

# HOW DRINKING VESSELS INFLUENCE CUSTOMER TASTE PERCEPTIONS

First impressions count and it takes just a fraction of a second for us to decide whether we like someone when we meet them for the first time. With a collaborator, Rosen College of Hospitality Management's Dr. Marissa Orlowski is looking at how similar perceptions can be made about products and what implications this has for the food and beverage sector. They have discovered that the kind of vessel in which drinks are served affects both people's taste perceptions and their willingness to pay.



Consumers have lower expectations of taste when drinks are served in flimsy cups.



Customers rate the taste of drinks served in a glass bottle highly and so are prepared to pay more for them.



The vessels in which drinks are served can lead to different sensory perceptions.

Based on their reaction to the images alone, participants were asked about their expectations of the drinks' taste, deliciousness and flavor, rating each measure on a seven-point scale. They were also asked how much they would be willing to pay for each drink.

Standard statistical methods were used to analyze the results. The study's findings supported all three hypotheses. Though there was no significant difference between expectations of the taste of the drinks in the glass, plastic cup and bottle, these rated higher than expectations of the taste of the drink in the can.

Dr Orlowski explained: "Results showed that beverages served in aluminum cans are expected to taste worse than the other service vessel options and consequently consumers are willing to pay less for these beverages. Furthermore, the findings support taste as the underlying mechanism for the impact of the service vessel on willingness to pay."

The second study tested the same hypotheses, using the same vessels, but this time in a live setting in which people tasted the drinks before making their assessments. To avoid potential familiarity with the drinks used, lightly flavored sparkling water was chosen rather than cola, and to avoid participants being influenced by the vessels' touch and texture, they were asked to drink through a straw.

The experiment took place in a university lab in the United States and involved 82 people, 23 men and 59 women. With an average age of 23, 52% said they dined out weekly, with a typical spend of just over \$16.

The same questions were asked as before about the drinks' taste, deliciousness and flavor, with participants again rating each

There was a time when coffee drinkers only had to decide whether to have it with or without milk – it was literally a black or white choice. Now you can choose between an espresso, latte, cappuccino, macchiato and flat white. Then there's the milk – skimmed, semi-skimmed or whole, or maybe soya, almond, rice, goat's and even coconut. That's before you think about whether you want it in a cardboard cup, glass or ceramic mug – and would you like that to go?

So how do consumers decide what to buy when they are faced with such a choice?

## DECISIONS, DECISIONS

It's generally agreed that consumers make purchasing decisions according to their perceptions of quality, price and value. The way products are packaged, or, in food and beverage terms, the way they are presented, helps to create these perceptions.

Now researchers have added to the academic literature by publishing a study on the influence

that different drinking vessels – cans, glasses, plastic cups and bottles – have on consumers' perceptions of taste and willingness to pay. Published in the *International Journal of Hospitality Management*, the research was conducted by Rosen College's Dr. Marissa Orlowski and her collaborator.

Dr. Orlowski said: "The central question underlying this research is to what extent visual perceptions of beverage presentation can influence taste perceptions and behaviors. More specifically, to what extent do variations in beverage presentation impact subsequent taste impressions and willingness to pay for that beverage?"

## CONSUMER PERCEPTIONS

The study includes findings from previous studies, including the basic premise that the vessel a drink is served in can affect people's sensory perceptions such as taste, which is one of the main attributes influencing consumption.

The details are interesting. For example, consumers have lower expectations of taste when drinks are served in flimsy cups because people generally equate weight with higher quality. It has also been shown that consumers' notions of sweetness are dependent on the material from which the drinking vessel is made, as well as its texture.

**RESULTS SHOWED THAT BEVERAGES SERVED IN ALUMINIUM CANS ARE EXPECTED TO TASTE WORSE THAN THE OTHER SERVICE VESSEL OPTIONS AND CONSEQUENTLY CONSUMERS ARE WILLING TO PAY LESS FOR THESE BEVERAGES.**

Then there is the impact of shape on consumer perceptions. Tests have suggested that drinks served in rounded vessels taste sweeter and/or fruitier than those served in a straight-sided glass. For coffee, short mugs are associated with bitterness, narrow mugs with stronger aromas, and wide mugs with sweetness. As for wine, people have discussed for hundreds of years what shape of glass should be used for different wines and the jury is still out.

Much less is known about drinking vessels for more humble beverages. This is surprising, not least because of the many ways in which soft drinks can be served.

Take the example of global brands like Coca-Cola and Pepsi. If you're dining in, the drink can be dispensed by a soda fountain into a glass or plastic cup, or be presented in a bottle or a can, with or without an accompanying straw or glass. Do those vessels create different taste expectations and perceptions? Dr. Orlowski and her collaborator wanted to find out.

## TWO EXPERIMENTS

From their review of the academic literature, the collaborators developed three hypotheses which they tested in two experiments.

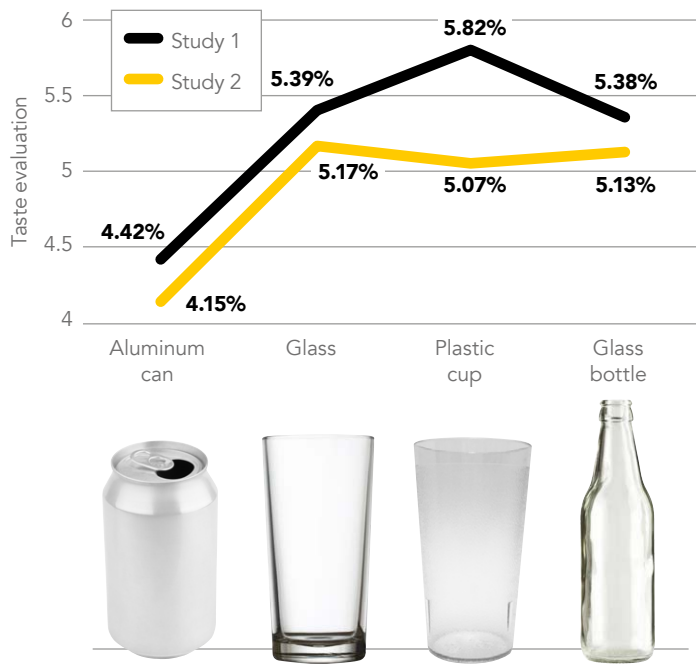
The hypotheses were that different service vessels influence consumer expectations and perceptions of taste, that they also affect consumers' willingness to pay, and that consumers' willingness to pay is influenced by taste perceptions.

