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Involvement and Variety Seeking among Craft Beer Drinkers Predicts Willingness to Pay for Higher ABV (% alcohol)

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Abstract

Past research has looked at involvement and variety seeking among craft beer drinkers, however, little research has looked at how these factors predict consumer behaviors, such as choice for low and high alcohol content (ABV) in their craft beer. Participants were 322 workers recruited through Amazon Mechanical Turk who completed survey scales on their involvement and variety seeking for craft beer. Participants also rated their willingness to pay for low (6%) and high (10%) ABV versions of their preferred type of craft beer. The results supported the hypothesis that participants would be willing to pay more for high ABV beer. An analysis of multiple regression also showed that the interaction between involvement and variety seeking was a significant predictor of the difference between participants' willingness to pay for 6% and 10% craft beer. These data show that among those with average or above average variety seeking for craft beer, higher interest in craft beer predicts a higher willingness to pay for higher ABV, however, the same prediction does not hold for those with low variety seeking for craft beer.

Introduction

Industry - craft beer brewing

From 2007 to 2018 the number of craft breweries increased from 1602 to 5964, and the barrels produced increased from 29.7 million to 51.5 million. In 2018, it was a \$6.8 billion industry, which accounted for 13.2% of the overall beer industry. In 2017 craft beer contributed \$76.2 billion to the US economy, 500,000 jobs were created (135,000 directly at breweries and brewpubs).

Demographics - craft beer drinkers in 2018

- 40% of the population ages 21 years and older consume craft beer several times a year. The number of new craft beer drinkers increase about 2% annually (about 4-5 million people)
- Racial affiliation: White (non-Hispanic) = 85.5%
- Age: Millennials 57%, Gen X 24%, Boomers 17%, Matures 2%
- Income: 75% earned more than \$50,000/year
- Education: 43% college educated
- Biological Sex: Male (68.5%) Females(31.5%)

Consumer Behavior - craft beer drinkers

- **Variety Seeking (VS):** Indicates the preference that craft beer drinkers have for trying new beers, different brands, other craft beer styles, and have new experiences relating to craft beer, which they are not only willing to have but they enjoy and seek out.
- **Involvement (INV):** Indicates engagement with craft beer based on their individual preferences and taste. It captures how relevant craft beer is for people and the extent to which they seek information about it.
- **Willingness to Pay (WTP):** Is a measure of individual preference based on the product characteristics, and the benefit that the consumer would get from purchasing it.

Past Research - beer and wine drinkers

Past research on dining out at restaurants and craft beer consumption have used involvement and variety seeking to segment people into different groups, which provides additional predictive information about purchasing behavior beyond socio-economic and demographic variables. (Beldona et al, 2010; Taylor & DiPietro, 2017). See Table 1

Hypotheses

1. People are willing to pay more for craft beers with high (10%) compared to low (6%) ABV
2. However, compared to people who are both low INV and low VS for craft beer, people who are both high INV and high VS for craft beer will show a greater willingness to pay for high ABV beer

Methodology

Participants. Responses from 504 participants were collected; responses from 322 (197 male and 125 female) participants were used for this analysis

- Participants were recruited through Amazon Mechanical Turk (MTurk) and compensated \$1.07
- **Age** ($M = 34.4$, $SD = 9.3$): 21-30 years old: 136 (43.7%), 31-40 years old: 112 (36.0%), 41+ years old: 63 (20.2%)
- **Racial affiliation:** African American (7.8%), Asian (8.1%), Hispanic (6.2%), Native American (3.4%), Multi-racial (2.8%), and Caucasian (71.7%).
- **Highest Education Level:** High school diploma (7.8%), some college (29.3%), undergraduate degree (46.4%), and graduate or professional degree (16.5%).
- **Income:** $M = \$49432$ $SD = \$42528$

Procedure. After informed consent was obtained, participants provided demographic information and completed scales on personality (TIPI; Gosling et al. 2003), numeracy (Weller et al. 2013), involvement (Taylor & DiPietro, 2017), variety seeking (Taylor & DiPietro, 2017), and motivation (Taylor & DiPietro, 2017). Participants then rated their preference for different types of beer (Lager, Stout, IPA, Porter, Pilsner, and Pale Ale) and stated their willingness to pay for their most preferred beer when it has a high (10%) or low (6%) ABV (question order was counterbalanced).

Data analysis: Of the 504 responses collected, 182 responses didn't meet inclusion criteria, leaving 322 responses for the analyses.

