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ASSESSING THE EFFECTIVENESS OF GENERIC ADVERTISING FOR 100% ORANGE JUICE

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INTRODUCTION

•The role of generic advertising in consumer response is investigated using a rich individual-level dataset on consumption of 100% orange juice and other beverages. The data is survey-based and is designed to measure recall and responsiveness to advertising programs by the Florida Department of Citrus (FDOC). The survey also collects information on various demographic and household indicators. Although previous research has examined the influence of generic advertising on the demand for orange juice, previous work has been based on aggregate data while this study utilizes individual-level survey data.

OBJECTIVES

The purpose of this study is to investigate the effectiveness of generic advertising on consumption of 100% orange juice using an econometric model that controls for different socio-demographic variables. The FDOC recently announced a target shift to include a younger consumer base (ages 18 to 40). Thus, the study also aims to assess whether generic advertising effectiveness is mediated by consumer age group. Specifically the objectives of this study are:

- To determine if purchase frequency of 100% orange juice is positively influenced by generic advertising efforts.
- To assess if consumer age mediates the impact of ad awareness on purchase frequency of 100% orange juice.
- To investigate the association of different socio-economic indicators on purchase frequency of 100% orange juice.

BACKGROUND

•A number of previous studies have examined FDOC generic advertising efforts on both consumption and purchase of orange juice. Early studies include Ward and Davis (1978), Ward and Tilley (1980), and Lee and Brown (1985). These earlier studies tend to utilize aggregate annual or monthly time-series data on total FDOC advertising expenditure matched with orange juice retail volumes or consumer expenditure. More recent studies include Brown and Lee (1997, 1999) and Thomas and Cantor (2009). These more recent studies typically use Nielsen point-of-sale scanner data, aggregated at the market-level, and use purchase volume as a proxy for consumption. In general these studies find that the level of advertising expenditure has a direct impact on orange juice sales.

•A key difference here between previous studies is the use of individual-level survey data over aggregate level data with respect to both the purchase and the advertising variables. First, actual purchase volume is not measured here but rather individual stated purchase frequency. Second, actual advertising effort is not measured (e.g., expenditure level), but individual stated advertising awareness and recall. Very few studies on generic advertising utilize micro-level survey data (Thompson & Eiler 1975; Kinnucan & Venkateswaran 1990).

DATA

- Data is sourced from the Florida Department of Citrus monthly advertising tracking study. The study is survey-based and is designed to measure recall and responsiveness to FDOC advertising programs. In addition, the survey measures attitudes, consumption frequency, and purchase frequency of 100% orange juice as well as other beverages. The survey also collects information on various socio-demographic and household indicators. Since February 2012, the survey has been administered and managed by an independent global marketing research firm, Issues & Answers Network, Inc. The primary variables utilized in this study include stated purchase frequency, and awareness of FDOC generic advertising. A matrix of demographic variables includes indicators for gender, marital status, household size, primary shopper, race, education, age, and income.
- Regarding purchase frequency, respondents are asked how often they purchase 100% orange juice. Values range from 1 to 7 where 1 = every day, 2 = more than once a week, 3 = once a week, 4 = once every two weeks, 5 = once a month, 6 = once a year, and 7 = don't know. These responses are redefined to formulate the key dependent variable of purchase frequency (OJPUR). Specifically, OJPUR takes on the value of: 1 = infrequently (once a year and/or once a month), 2 = occasionally (once every two weeks and/or once a week), and 3 = frequently (every day and/or more than once a week). Respondents indicating "don't know" are omitted. The variable GENAD is a dichotomous indicators that takes a value of 1 if the respondent recalls seeing the generic ad and 0 otherwise.

