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AUSTRALIA

CREATE CHANGE

# Triggering behavioural change among tourists to reduce food waste

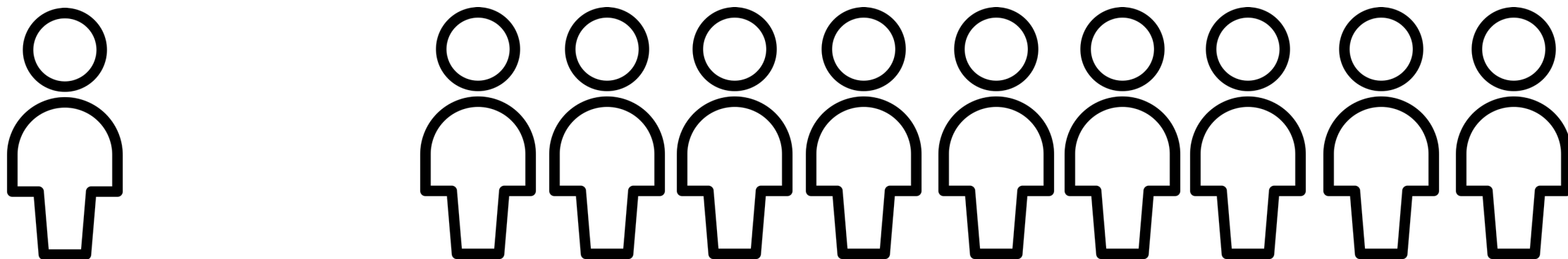
Professor Sara Dolnicar

Tourism | UQ Business School | The University of Queensland

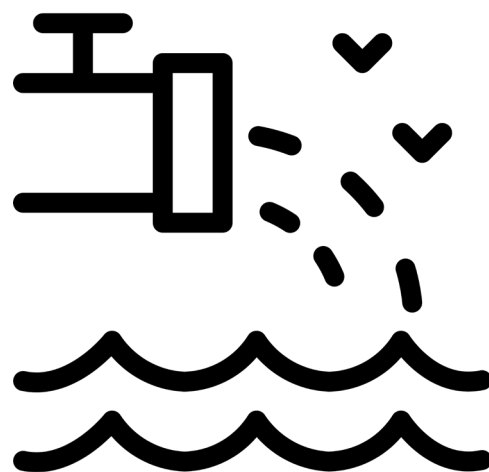
@SaraDolnicar



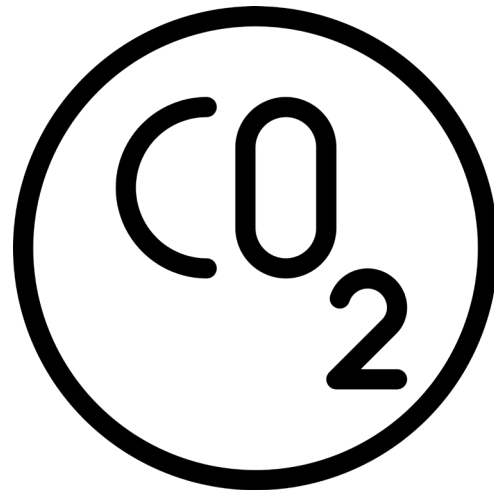
10% of GDP  
globally



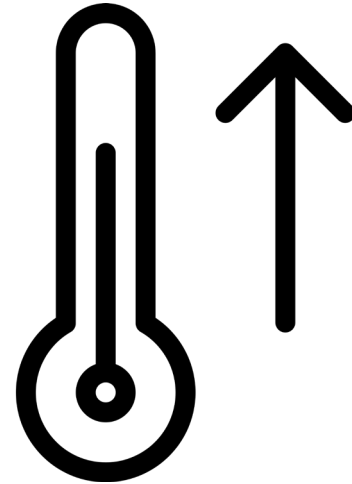
