



THE UNIVERSITY
OF QUEENSLAND
AUSTRALIA

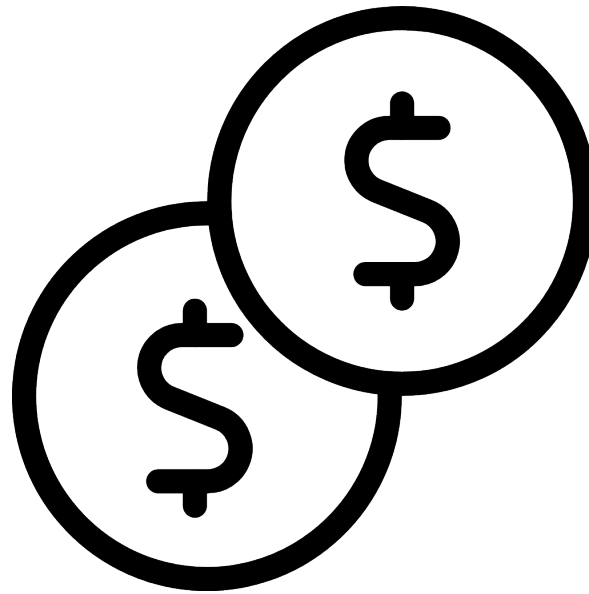
CREATE CHANGE

Triggering behavioural change among tourists to reduce food waste

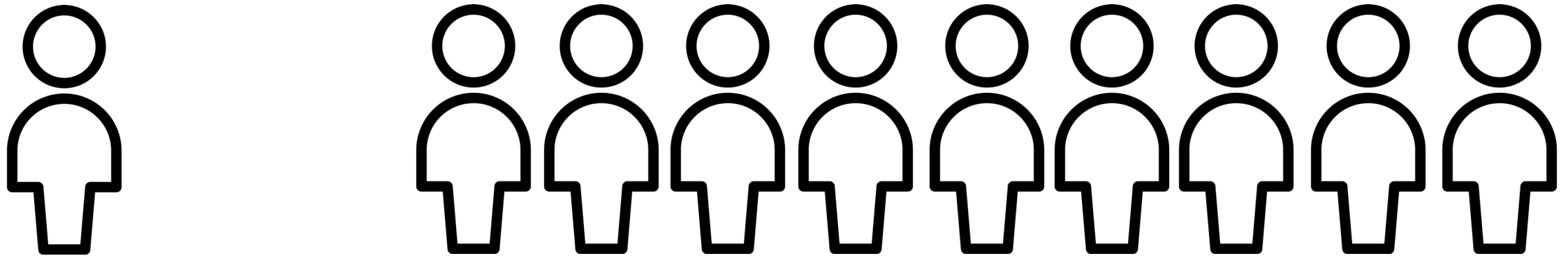
Professor Sara Dolnicar

Tourism | UQ Business School | The University of Queensland