RESULTS

Figure 1. Average Purchase Frequency and Ad Awareness by Age Group

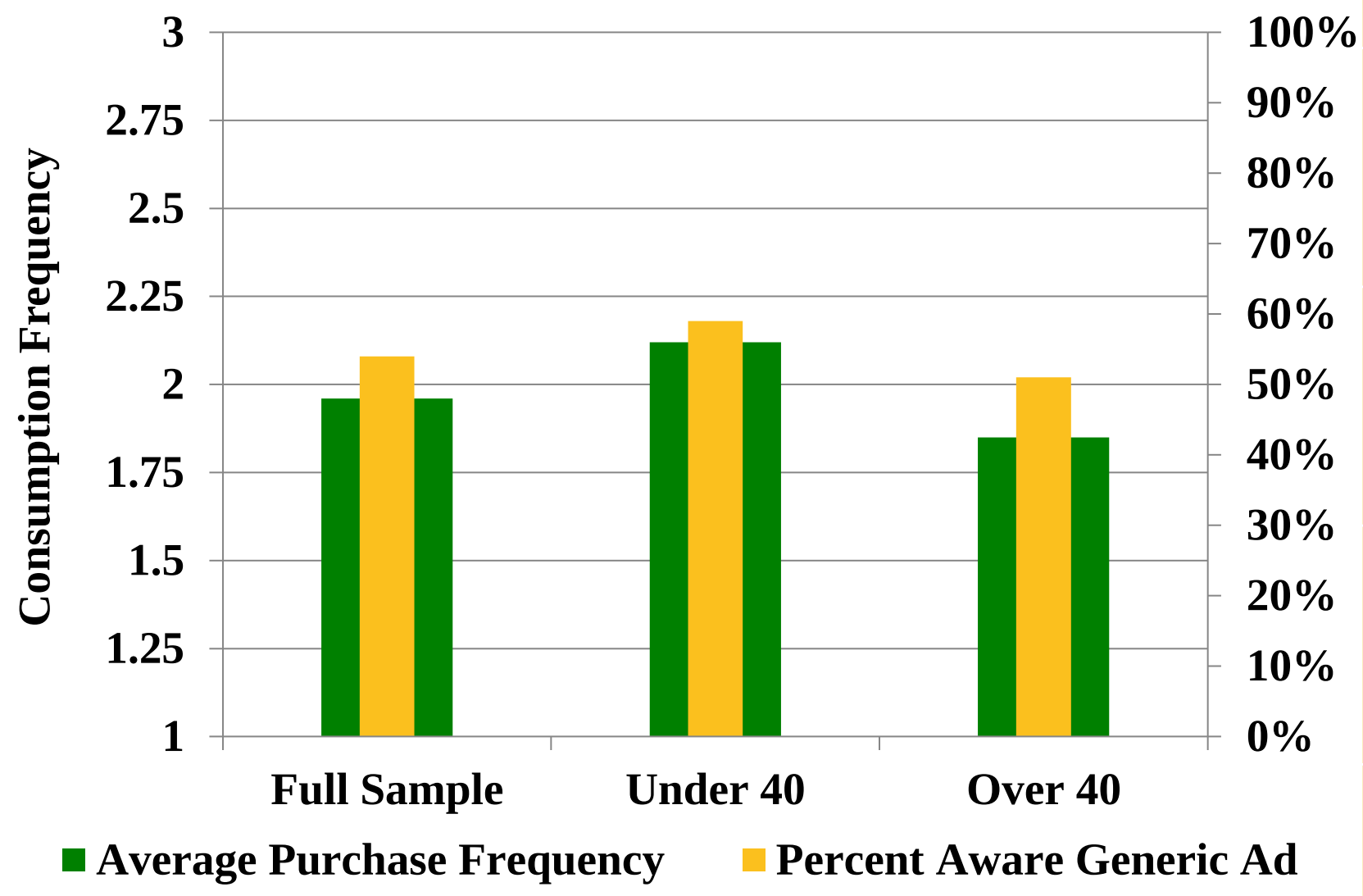