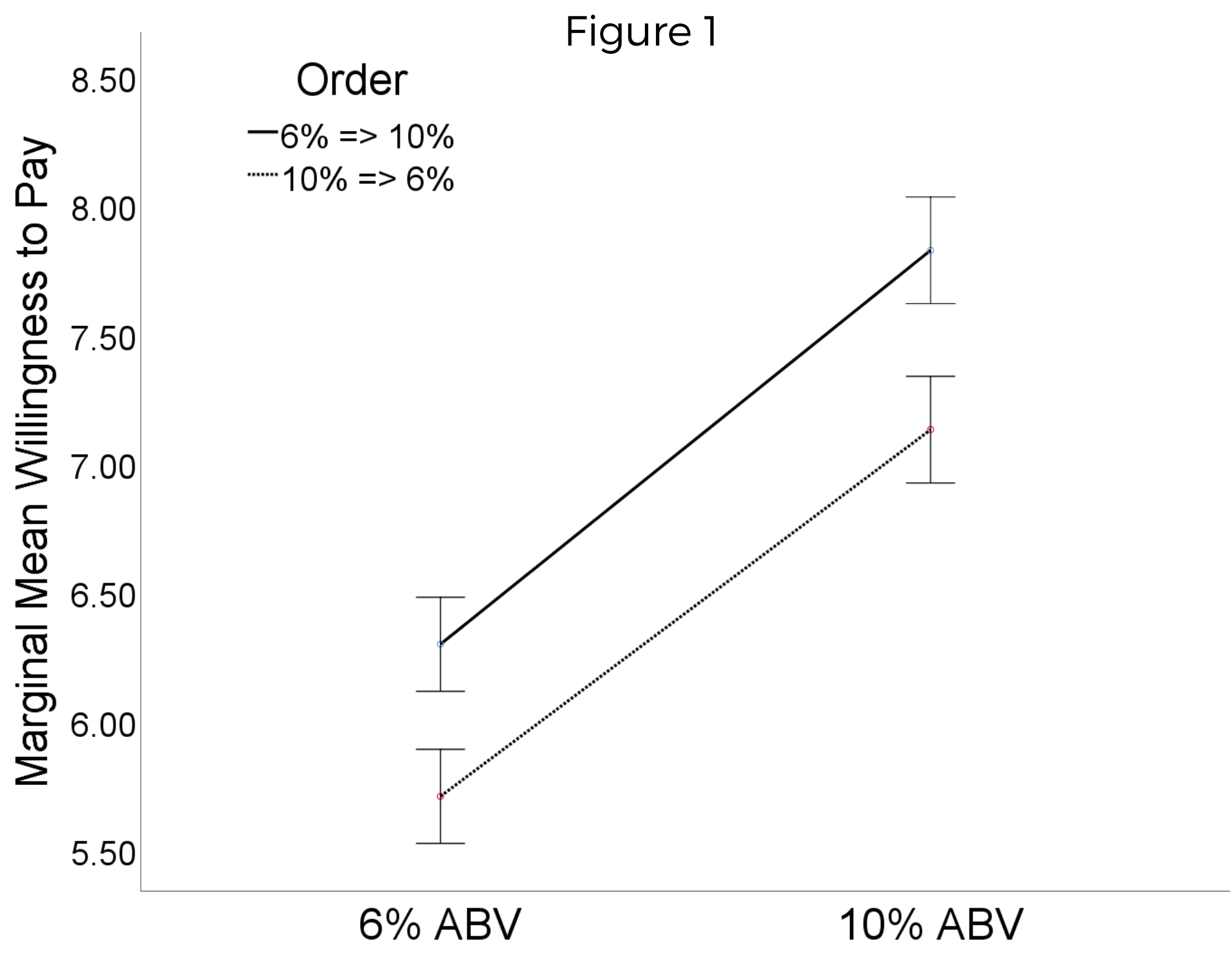


Figure 1. Mean willingness to pay for a preferred craft beer across high and low ABV and condition order.