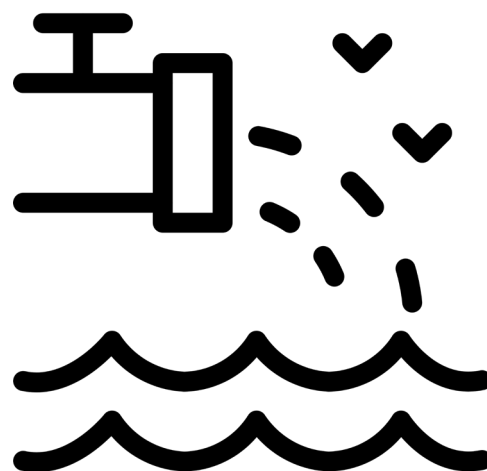
@SaraDolnicar



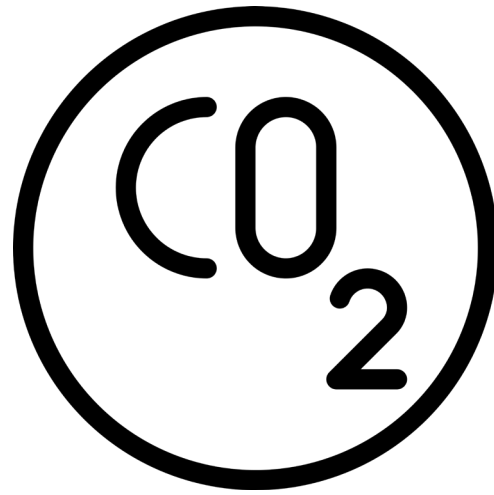
10% of GDP
globally



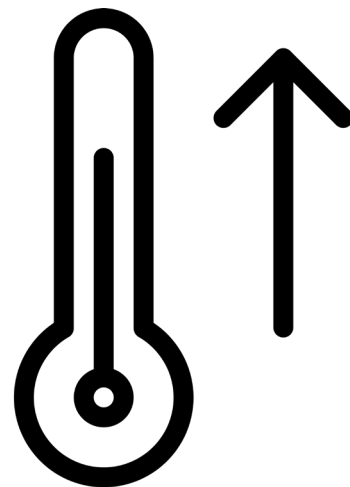
1 in 10 jobs
globally



5th most
polluting industry



8% of global
 CO_2 emissions



up to 12.5%
contribution to
global warming