Figure 2. Average Purchase Frequency by Ad Awareness

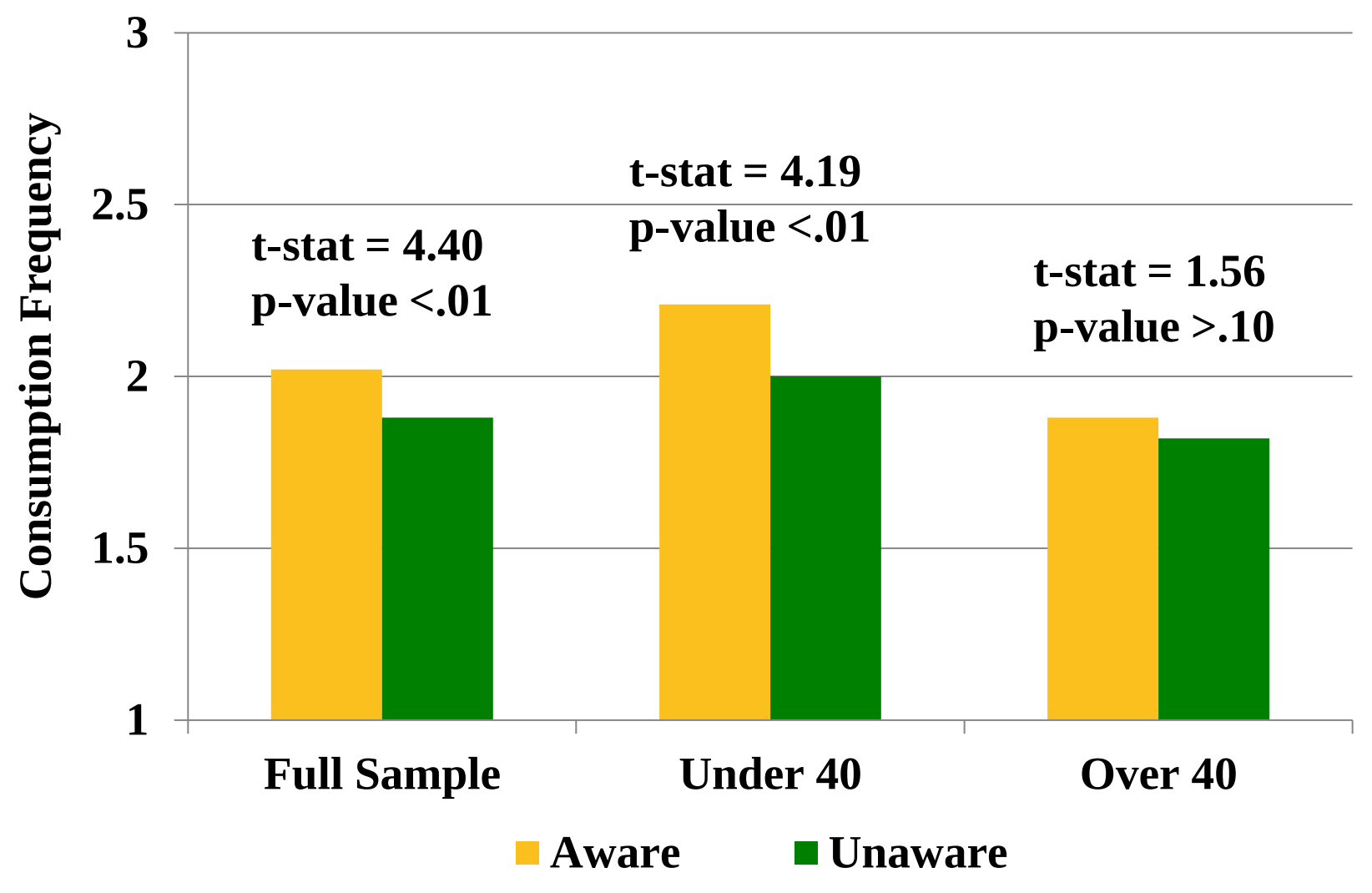


Figure 3. Purchase Frequency by Ad Awareness -- Full Sample

