)* | *(0.0430)* | *(0.0284)* | *(0.0126)* | *(0.0773)* |
| WSCentral | 0.0736\*\*\* | 0.2802\*\*\* | -0.0039 | -0.0823\*\*\* | -0.0350\*\*\* | -0.1144\*\*\* | 0.0761\*\*\* | 0.0014 | -0.1956\*\*\* |
|  | *(0.0073)* | *(0.0652)* | *(0.0057)* | *(0.0137)* | *(0.0074)* | *(0.0380)* | *(0.0152)* | *(0.0072)* | *(0.0701)* |
| Mountain | -0.0641\*\*\* | 0.1632\*\*\* | -0.0075 | 0.1471\*\*\* | 0.0211 | 0.0099 | -0.0400\*\*\* | -0.0301\*\*\* | -0.1994\*\*\* |
|  | *(0.0068)* | *(0.0440)* | *(0.0052)* | *(0.0321)* | *(0.0159)* | *(0.0087)* | *(0.0076)* | *(0.0083)* | *(0.0560)* |
| Time fixed effects |  |  |  |  |  |  |  |  |  |
| dv2009 | 0.0199\*\*\* | 0.0029 | 0.0495\*\*\* | 0.0257\*\*\* | 0.0033 | -0.0420\*\*\* | -0.0135\*\* | -0.0868\*\*\* | 0.0410\*\*\* |
|  | *(0.0055)* | *(0.0056)* | *(0.0051)* | *(0.0074)* | *(0.0058)* | *(0.0083)* | *(0.0066)* | *(0.0049)* | *(0.0052)* |
| dv2010 | 0.0221\*\*\* | 0.0023 | 0.0457\*\*\* | 0.0224\*\*\* | -0.0082 | -0.0201\*\*\* | -0.0137\*\* | -0.0911\*\*\* | 0.0406\*\*\* |
|  | *(0.0050)* | *(0.0050)* | *(0.0047)* | *(0.0064)* | *(0.0054)* | *(0.0072)* | *(0.0060)* | *(0.0045)* | *(0.0047)* |
| dv2011 | 0.0223\*\*\* | 0.0124\*\* | 0.0454\*\*\* | -0.0149\*\* | -0.0175\*\*\* | 0.0468\*\*\* | -0.0206\*\*\* | -0.1049\*\*\* | 0.0311\*\*\* |
|  | *(0.0050)* | *(0.0051)* | *(0.0047)* | *(0.0065)* | *(0.0053)* | *(0.0070)* | *(0.0062)* | *(0.0046)* | *(0.0046)* |
| dv2012 | 0.0286\*\*\* | 0.0125\*\* | 0.0324\*\*\* | -0.0277\*\*\* | -0.0202\*\*\* | 0.0751\*\*\* | -0.0220\*\*\* | -0.1069\*\*\* | 0.0281\*\*\* |
|  | *(0.0052)* | *(0.0053)* | *(0.0050)* | *(0.0068)* | *(0.0056)* | *(0.0072)* | *(0.0064)* | *(0.0047)* | *(0.0047)* |
| dv2013 | 0.0244\*\*\* | 0.0123\*\*\* | 0.0311\*\*\* | -0.0097 | -0.0247\*\*\* | 0.0564\*\*\* | -0.0166\*\*\* | -0.0998\*\*\* | 0.0265\*\*\* |
|  | *(0.0047)* | *(0.0046)* | *(0.0046)* | *(0.0061)* | *(0.0050)* | *(0.0066)* | *(0.0058)* | *(0.0044)* | *(0.0044)* |
| dv2014 | 0.0111\*\*\* | 0.0053 | 0.0115\*\*\* | -0.0058 | -0.0144\*\*\* | 0.0175\*\*\* | -0.0065 | -0.0341\*\*\* | 0.0154\*\*\* |
|  | *(0.0044)* | *(0.0046)* | *(0.0044)* | *(0.0060)* | *(0.0049)* | *(0.0064)* | *(0.0056)* | *(0.0040)* | *(0.0042)* |
| R2 | 0.0068 | 0.0173 | 0.0163 | 0.0043 | 0.0159 | 0.0143 | 0.0073 | 0.0335 | 0.0004 |

*Notes:* Values in parentheses are the standard errors. Single, double, and triple asterisks (\*, \*\*, \*\*\*) indicate statistical significance at the 10%, 5%, and 1% level, respectively. Researcher(s)' own analyses calculated (or derived) based in part on data from Nielsen Consumer LLC and marketing databases provided through the NielsenIQ Datasets at the Kilts Center for Marketing Data Center at The University of Chicago Booth School of Business.