35 million tons
of solid waste
per year



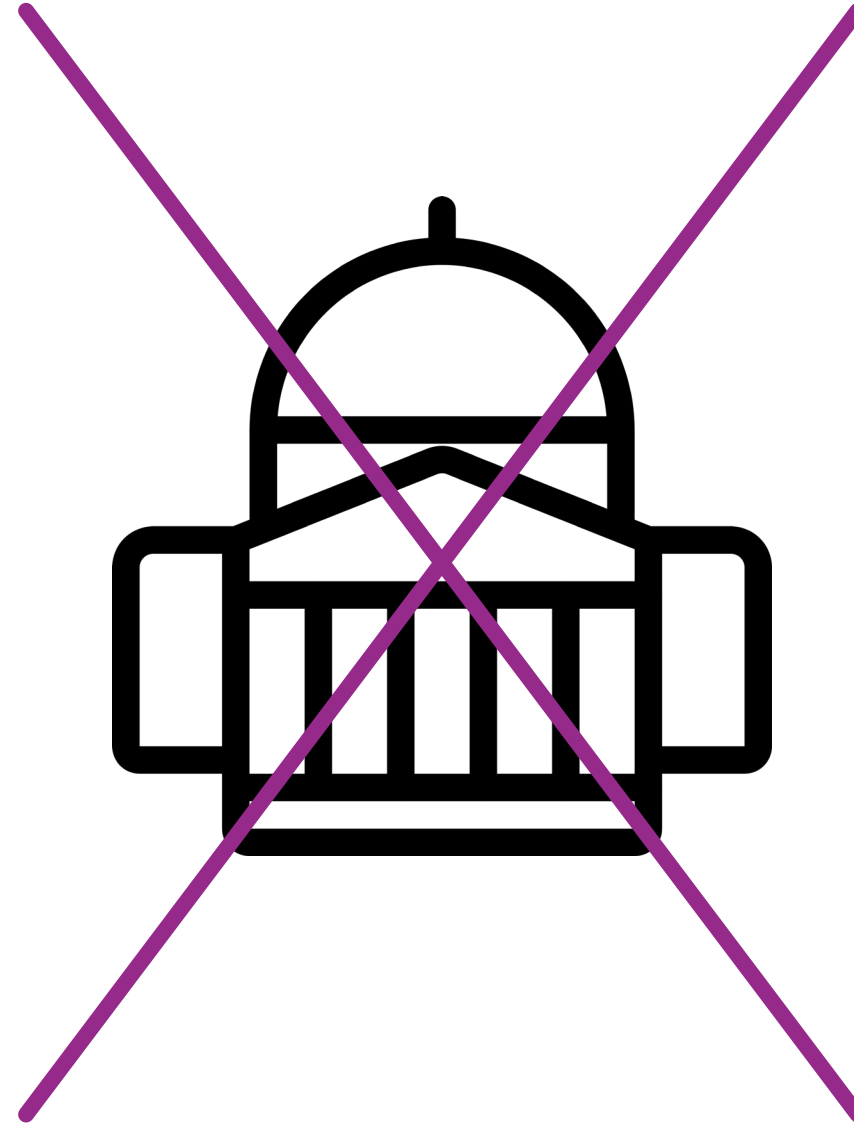
300 litres
per guest
per night

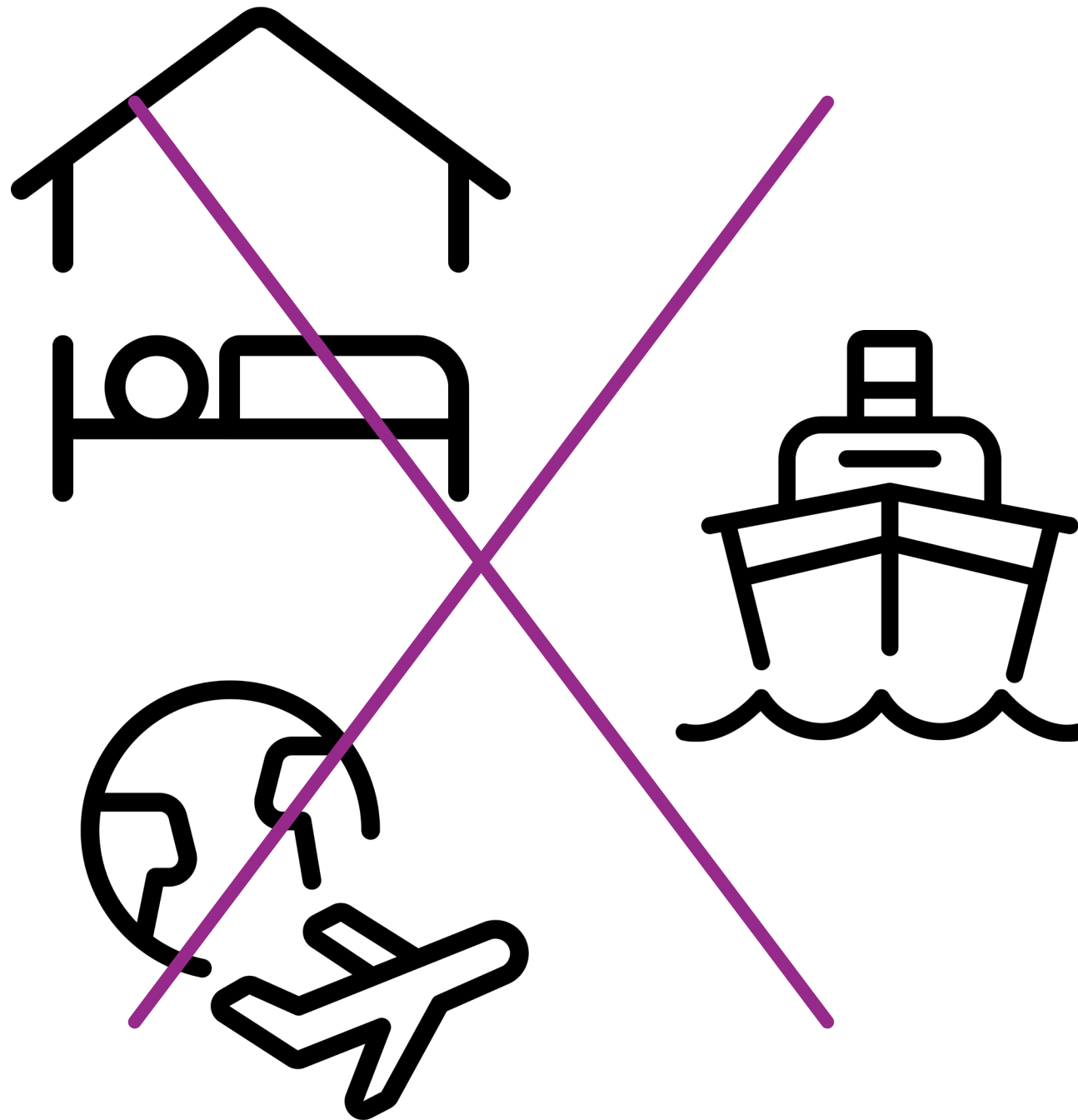


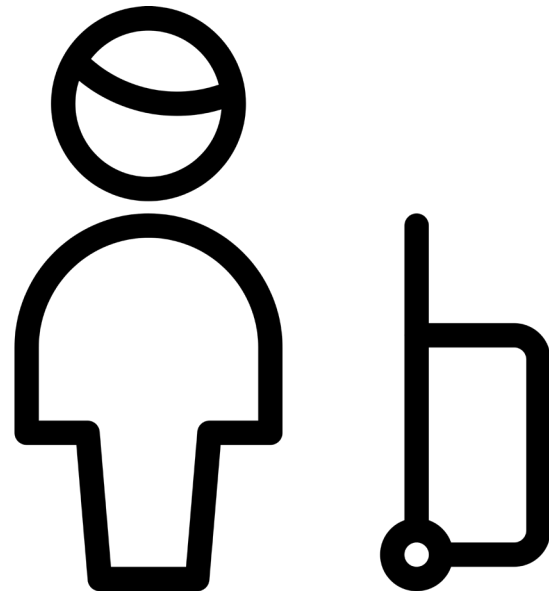
THE UNIVERSITY
OF QUEENSLAND
AUSTRALIA

CREATE CHANGE

Who can fix it?