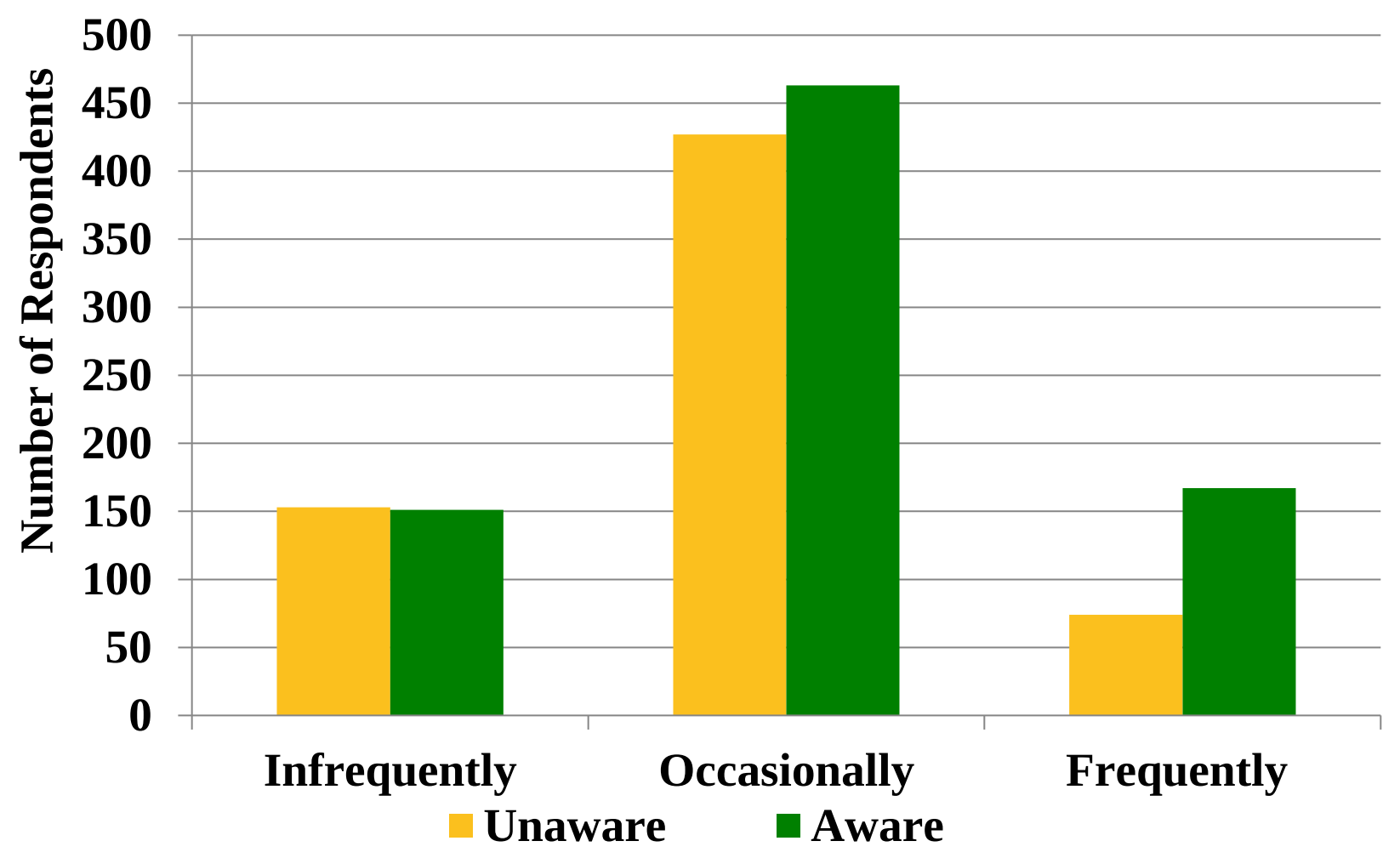


Table 1. Ordered Logistic Regression Estimates (standard errors in parentheses)