1 in 10 jobs  
globally



5<sup>th</sup> most  
polluting industry



8% of global  
CO<sub>2</sub> emissions



up to 12.5%  
contribution to  
global warming



35 million tons  
of solid waste  
per year



300 litres  
per guest  
per night

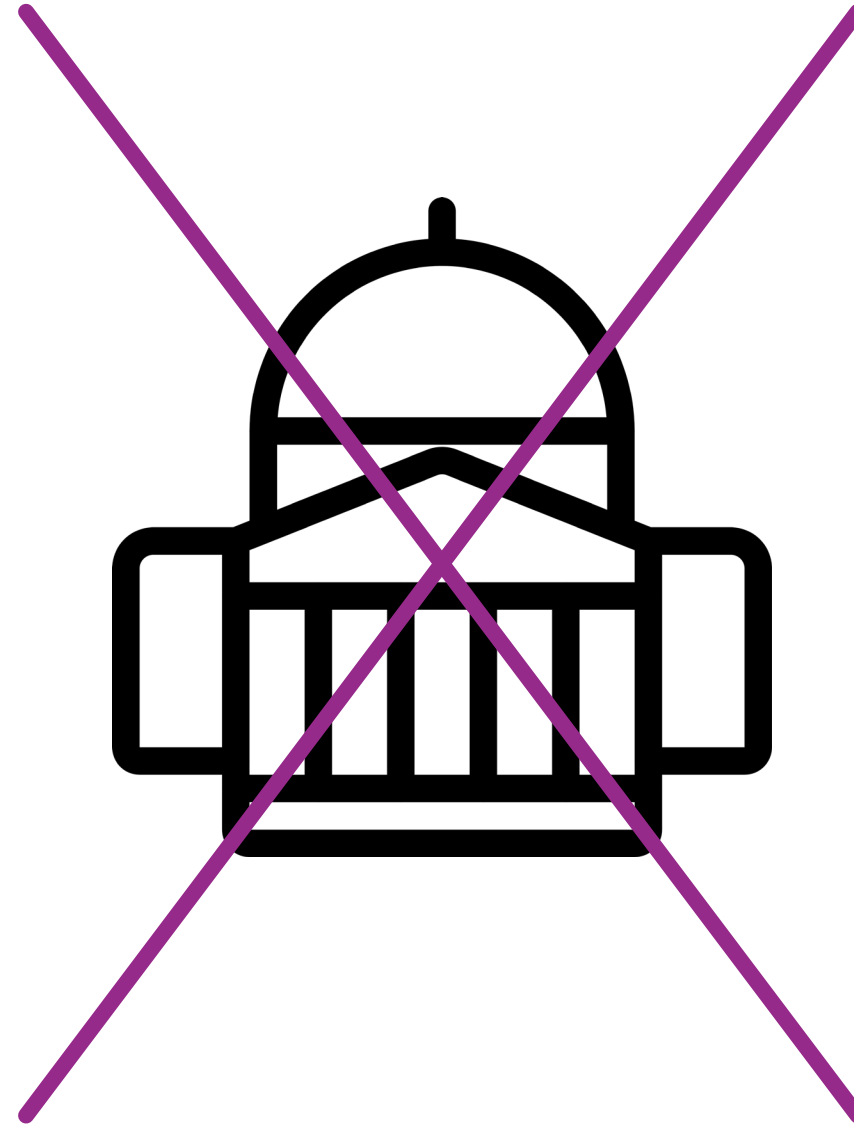


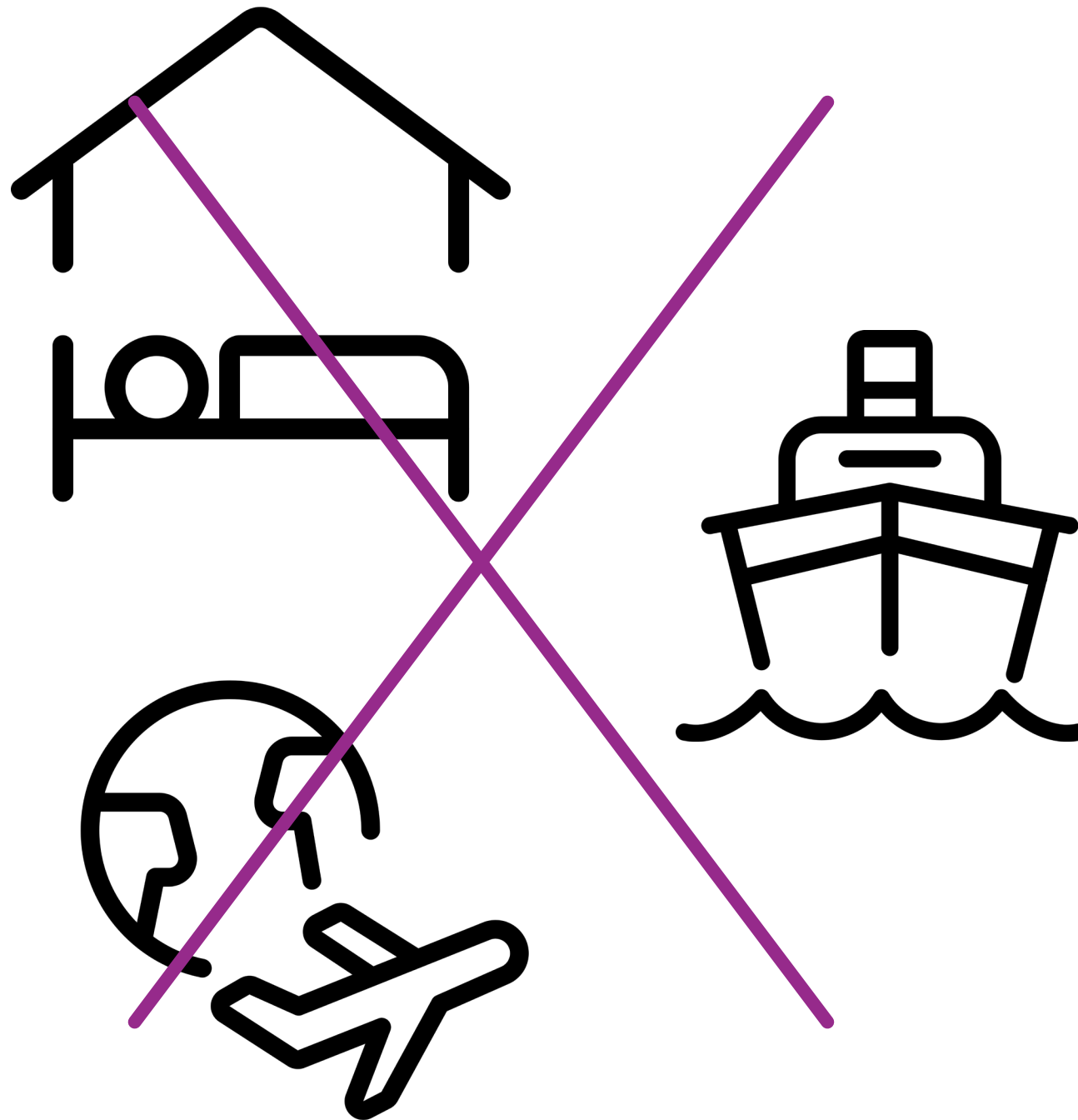


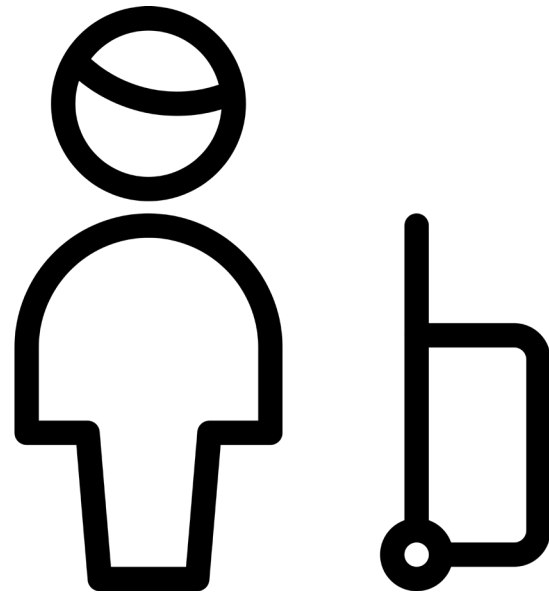
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Who can fix it?







