

Cappuccino Crisis: Can we kick single use cups to the kerb?

Following the popularisation of research by Tversky and Kahneman on the loss aversion of economic agents⁽¹⁾, UCL switched from a 15p discount for reusable cups to a 15p surcharge for single use cups⁽²⁾. In May 2023 this surcharge rose from 25p to 50p⁽³⁾.

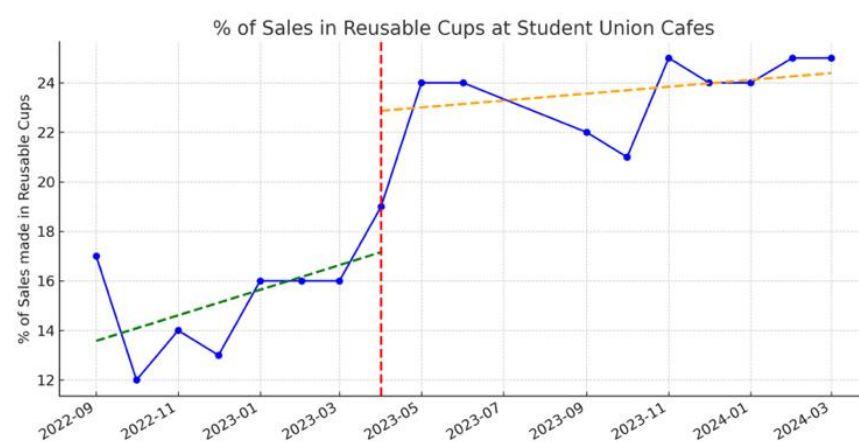
We investigated the effectiveness of this policy and considered price policies that could help UCL reach its goal of 30%⁽³⁾ of sales in reusable cups.

9 in 10 people bring shopping bags to the supermarket, but only 2 in 10 bring reusable cups to UCL cafes^{(3) (4)}.

“Evidence suggests that 50p is the threshold charge for encouraging habitual uptake of reusables” – UCL Union

It is clear from the graph on the right that the doubling of the surcharge to 50p (red dotted line) produced a sharp rise in the use of reusable cups. Formally testing the dataset revealed that this change was significant at the 10% level - the dataset produced a structural break test statistic of 11.06 and a p-value of 0.0615.

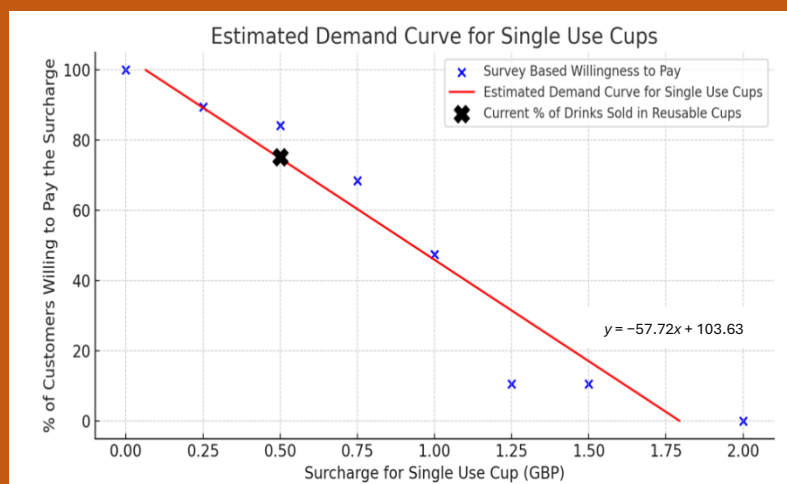
Since this model does not control for any other factors, such as additional campaigning done by UCL, it weakens the case there is a strong causal effect between a surcharge and demand for single use cups. A survey, for example, may help quantify causal effects since monetary incentives still significantly impact the choice to bring a reusable cup, as found by Nicolau et al.,



We asked 50 people the following question:

*“You are leaving home to buy a coffee. You can only buy one coffee and it costs £2.50. If you forget your reusable cup, you **must** pay a surcharge of x (£2.50 + x is your bill).*

*At what price, x , would you **always** bring your reusable cup with you?”*



Survey results are illustrated on this graph, with the current percentage of drinks sold in reusable coffee cups marked (in black) as 25% (as of March 2024⁵). Our survey found that, at the same surcharge of 50p, 16% of customers would purchase a coffee in a reusable cup*.

The estimated demand curve from this survey suggests that a 10p increase in the surcharge for single use cups will lower the percentage of customers that are willing to pay the fee by approximately 5.7%.

Issues and Caveats

- The individuals surveyed do not accurately represent the population. 18 out of 50 individuals participated, and these individuals were not randomly selected.
- *Surveys inaccurately represent real world scenarios. Individuals questioned in this survey may be less sensitive to the surcharge, as responses are given in a theoretical situation. The economic nature of the surcharge may be more strongly felt in real-world transactions than in hypothetical scenarios.
- The regression is biased** and demand depends on the value of the coffee in question. Many individuals base their responses on the maximum price they would pay, inclusive of the surcharge. Therefore, the coffee price (£2.50) is extremely important since it is strongly correlated with the surcharge response.

***Given a high drop-out rate of 64%, the small sample size and the style of question asked (which limits individuals to one coffee, with no alternative cafes), the results obtained are biased. Reverse causality between the price of the surcharge and demand for coffee is inherent, and the endogenous nature of the surcharge means that there will likely be other factors that influence demand for coffee - these have not been controlled for. Use of instrumental variables and controls would have helped reduce this bias. Therefore, our results may only hint at trends, but more rigorous empirical analysis is required to establish causal effects.*

Conclusion & Future policy

Our estimate has shown that a 58p surcharge would help UCL achieve its ‘30% of sales in reusable cups’ target. But this poster leaves scope for further, more rigorous study to better estimate an optimal single use coffee cup surcharge. The strong assumption that customers would not switch to other cafes or drinks leads us to believe that a charge would work better were it implemented widely across all local cafes. Consequently, kicking single use cups to the kerb requires wider intervention; in recent years, the Scottish government, for example, has pushed for such a mandatory national surcharge⁽⁶⁾.

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2. <https://studentsunionucl.org/articles/weve-made-some-changes-in-our-cafes>
3. <https://studentsunionucl.org/index.php/articles/ditch-disposable-challenge>
4. <https://www.theguardian.com/environment/2016/sep/29/shoppers-in-england-now-more-likely-to-use-their-own-bags-plastic>
5. Nicolau, J. et al. (2022), Explaining the willingness of consumers to bring their own reusable coffee cups under the condition of monetary incentives, Journal of Retailing and Consumer Services, 66 (2022), 102908
6. Charges on single-use drinks cups - gov.scot (www.gov.scot)