Variable	Full Sample	Under 40	Over 40
Ad awareness	0.370* (0.110)	0.709* (0.179)	0.211 (0.142)
Male	0.239* (0.115)	0.267 (0.178)	0.180 (0.156)
Married	0.504* (0.132)	0.576* (0.189)	0.280 (0.184)
Household size	-0.045 (0.049)	-0.066 (0.073)	0.105* (0.062)
White	-0.654* (0.152)	-0.845* (0.200)	-0.483* (0.238)
Primary shopper	0.496* (0.133)	0.889* (0.231)	0.360 (0.170)
Age 18-19	1.279* (0.190)	---	---
Age 30-39	1.225* (0.181)	---	---
Age 40-49	0.700* (0.181)	---	---
Age 50-59	0.279 (0.174)	---	---
Income \$25k – \$34k	0.025 (0.211)	-0.220 (0.312)	0.137 (0.293)
Income \$35k – \$49k	-0.160 (0.185)	-0.639* (0.279)	0.230 (0.253)
Income \$50k – \$74k	-0.162 (0.158)	-0.211 (0.261)	-0.177 (0.201)
Income \$75k – \$99k	-0.322* (0.168)	-0.587* (0.279)	-0.218 (0.214)
College	-0.037 (0.128)	-0.246 (0.214)	0.149 (0.163)
Graduate school	-0.184 (0.171)	-0.452 (0.289)	-0.032 (0.218)
Residual Deviance	2434	959	1462
AIC	2470	987	1490
Observations	1400	541	859

