1. **Method**

This research is conducted in order to find difference in strength of the below average effect for private label products compared to premium label products and whether the below average effect affects the willingness to pay (WTP). The variables were measured by conducting a Prolific survey among 200 respondents in the United Kingdom. Respondents were all fluent in English and took part voluntarily and anonymously.

* 1. **Explanation**

Survey respondents in the research were asked how often they think they buy premium label soft drinks compared to other consumers and how often private label compared to others. The two versions of the survey (premium label vs. private label) were randomly assigned among the respondents. A relative rank was created for both types of products, using a scale that varied from 0 (“I am at the very bottom”) to 50 (“I am exactly average”) and 100 (“I am at the very top”). It is expected that the below average effect is stronger for private label products than for premium label products.

A different dependent measure was added by measuring whether this perceptive relative rank affects the WTP. The respondent was asked how much s/he is willing to pay for a 2 litre (0.5 gallon) bottle of either a private label soda or a premium label soda, after which the respondent had to fill in an amount in pound sterling (£). Additionally, the respondent was asked what s/he think the average consumer is willing to pay for the same product (2 litre/0.5 gallon). Again the respondent had to fill in an amount in £. The outcome for the WTP of the respondent was then subtracted from the perceived average WTP to create a value representing the difference between the respondents’ WTP and their own perception of the average WTP. If this value is >0, the respondent expects the average WTP to be higher than their own. If <0, the respondent expects their own WTP to be higher than the average. It is expected that the more people tend to see themselves below average, the larger the difference should be between what they think their WTP is compared to the average person. To get rid of outliers, all WTP difference values higher than 1 and lower than -1 were removed from the dataset during the analysis, decreasing the amount of respondents from 200 to 193.

* 1. **Conceptual model**

WTP difference

Relative purchase rank

Private label product

(vs. premium label product)

**H1 H2**

* 1. **Hypotheses**

Based on the theory and the expectations described in the previous sections, the following hypotheses can be formulated:

H1: The below average effect is stronger for private label products than for premium label products.

H2: The stronger the below average effect, the larger the difference between a person’s willingness to pay and the perceived average willingness to pay.

1. **Results**

The survey was conducted on May 9th 2022. The data generated from the research was then prepared and analysed using RStudio. As mentioned before, the analysis was done using 193 respondents.

* 1. **Descriptive**

Descriptive statistics show a difference in average age of respondents for both product types (private label = 60, premium = 38). The mean given value for the relative purchase rank was 29.1 for private label respondents and 37 for premium label respondents, meaning that for both product types, there seems to be a below average effect. This is also a first indication that the below average effect is indeed stronger for private label products.

The difference between the respondents’ own WTP and the perceived average WTP shows a positive number when subtracting the own WTP from the perceived average (private = 0.157, premium = 0.225), meaning that for both private label and premium label versions of the survey, the respondents estimated their own WTP to be lower than the WTP of the average person.

* 1. **Linear regression**

H1

H1 was tested by computing a simple linear regression model taking the relative purchase rank as output variable and the product type as a categorial variable taking the value of 1 (private) or 0 (premium). The model shows us that when the independent variable takes the value of 1, the relative purchase rank decreases with 7.979, indicating that the below average effect is indeed stronger for private label products. However, the current model shows no significant effect (p-value = 0.0627). When adding age as a covariate, the model shows that when age increases with one unit, the relative purchase rank decreases with 0.017, indicating that the below average effect becomes stronger with age. Again, the variables within the model are not significant. Therefore, it is concluded that H1 should be rejected with the current data.

H2

H2 was tested by creating a simple linear regression model including the relative purchase rank as an independent variable and the difference between a person’s WTP and the perceived average as an output. The intercept is set at 0.258 with a -0.002 coefficient for the relative purchase rank. This indicates that with every point that people rank themselves higher on the relative ranking (0-100), the difference between their own WTP and the average decrease with 0.2 cents in pound sterling. This shows that the stronger the below average effect (the further the relative ranking is below 50 on the 0-100 scale), the larger the WTP difference. When the data is used to compute the linear regression model, it turns out that relative purchase rank has a significant effect on the WTP difference (p-value = 0.0332), indicating that H2 is true.

When computing a multiple linear regression model taking into account the entire conceptual model, it also turns out that the relative ranking scale is significant within the total model. There is however no significant difference for private and premium products and adding age as a covariate does not show a significant difference for age of the respondent.

* 1. **Assumptions**

When testing the assumptions for linear regression, it turned out that the Y-variable (WTP difference) is not normally distributed with the current data. The Shapiro-Wilk normality test shows a p-value far below 0.05 and therefore the assumption of normality in the data is not met. The assumption of independence is met due to the random assignment among respondents. Other assumptions were tested using visual inspection of the data. This shows that the data is somewhat linear when plotting the observations. Homoscedasticity was checked plotting residuals vs fitted values, showing that the residuals are somewhat similarly spread over the x-axis.

Since, the assumptions for linear regression are not completely met, the current output has a chance of being incorrect. It is therefore recommended to expand the sample size for the experiment.