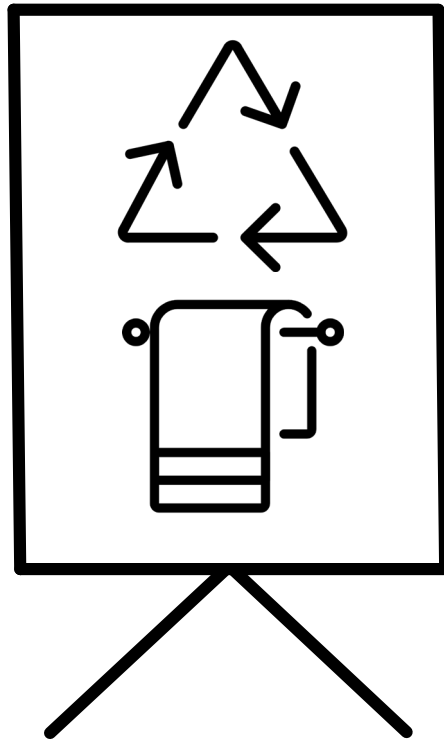


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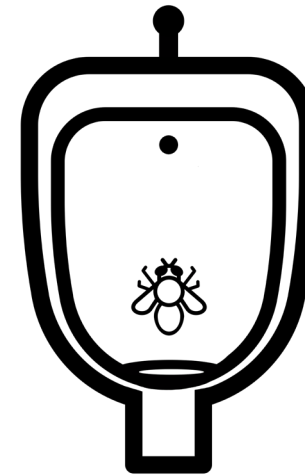
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# How?

## Convince them



## Entice them “Trick them”

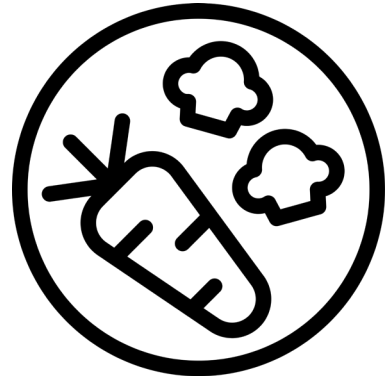
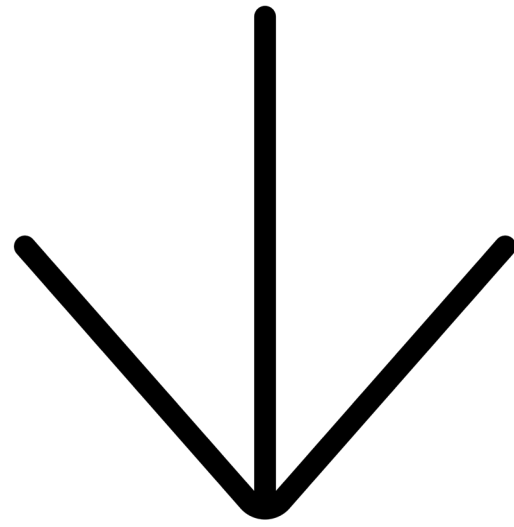
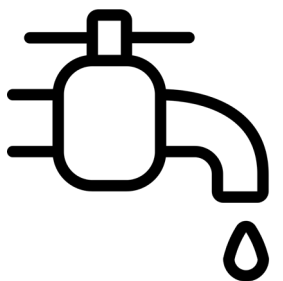
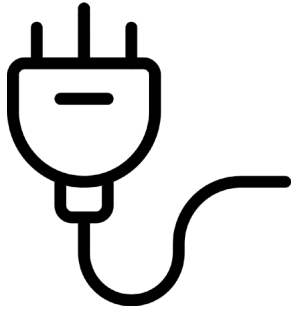




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What do we want to achieve?







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Is food waste a problem?

# A few food waste facts

- food accounts for 20% of global greenhouse gas emissions
- food accounts for 92% of the global water footprint
- one-fifth of food is lost
- we waste 1.3 billion tons of food annually
  
- food waste accounts for more than 50% of hospitality waste
- 75-80% of hospitality food waste in the UK is avoidable
- ~1/3 of food waste comes from customers' plates
- 11–13% of food served not eaten



# Plenty of “tips” – little hard evidence

## University restaurant

~ \$5 fine for leaving plate waste behind at university restaurant  
→ 54% reduction, education intervention had no effect

## University canteen

Reduction of portion size of chips (88g → 44g) at  
→ 86% reduction (6.2g → 4.2g)

## University canteen

Education reduced plate waste by 25%, education + trayless dining  
→ 54% reduction

## Employee cafeteria

Free chocolate for leaving no leftovers  
→ 60% reduction



Kuo, C., & Shih, Y. (2016). Gender differences in the effects of education and coercion on reducing buffet plate waste. *J Foodservice Bus Res*, 19(3), 223-235.

Freedman, M. R., & Brochado, C. (2010). Reducing portion size reduces food intake and plate waste. *Obesity*, 18(9), 1864-1866.

Kim, T., & Freedman, M. R. (2010). Students reduce plate waste through education and trayless dining in an all-you-can-eat college dining facility. *Journal of the American Dietetic Association*, 110(9), Supplement, A68. doi:10.1016/j.jada.2010.06.253

Windrum, E. (2014) Intercon cuts food waste among employees with new campaign, <https://dohanews.co/qatar-organizations-responding-countrys-high-food-waste>, accessed 4.2.2018.