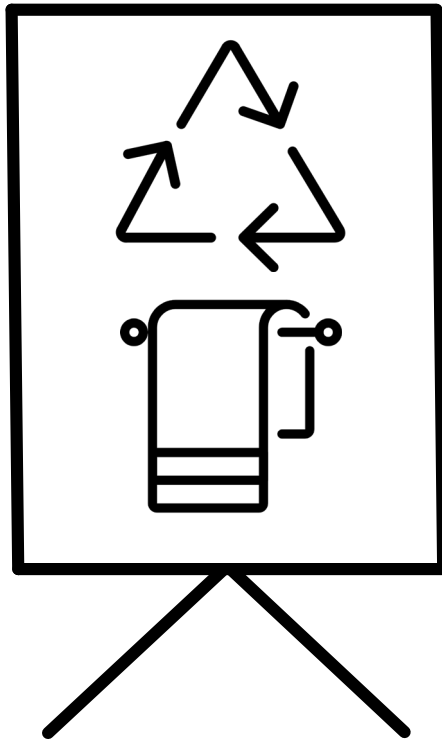


THE UNIVERSITY
OF QUEENSLAND
AUSTRALIA

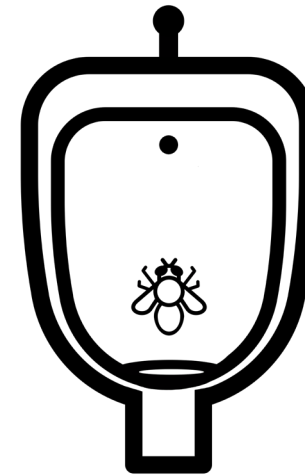
CREATE CHANGE

How?

Convince them



Entice them “Trick them”

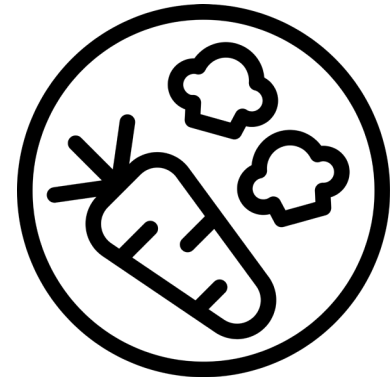
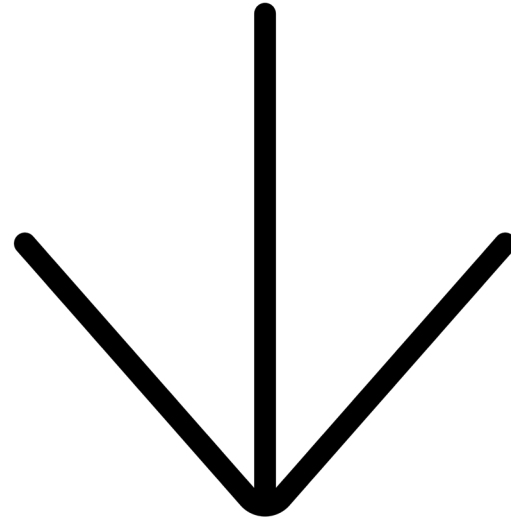
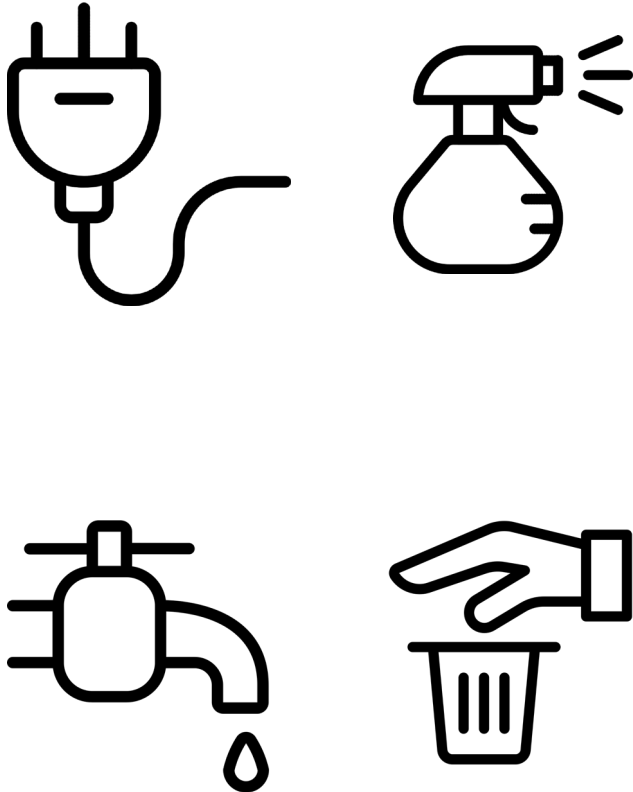