Some 141 participants took part in the first study, 60 men and 81 women. With an average age of 36, all lived in the United States. 70% said they dined out weekly, with a typical spend of just under \$16.

Using an online survey, the first study presented participants with the scenario of sitting down for a casual meal in a restaurant and asking for a cola which was served to them while they read the menu. They were then presented with four similar sized photographs of identical drinks served in different, unbranded vessels: an aluminum can, a glass, a plastic cup and a glass bottle.



### Means of taste evaluations for studies 1 & 2



### Means of willingness to pay for studies 1 & 2



measure on a seven-point scale. However, the questions were modified slightly because the second experiment was about actual taste perceptions rather than the expectations of the first study.

The results were also analyzed using standard statistical techniques. The results generally supported the findings of the first study, in that participants rated the taste of drinks in the glass and from the bottle higher, and because of this would be prepared to pay more.

#### RESEARCH SIGNIFICANCE

The research is significant in several ways, not least in that it confirms the findings of previous studies and extends the topic's research base.

The first study, based on visual cues only, contributes to other work on sensory cues, packaging and taste perceptions. It also provides evidence that the visual elements of a drink dominate other sensory cues and influence taste expectations and perceptions.

The second study adds to research on consumer decision-making by demonstrating that the vessels in which drinks are served can lead to different sensory perceptions. Like in the first study, it was again notable that drinks in aluminum cans were perceived to taste worse than the same beverage in another vessel.

Taken together, the results of the two studies offer further evidence of the effect of packaging and presentation on willingness to pay, notably that participants were willing to spend the least on aluminum cans.

#### INDUSTRY IMPLICATIONS

By showing how drinking vessels affect perceptions of taste and consumers' willingness to pay, the research has important implications for bar and restaurant managers, whose decisions affect customer pleasure as well as their bottom line.

The low rating for aluminum cans in both studies is a timely warning, as many producers are turning to cans as a cheaper alternative to glass. The study suggests that similar experiments could now be carried out on more complex beverages such as craft beers and specialty coffees and teas.

The findings on visual cues given by different vessels are highly relevant to all beverage categories, not least because of the influence of social media and customers' practice of checking restaurants and bars online before they visit. In such cases images are vital drivers of customer choice.

The finding of the second study, that there is no significant difference between perceptions of taste for glasses and plastic cups, also offers an opportunity for casual dining venues to consider using a lower-cost option.

Dr. Orlowski said: "There is an old adage that says one should never judge a book by its cover. Yet, when it comes to beverage packaging and presentation... the present research suggests consumers are doing exactly that."

**THERE IS AN OLD ADAGE THAT SAYS ONE SHOULD NEVER JUDGE A BOOK BY ITS COVER. YET, WHEN IT COMES TO BEVERAGE PACKAGING AND PRESENTATION... THE PRESENT RESEARCH SUGGESTS CONSUMERS ARE DOING EXACTLY THAT.**

## RESEARCHERS IN FOCUS

### RESEARCH OBJECTIVES

Dr. Orlowski and her collaborator's work highlights the importance of beverage packaging in determining customer's taste perceptions and willingness to pay.

### REFERENCES

#### Key paper

Lefebvre, S., Orlowski, M. (2019) Can, cup or bottle? The influence of beverage vessel on taste and willingness to pay. *International Journal of Hospitality Management*, 76, pp.194-205.

### CO-AUTHOR

Sarah Lefebvre, PhD, Murray State University

### PERSONAL RESPONSE

#### Were you surprised to find that the study suggests there was no significant difference between people's perceptions of taste for glasses and plastic cups?

Yes, Dr. Lefebvre and I were both surprised to see there wasn't a significant difference between glass and plastic cups in terms of taste perceptions. Across both studies, we expected the glass to rate significantly higher than the plastic cup because glasses are heavier, and heavier packages are generally perceived by consumers as higher in quality. One possible explanation, particularly for our second study, is that we used a hard plastic tumbler in order to stay true to a type of vessel common to fast-casual and casual dining restaurants, rather than a disposable plastic cup. This may have caused consumers to perceive the plastic cup in a more positive light, cancelling out any potential differences between it and the glass.

## Dr. Marissa Orlowski



Dr. Marissa Orlowski is an Assistant Professor in the Foodservice and Lodging Management (FLM) Department at the University of Central Florida's Rosen College of Hospitality Management. Her academic career is preceded by extensive management experience in the hospitality industry, and her primary research interest lies in the domain of food and beverage. She also serves as an Associate Editor for the *International Journal of Contemporary Hospitality Management*.

**A:** 9907 Universal Boulevard, Orlando, FL 32819  
**E:** [Marissa.Orlowski@ucf.edu](mailto:Marissa.Orlowski@ucf.edu) **T:** +1 407-903-8170  
**W:** <https://hospitality.ucf.edu/person/marissa-orlowski>

The research has important implications for bar and restaurant managers.