Figure 4. Purchase Frequency by Ad Awareness -- Under 40

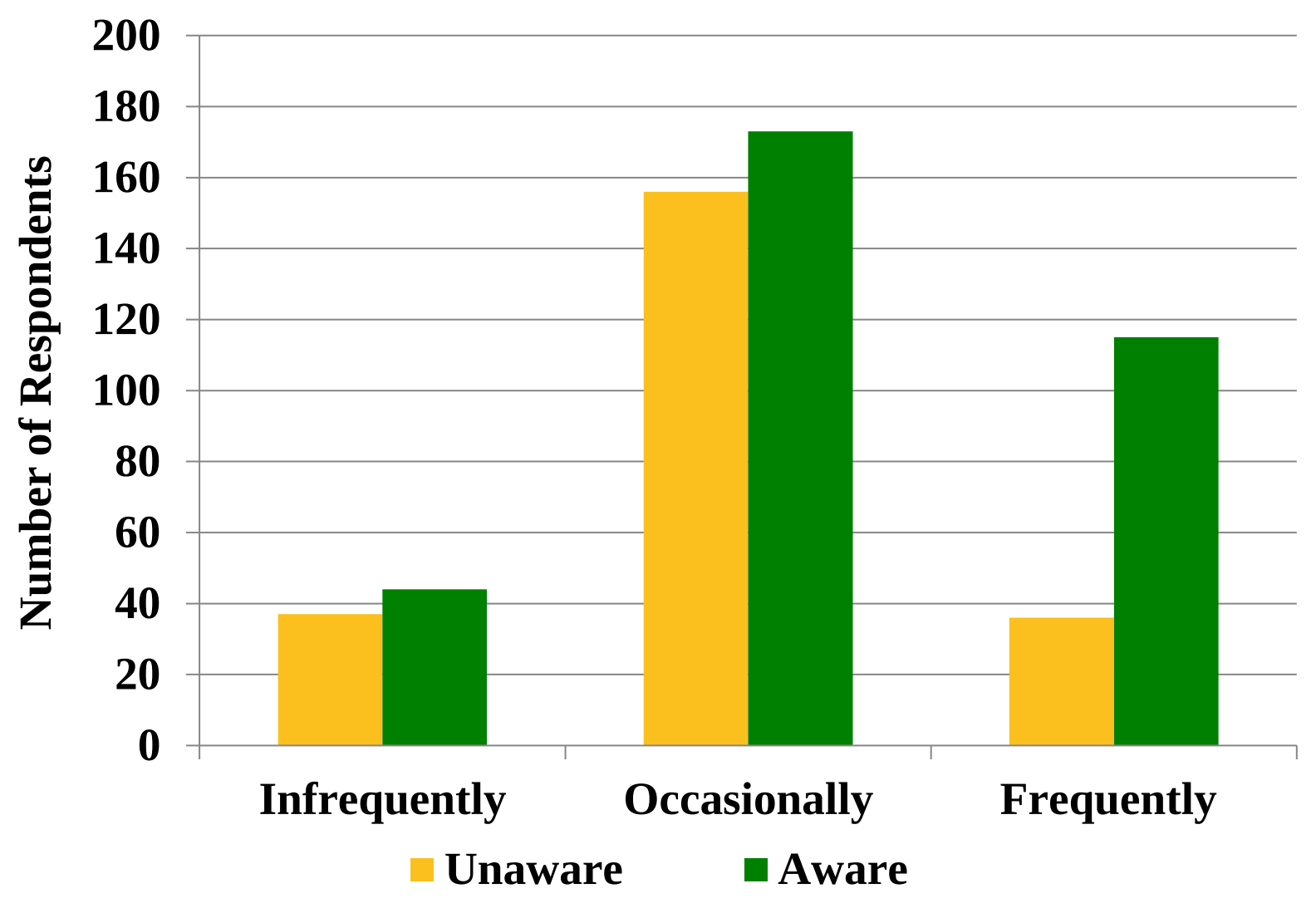


Figure 5. Purchase