THE UNIVERSITY
OF QUEENSLAND
AUSTRALIA

CREATE CHANGE

What do we want to achieve?





THE UNIVERSITY
OF QUEENSLAND
AUSTRALIA

CREATE CHANGE

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.

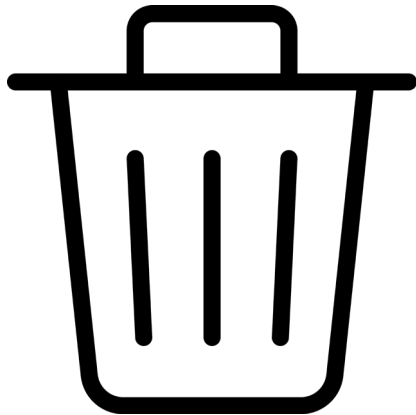


THE UNIVERSITY
OF QUEENSLAND
AUSTRALIA

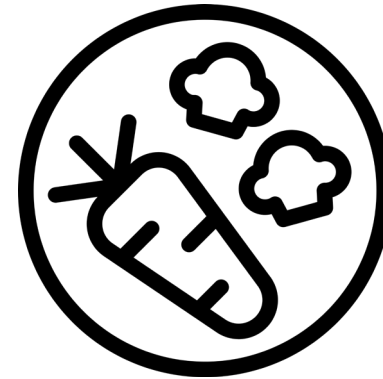
CREATE CHANGE

Can we reduce food waste in tourism?