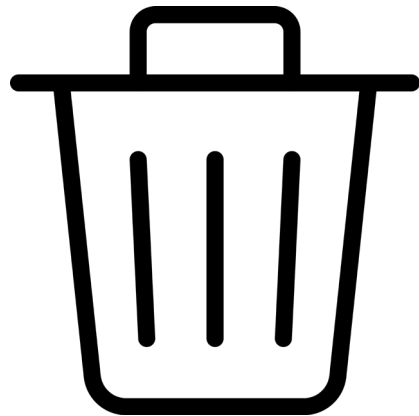


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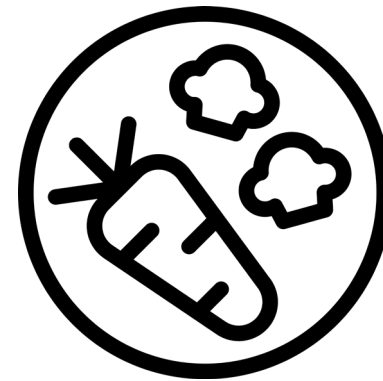
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# Can we reduce food waste in tourism?

# Food waste versus plate waste



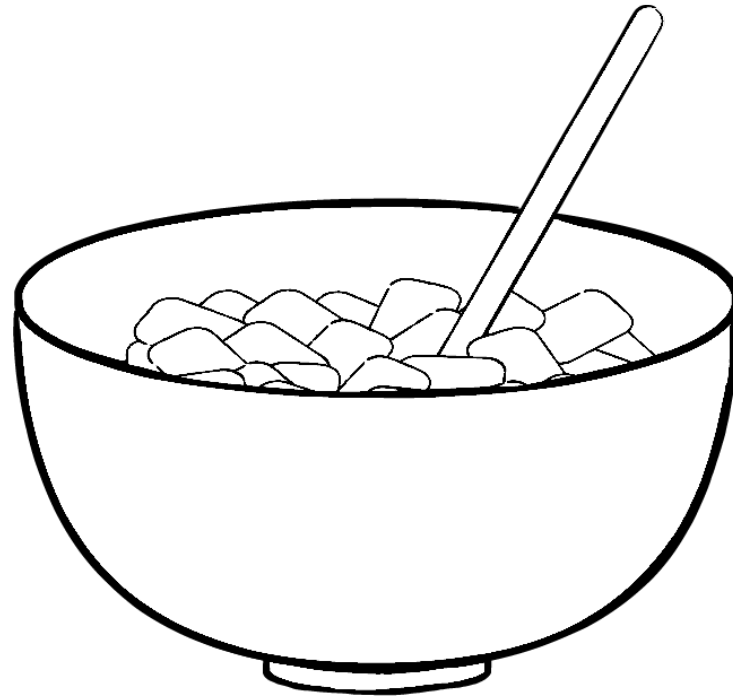
Only partially avoidable



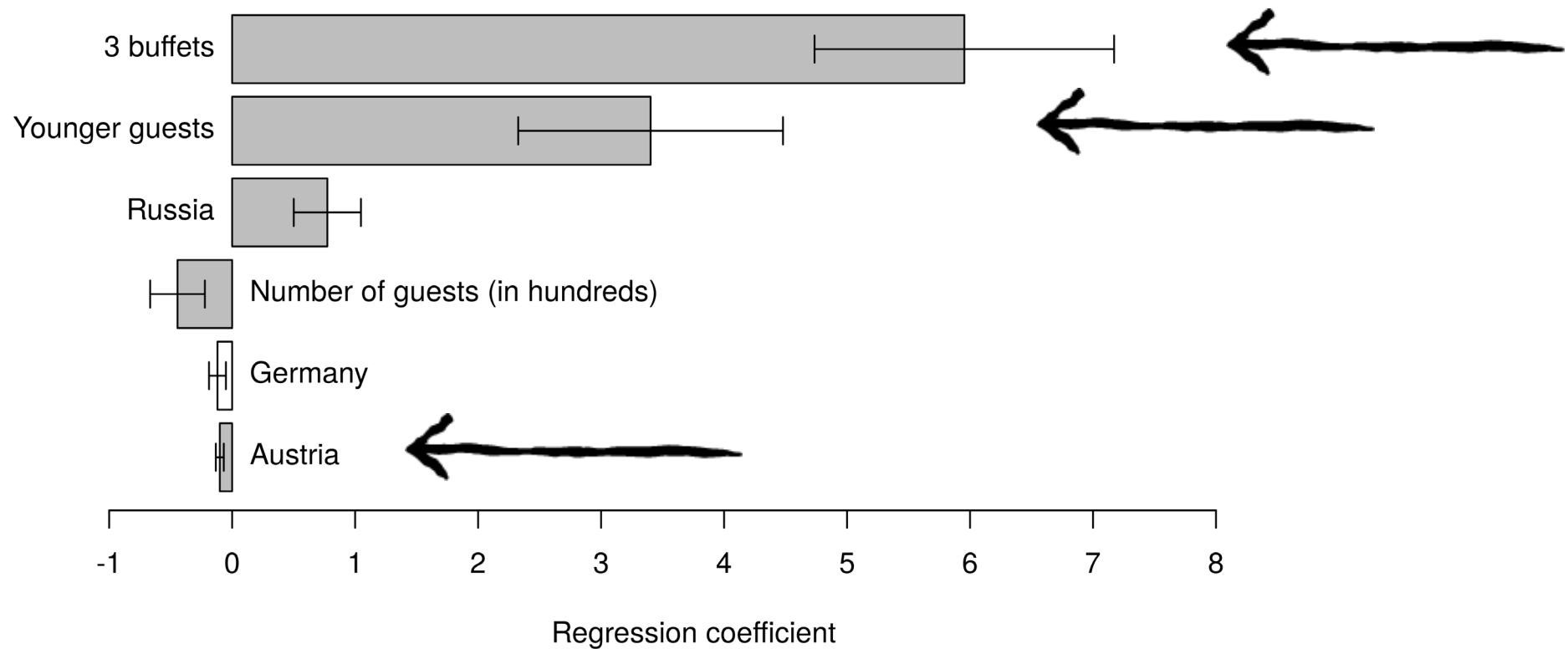
Totally avoidable  
Without compromise in enjoyment

# Empirical studies in tourism – how much plate waste?

15.2 g  
breakfast



# Empirical studies in tourism – who wastes how much?





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Can we make tourists eat up?



