

Results of a field experiment to reduce coffee cup waste

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The Coffee Cup Problem

- Billions of disposable coffee cups being used per year
- ~2.5 billion cups (*PCCG 2017*)
- But less than 1% is recycled
- Disposable cups difficult to recycle due to PE (plastic) lining
- Technically possible to recycle them, but only at specialised sites (*only 2 sites in UK*)
- Most coffee cups end up in landfill or as litter
- Symbol of disposable 'on-the-go' consumption culture

3 BILLION TAKEAWAY CUPS GO TO
LANDFILL EVERY YEAR IN THE UK



The Coffee Cup Problem

- Many not aware of the problem
- Disposable cups often referred to as *paper cups* – suggesting they are *environmentally friendly* and *recyclable*
- ...but they are not
- Issue highlighted by Hugh Fearnly-Whittingstall in his 'War on Waste' campaign
- Reason for *Bewley's Coffee and Tea Company* to see what they could do themselves



The slogan works on all levels and decks ... Hugh's War on Waste. Photograph: Gus Palmer/Keo Films/BBC

- Working with cup manufacturers to look at alternative cup solutions
- Offering clients branded china crockery and branded keep cups
- Environmental messaging to offered free of charge to clients
- Joined the *Paper Cup Reuse and Recycle Group (PCRRG)*
 - an industry body aiming to develop collection and recycling 'opportunities' for paper cups
- Commissioned study to see how to increase reusable cup usage



- Bewley's contacted Cardiff University to set up the study
- Study co-designed by Cardiff University and Bewley's
- To see if easily implementable measures can increase reusable cup usage (*measures that can be taken by any coffee shop*)
 - environmental messaging
 - provision of reusable cups
 - distribution of reusable cups for free
 - a discount for bringing own cup
 - a charge for disposable cups (after price reduction!)

- Bewley's recruited 12 sites for the study
 - collaboration with 4 universities and caterer Bartlett Mitchell
 - in total 8 university sites and 4 business sites
 - the sites had different combinations of measures
- Display posters/showcards about the environmental impact of disposable coffee cups
- Offer reusable cups at ~cost price
- Distribute a number of free reusable cups to customers
- Reward for using a reusable cup (*i.e. 15-25p discount*)
- Penalty for using disposable cup (*i.e. 25p charge*)

- Before-and-after intervention study
- Recording daily sales of hot drinks for 10 weeks
(5 weeks before and 5 weeks after, typically 2 x 25 days)
- Multilevel interrupted time series regression analysis
- Daily proportion of reusable cups was dependent variable

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KEYS. WALLET. PHONE.
KEEP CUP.



REMEMBER YOUR CUP WHEN YOU'RE WALKING OUT
THE DOOR & KEEP PAPER CUPS OUT OF UK LANDFILLS

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Number	Study site	Messaging	Reusable cup provision		Financial incentive	
	University or Business	Environmental message	Cups for sale	Free cups provided	Charge	Discount
1	University	Y	Y	Y	Y	N
2	Business	Y	Y	Y	N	Y
3	Business	Y	Y	N	N	Y
4	University	Y	Y	N	N	N
5	University	Y	Y	N	N	N
6	University	Y	Y	N	N	N
7	University	Y	Y	N	N	N
8	Business	Y	Y	N	N	N
9	University	Y	N	N	N	Y
10	University	Y	N	Y	N	N
11	University	Y	N	Y	N	N
12	Business	Y	N	N	N	N
Overall						



#KEEPYOURCUP

Number	Study site University or Business	Messaging Environmental message	Reusable cup provision		Financial incentive		Hot drink sales with reusable cups	
			Cups for sale	Free cups provided	Charge	Discount	Before, in % M (SD)	After, in % M (SD)
1	University	Y	Y	Y	Y	N	5.1 (1.7)	17.4 (5.5)
2	Business	Y	Y	Y	N	Y	1.8 (0.5)	12.4 (3.4)
3	Business	Y	Y	N	N	Y	4.9 (0.8)	6.0 (0.6)
4	University	Y	Y	N	N	N	0.0 (0.0)	9.0 (3.0)
5	University	Y	Y	N	N	N	0.4 (0.3)	1.1 (0.6)
6	University	Y	Y	N	N	N	1.4 (0.4)	1.3 (0.5)
7	University	Y	Y	N	N	N	0.7 (1.3)	0.3 (0.5)
8	Business	Y	Y	N	N	N	7.5 (2.7)	24.0 (4.6)
9	University	Y	N	N	N	Y	13.7 (6.4)	17.5 (3.3)
10	University	Y	N	Y	N	N	0.3 (0.7)	4.4 (9.1)
11	University	Y	N	Y	N	N	0.9 (1.7)	7.1 (6.1)
12	Business	Y	N	N	N	N	4.4 (1.6)	5.7 (2.4)
Overall							3.3 (4.4)	7.6 (8.1)