Food waste versus plate waste



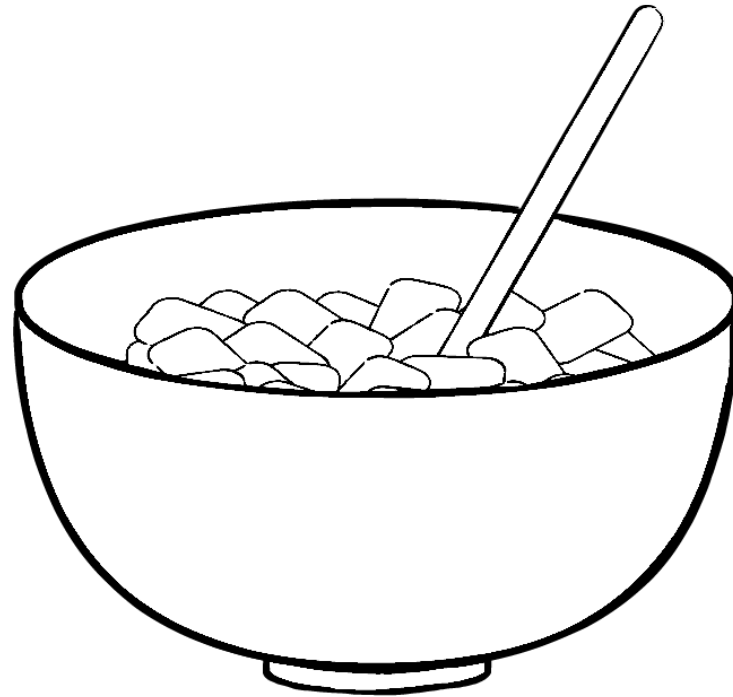
Only partially avoidable



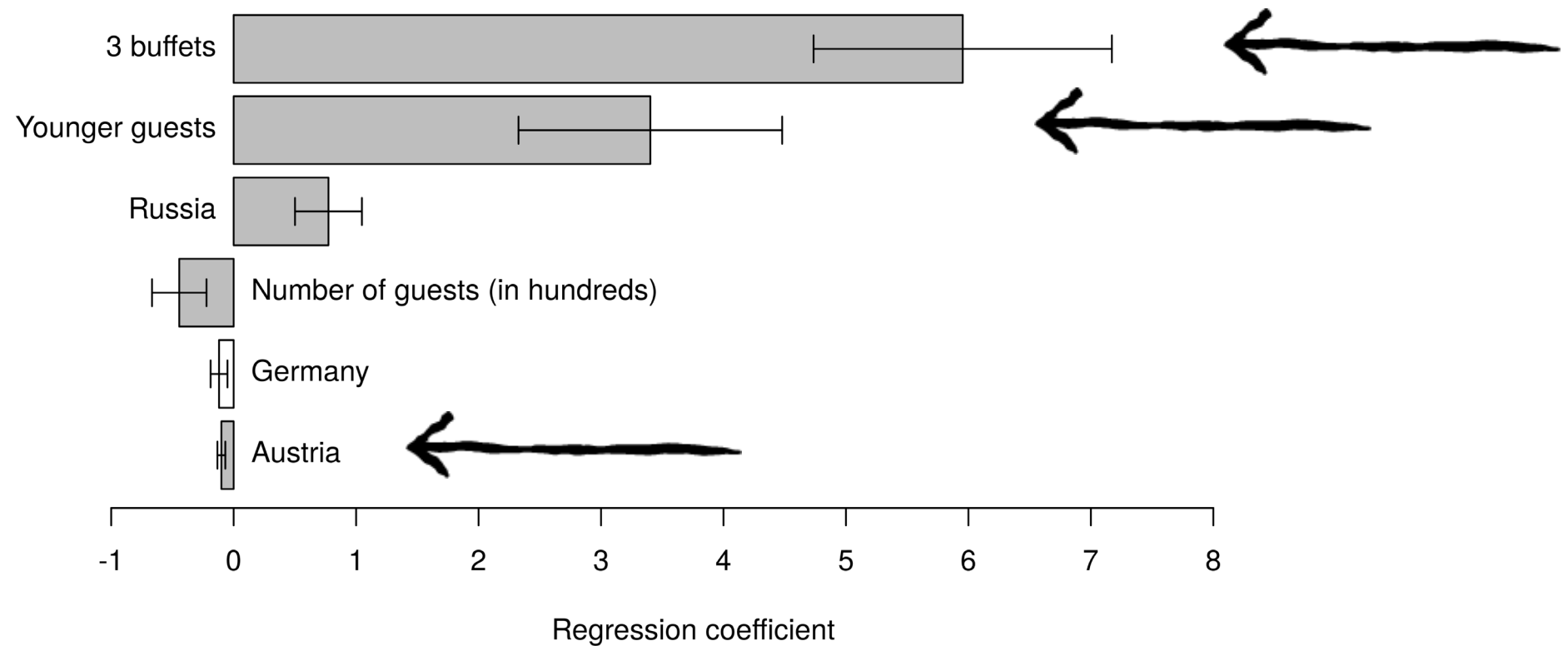
Totally avoidable
Without compromise in enjoyment

Empirical studies in tourism – how much plate waste?

15.2 g
breakfast



Empirical studies in tourism – who wastes how much?