# We can make tourists eat up at buffets ... ... by giving children stamps and prizes

HOTEL	Histrion <input checked="" type="checkbox"/> Vile Park <input type="checkbox"/>
SOBA / ZIMMER	252
PRIHOD / ANKUNFT	27.8.
ODHOD / ABREISE	30.8.
NARODNOST / NATIONALITÄT	AT
ŠT. ODRASLIH / ANZAHL DER ERWACHSENEN	2
ŠT. OTROK / ANZAHL DER KINDER	1
STAROST OTROK / ALTER DER KINDER	9

DATUM DATE	ŽIG STAMP	DATUM DATE	ŽIG STAMP	DATUM DATE	ŽIG STAMP
27.8.	☺				
28.8.	☺				
29.8.	☺				

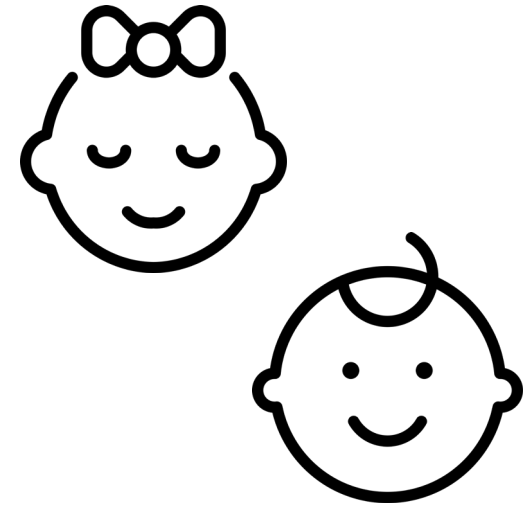
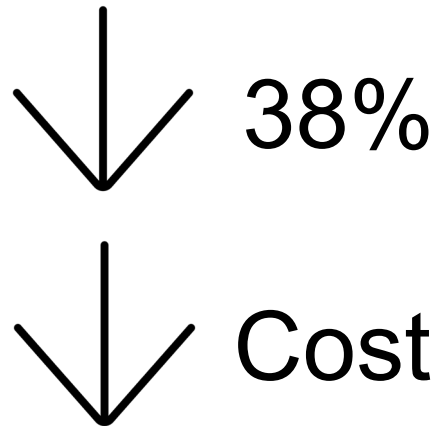
Sammeln Sie Stempel während Ihres gesamten Aufenthalts und erhalten Sie am Ende ein Geschenk!

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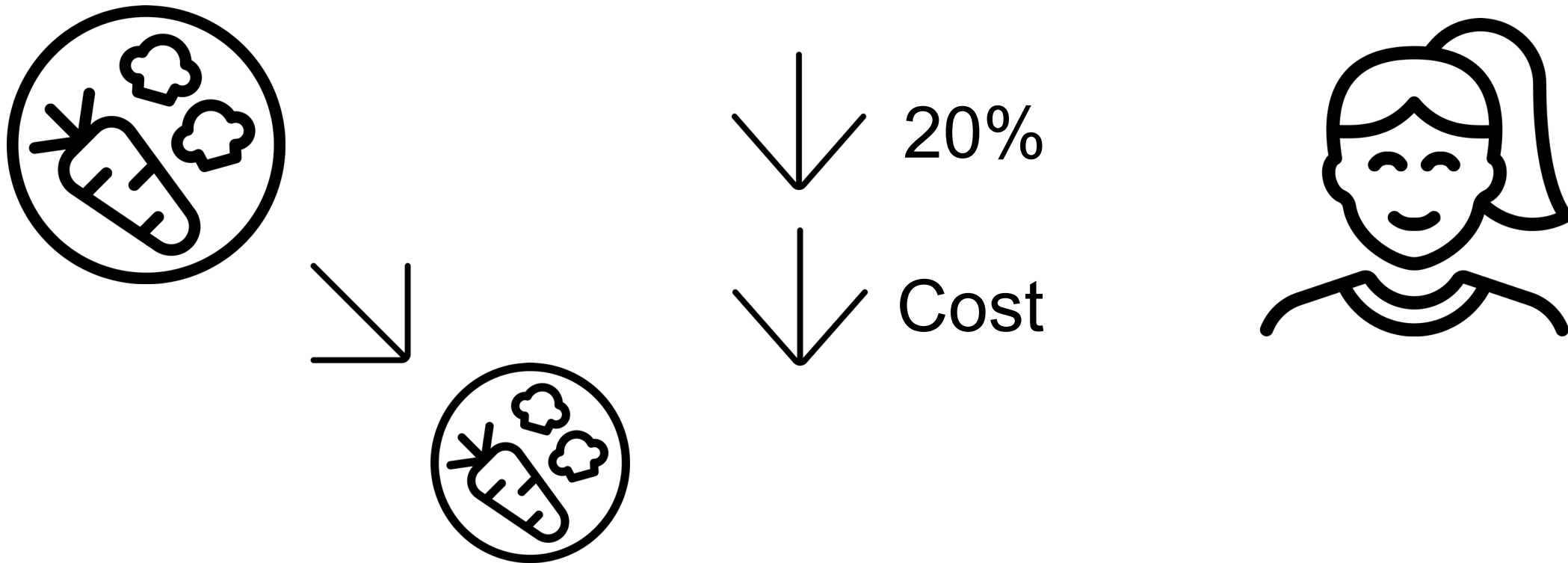
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SOBA / ROOM	2163
PRIHOD / ARRIVAL	4.8.
ODHOD / DEPARTURE	11.8.
NARODNOST / NATIONALITY	SL
ŠT. ODRASLIH / NUMBER OF ADULTS	2
ŠT. OTROK / NUMBER OF CHILDREN	1
STAROST OTROK / CHILDREN'S AGE	10