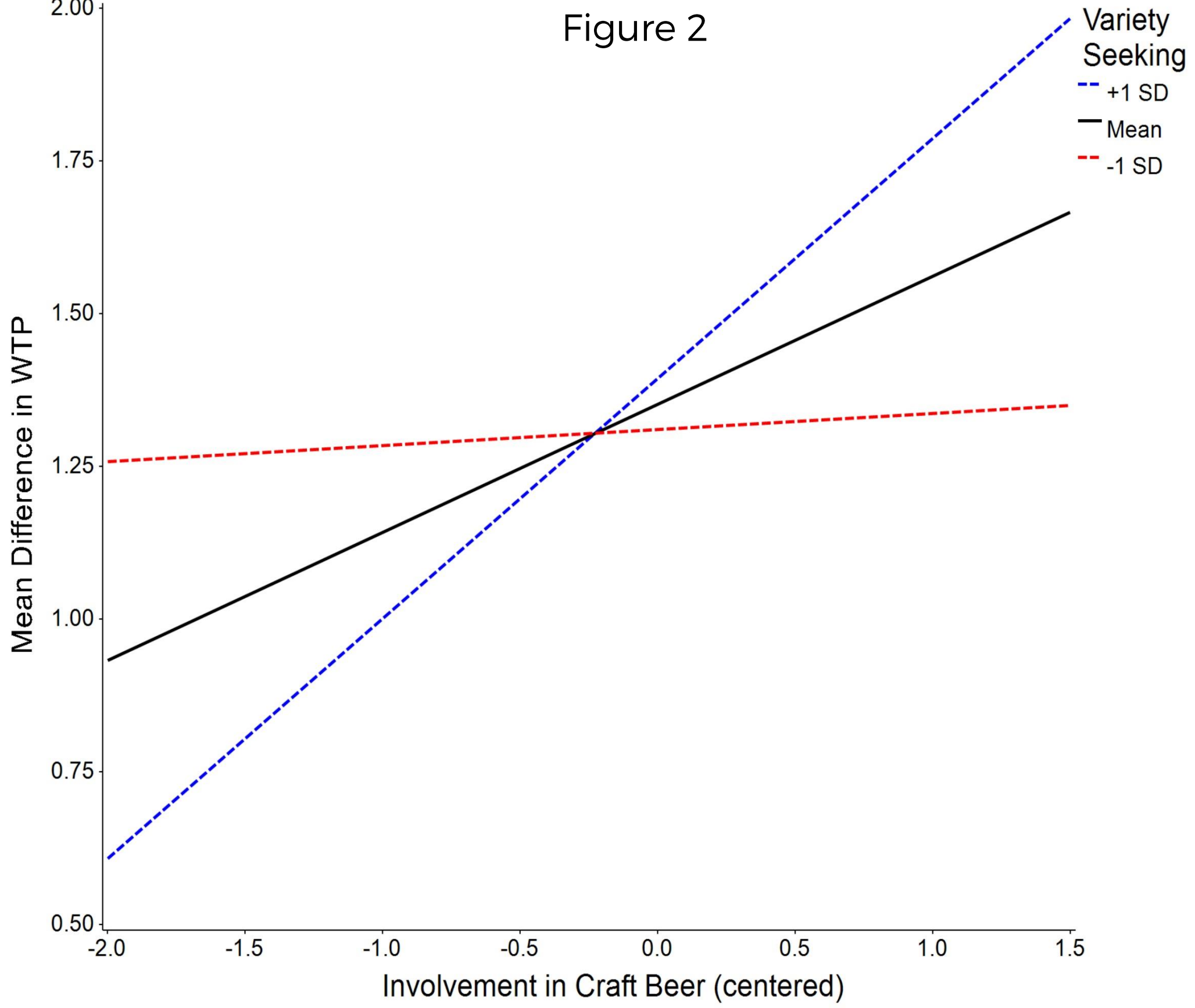


Figure 1. The relationship between Involvement and dWTP across the Low (below -0.5 SD; scores from 1.38 to 5.0), Average, and High (above +.5 SD; scores from 6.13 to 7.0) Variety Seeking groups.

Results

Analysis of Variance: ABV by Order on WTP

- A mixed-model analysis of variance (ANOVA) on WTP across ABV (6% and 10%) and Question Order showed a significant main effect of ABV ($F(1,320) = 332.971$, $p = <.001$, $\eta^2 = .510$) and Order ($F(1,320) = 5.948$, $p = .015$).
- The ABV by Order interaction was not significant, therefore the data was collapsed across Order and the difference between participants' WTP was used as the primary criterion variable in the following regression analysis.
 - **Difference in Willingness to Pay (dWTP)** captures the difference in preference for 6% and 10% beer; positive values indicate greater preference for higher ABV beer

Regression analysis: Involvement and Variety Seeking

- Age, Involvement, and Variety Seeking (first block) were entered into a hierarchical multiple regression analysis on dWTP with a centered Involvement by Variety Seeking interaction variable (second block). The addition of the Involvement by Variety Seeking interaction significantly increased R^2 , from .035 to .065, $F(1,306) = 9.741$, $p = .002$.
- Age ($\beta = -.129$, $p = .023$), Involvement ($\beta = .192$, $p = .011$), and Involvement by Variety Seeking ($\beta = .188$, $p = .002$) were significant predictors of dWTP
- To evaluate the Involvement by Variety Seeking interaction on dWTP, the relationship between Involvement and dWTP was plotted across Low ($n = 86$), Average ($n = 119$), and High ($n = 106$) VS participants (see Figure 2).
- Among the Average and High VS groups, higher involvement predicted a higher dWTP, with the High VS group having a larger slope, $b = 0.39$, $p < 0.001$, than the Average VS group, $b = 0.21$, $p = 0.03$. Involvement was not predictive of dWTP among the Low VS group.

Table 1	Low Variety Seeking	High Variety Seeking
High Involvement	Traditionalist	Enthusiast
Low Involvement	Nonchalant	Dabblers

Discussion

- The results supported the hypothesis that participants would be willing to pay more for high, compared to low ABV. The results also supported the hypothesis that higher involvement predicts people's' willingness to pay for beers with different ABVs, however variety seeking alone did not. The greatest proportion of variability in willingness to pay for beers with different ABVs was explained by the interaction between involvement and variety seeking.
- As past research has shown (Beldona et al, 2010) (Taylor & DiPietro, 2017), involvement and variety seeking were predictive of participants' preferences. Finding that individuals with high involvement and high variety seeking (Enthusiasts) were the most willing to pay more for high ABV beer, craft breweries can more precisely identify the segment of their customers who are likely to respond positively to higher ABV versions of their beers.

Acknowledgements

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