Frequency by Ad Awareness -- Over 40

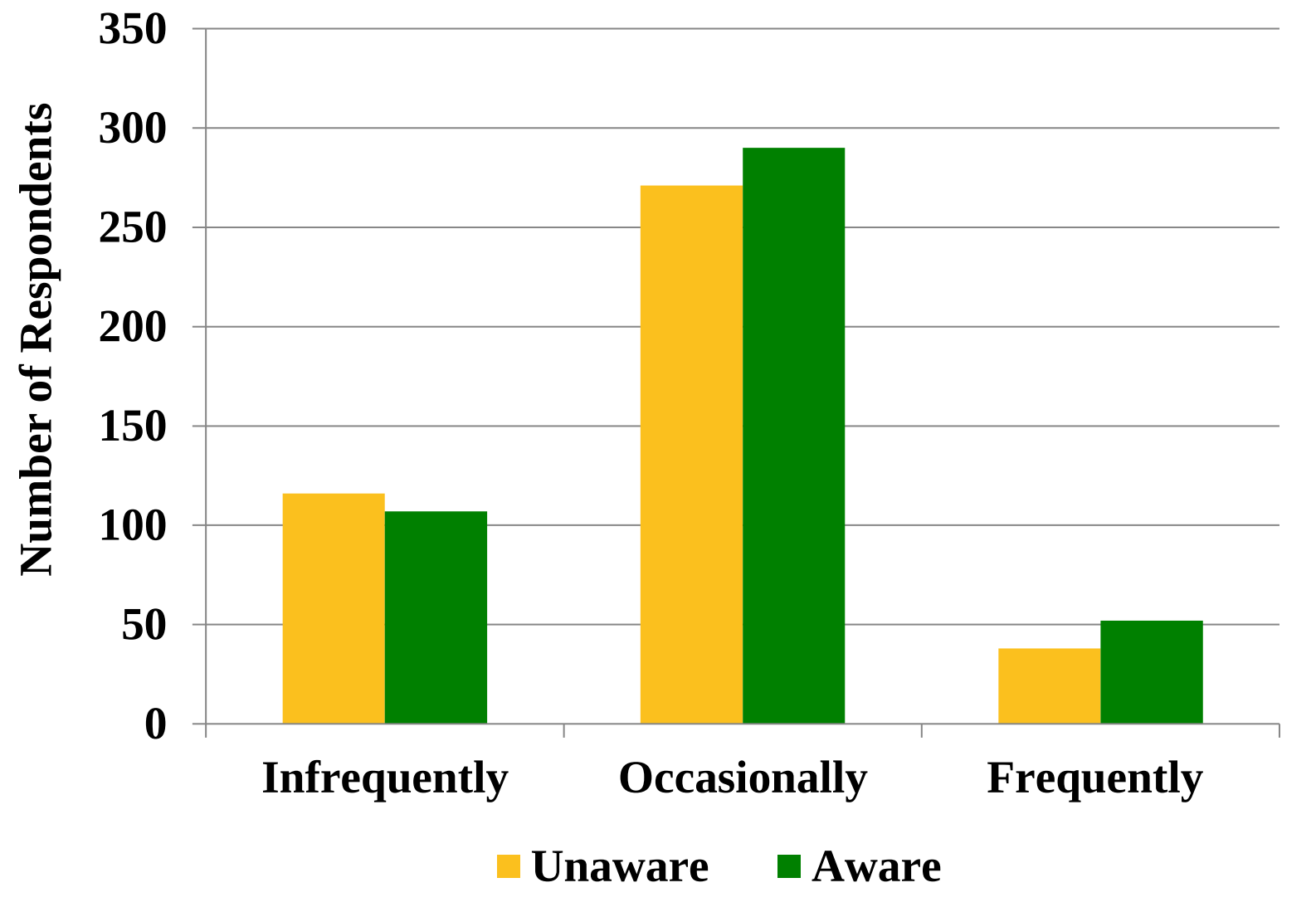
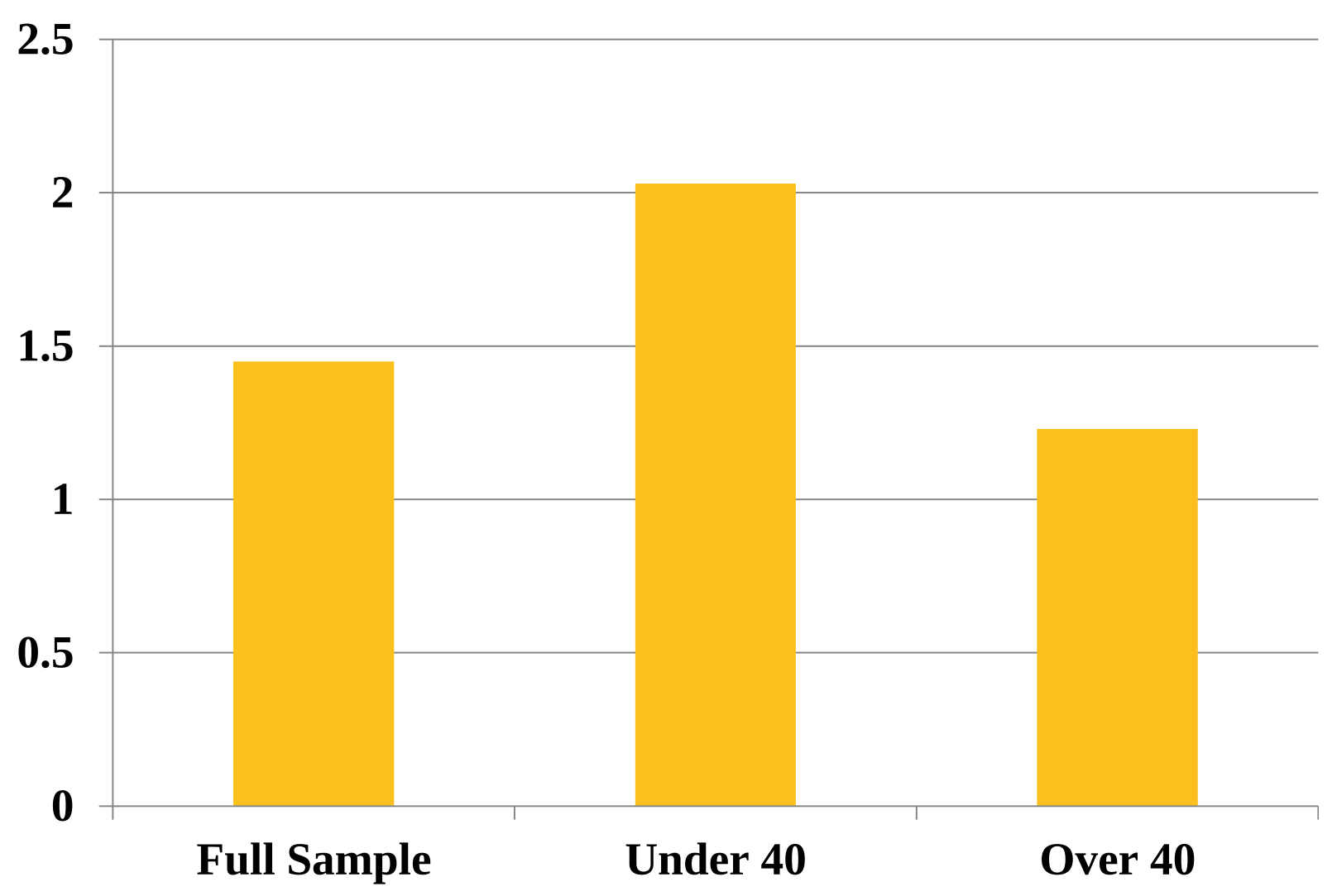