DATUM DATE	ŽIG STAMP	DATUM DATE	ŽIG STAMP	DATUM DATE	ŽIG STAMP
4.8.	☺	9.8.	☺		
5.8.	☺	10.8.	☺		
6.8.	☺				
7.8.	☺				
8.8.	☺				

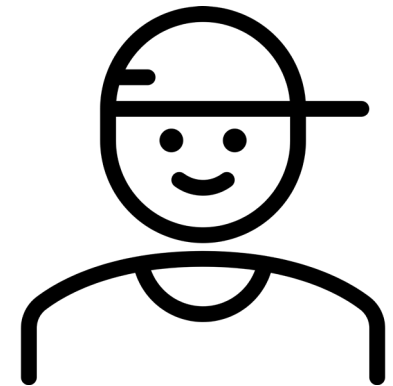
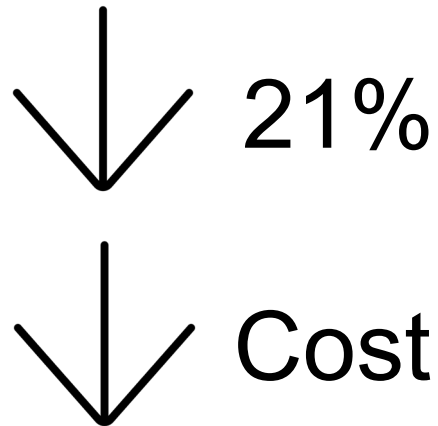
Collect stamps for the entire duration of your stay and receive a present.



We can make tourists eat up at buffets ...  
... by reducing the plate size



# We can make tourists eat up at buffets ... ... by using table signs



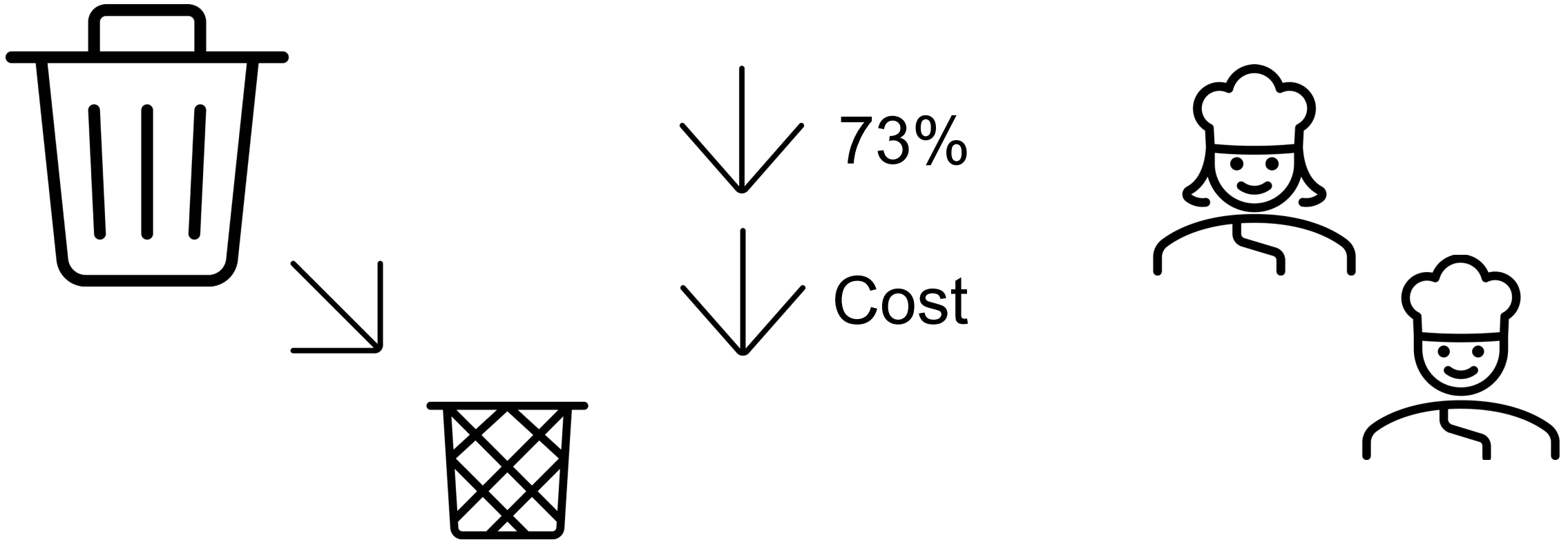


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Can we make cooks waste less?

We can also make cooks waste less food in the kitchen ...  
... by using small, transparent bins





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A win-win-win-win?