- Financial incentives, reusable alternatives and clear messaging all had an impact on consumer behaviour
 - messaging increased use of reusable cups by 2.3%
 - availability of reusable cups led to an increase of 2.5%
 - distributing of free reusable cups led to an increase of 4.3%
 - a charge increased use of reusable cups by 3.4%
- The effects are additive: overall, use of reusable coffee cups increased by 2.3 to 12.5%
- While increases for individual measures were modest, the greatest behavioural change was when measures combined

- Use of reusable coffee cups could be increased by up to 12.5% with a combination of measures.
- This could mean a reduction of broadly 50-300 million disposable coffee cups p/a if measures rolled out across UK
- While a charge on disposable cups increased the use of reusable cups, a discount on reusable cups had no impact
- The University of Winchester continued with the trial and recording of sales; and rolled out charge across 3 cafes

- Before trial, the university used around 190,000 disposable cups over the academic year
- Earlier efforts to reduce disposable cups were not successful
- Increased reusable cup usage in the study (5.1 to 17.4%)
- The University continued with the trial and recording of sales; and rolled out charge across 3 cafes
- Extra 2,500 free cups distributed in February 2017

	Café 1	Café 2	Café 3
Nov 16 – Feb 17	22%	27%	18%
Feb 17 – May 17 (free cups)	37%	43%	28%
May 17 – Sept 17	30%	43%	29%
Total	28%	34%	23%

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Waste

Reusable incentives could slash disposable coffee cup waste

Free reusables, 25p charge on disposables and green slogans in cafes could cut some of 2.5bn cups thrown away each year, finds study

Up to 7m coffee cups are thrown away in the UK every day. The plastic film lining the paper cups means they are rarely recyclable. Photograph: GoPollution/Alamy

Rebecca Smithers Consumer affairs correspondent

Thursday 30 March 2017 07:39 BST

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Charging Coffee Lovers For Disposable Cups 'Could Cut Use By Up To 300 Million'

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Charging for disposable coffee cups could help cut the number thrown away by 300million a year

- Academics at Cardiff University say a charge would reduce waste and litter
- The levy would work in a similar way to the existing 5p fee on plastic bags
- Up to 2.5billion are being dumped in the ground or burned every year in the UK

By SEAN POULTER CONSUMER AFFAIRS EDITOR FOR THE DAILY MAIL

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THE TIMES

Charge 25p for coffee cups to reduce waste



Charging for cups would be more effective than offering customers a discount for bringing their own, a study suggests

Charging 25p for every disposable coffee cup would help to cut the number used by up to 300 million a year, a study has concluded.

The Coffee Cups and Plastic Bottles Inquiry



House of Commons
Environmental Audit
Committee

Commons Select Committee



Plastic bottle and coffee cup waste inquiry launched



04 March 2017

The Environmental Audit Committee launch an inquiry into the damage being done to the environment by disposable drinks packaging, focussing on the impact of plastic bottles and coffee cups. The inquiry will look at what actions are being undertaken by industry and Government to reduce waste generated by coffee cups and plastic bottles, and investigate possible solutions.

- Inquiry: Disposable Packaging: Coffee Cups and Plastic Bottles
- Environmental Audit Committee

Memorandum submitted to the House of Commons Environmental Audit Committee's Coffee Cups and Plastic Bottles disposable packaging inquiry

29 March 2017

Professor Wouter Poortinga, Professor of Environmental Psychology, Welsh School of Architecture and School of Psychology, Cardiff University

BACKGROUND

1. In this memorandum I will address a number of the questions relating to what initiatives could be utilised to reduce coffee cup and plastic bottle waste; how awareness can be increased amongst the public; and how charges can be used to encourage the use of reusable alternatives.
2. I have expertise in Environmental Psychology, and recently led an ESRC-funded project evaluating the introduction of the English plastic bag charge, and conducted research on attitude and behaviour change following the Welsh carrier bag charge.^{1,2}
3. In addition, Bewley's Tea and Coffee UK Ltd and Cardiff University conducted a field experiment to explore how the use of reusable coffee cups could be encouraged through easily implementable measures.



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