Figure 6. Odds Ratios for Ad Awareness Impact on Purchase Frequency



FINDINGS

- Figure 1 shows average purchase frequency and ad awareness for the full sample and by age group (under 40 and over 40). Consumers under 40 purchase more frequently than consumers over 40. Younger consumers are also more aware of the generic ad.
- Figure 2 shows average purchase frequency by ad awareness. Across all samples those aware of the ad purchase more frequently than those unaware of the ad. The average purchase frequency between ad awareness and unawareness is statistically significant for the full and the under 40 sample.
- Figure 3, Figure 4, and Figure 5 show purchase frequency for the full sample, under 40, and over 40 samples, respectively, by ad awareness. Ad awareness seems to improve both occasional and frequent purchase for the full sample and the under 40 sample but seems to have less of an impact on the over 40 sample.
- An ordered logistic estimator is used to estimate the coefficients and to obtain computed odds ratios, results are summarized in Table 1. Column 1 reports results on the full sample, column 2 for the under 40 sample, and column 3 for the over 40 sample. The estimate on ad awareness is positive and significant in both the full sample and the under 40 sample. In particular it is larger in the under 40 sample, suggesting younger consumers are more responsive to the FDOC generic ad.
- Odds ratios are computed for the ad awareness coefficient estimates and are reported in Figure 6. The odds ratio for the full sample is 1.45 and suggests that for a one-unit increase in ad awareness (i.e., going from 0 to 1), the odds of moving up in a given frequency category (e.g., from occasionally to frequently) are 1.45 times greater, given that all of the other variables in the model are held constant. The odds ratio is even larger in the under 40 sample and is 2.03 suggesting that ad awareness has an even greater impact on younger consumers. The odds ratio is 1.23 in the over 40 sample, but is not statistically significant.
- Findings are relevant to agricultural marketing policy and FAMPS members. A significant and positive relationship between purchase and advertising awareness is obtained. Hence, increasing product demand is dependent upon levels of generic advertising, which emphasizes the role of commodity marketing orders. Moreover, this study finds that generic ad awareness has a greater effect on purchase frequency in consumers under 40 years of age. This result supports the recent decision by the FDOC to broaden its target market to include younger consumers. Lastly, the study introduces a rich individual-level dataset that may be of interest to others in future research on the role of generic advertising.

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