Reduce environmental damage caused by tourism → win

Reduce operating cost → win

Green positioning → win

No reduction in vacation enjoyment → no loss



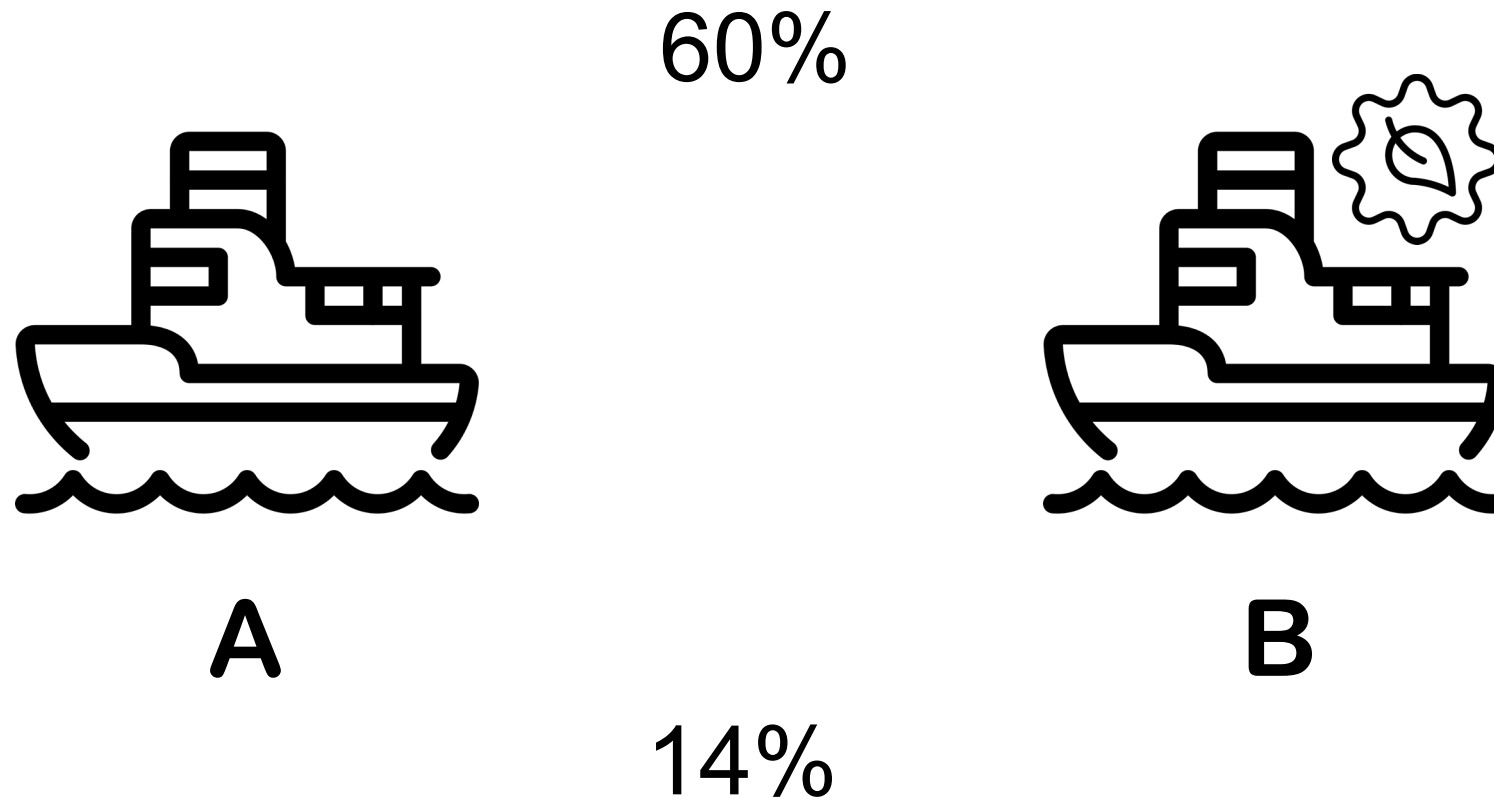
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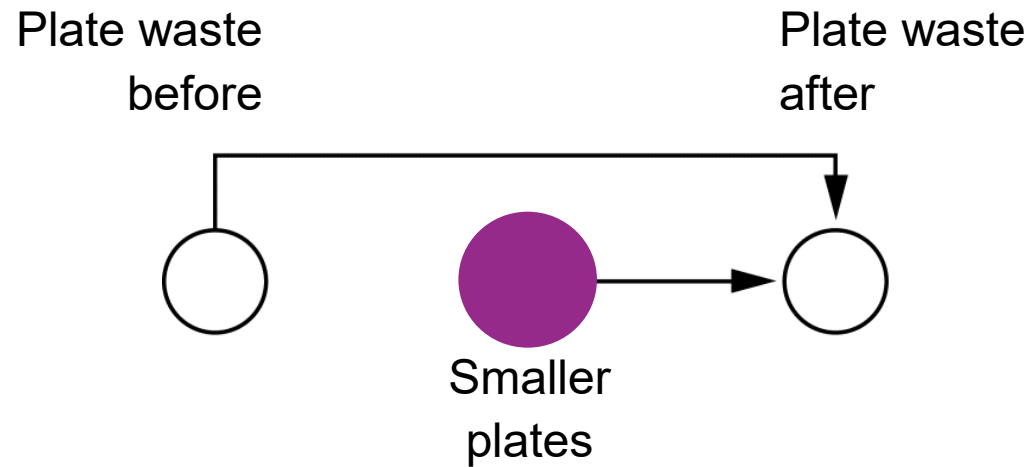
How can we test more such approaches?



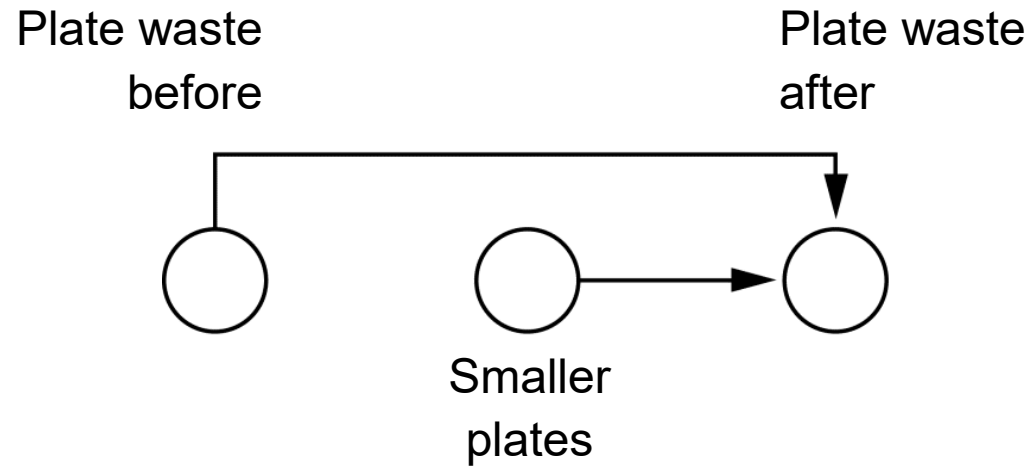
# We need to measure actual behaviour



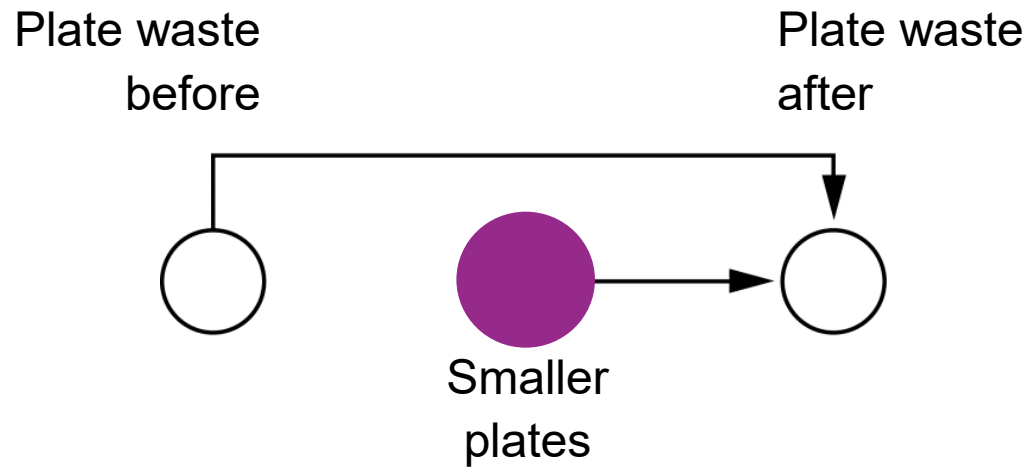
# We need to run experiments in real tourism businesses



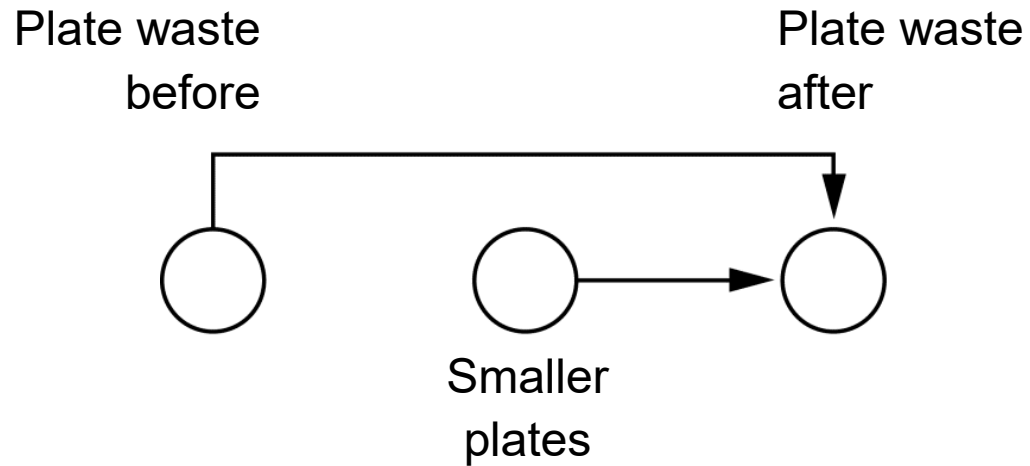
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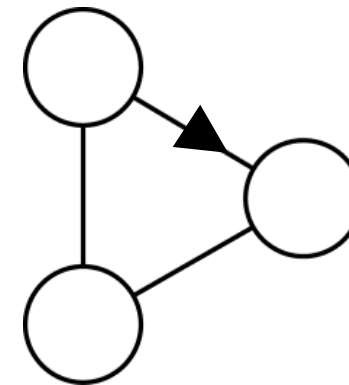
# We need to run experiments in real tourism businesses



# We need to run experiments in real tourism businesses

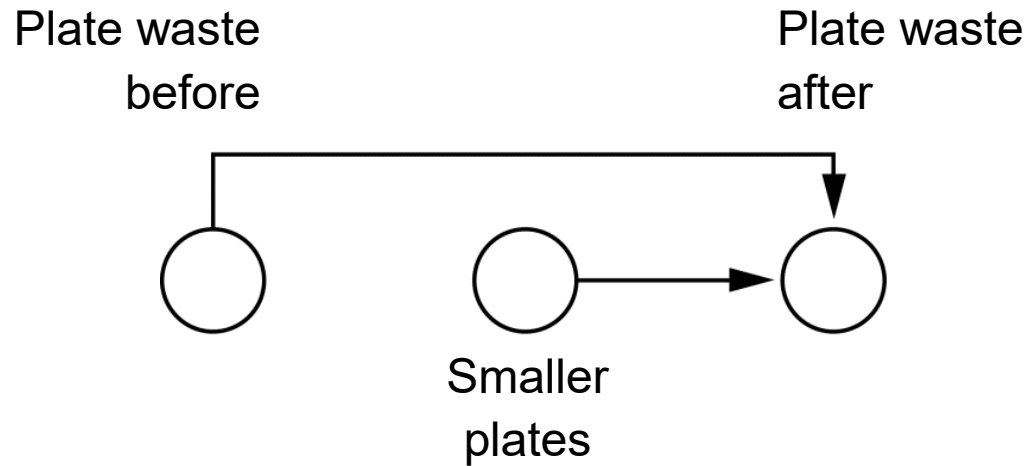


EXPERIMENTS  
Cause and effect

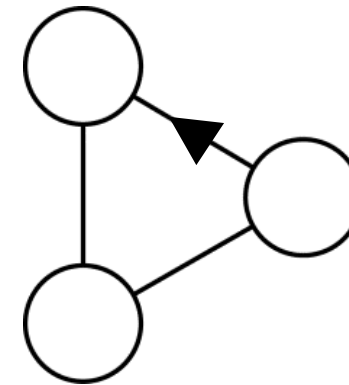


SURVEY STUDIES

# We need to run experiments in real tourism businesses



EXPERIMENTS  
Cause and effect



SURVEY STUDIES  
Associations / correlations  
But what is the cause?  
And what is the effect?

# Thank you for your attention

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