THE UNIVERSITY
OF QUEENSLAND
AUSTRALIA

CREATE CHANGE

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

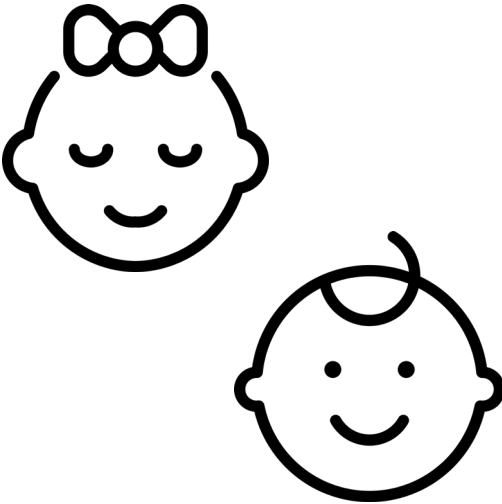
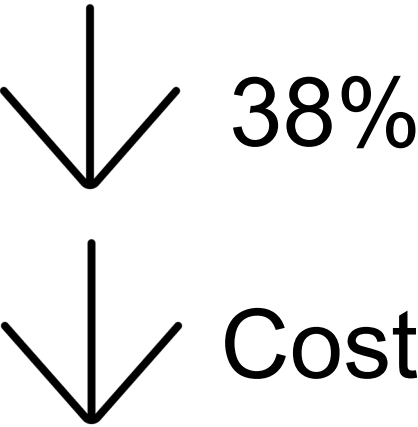
DATUM	ŽIG	DATUM	ŽIG	DATUM	ŽIG
DATE	STAMP	DATE	STAMP	DATE	STAMP
27.8.	☺				
28.8.	☺				
29.8.	☺				

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

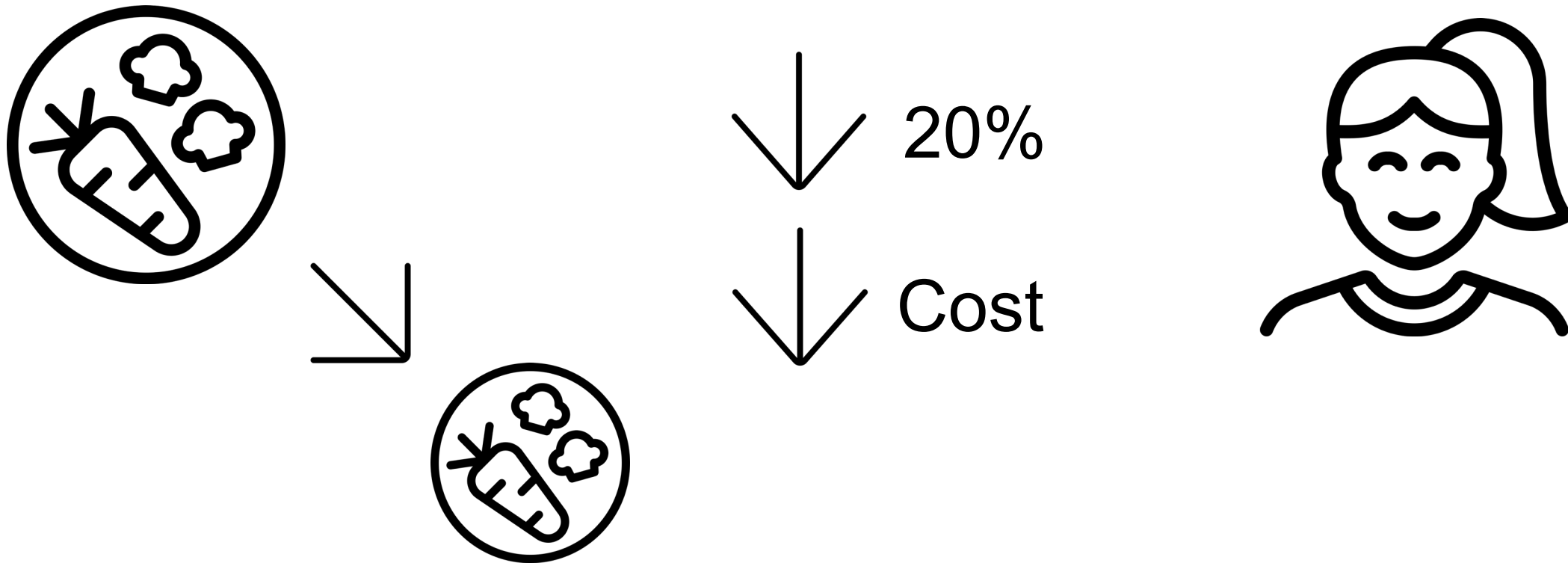
HOTEL	Histrion <input checked="" type="checkbox"/> Vile Park <input type="checkbox"/>
SOBA / ROOM	2163
PRIHOD / ARRIVAL	4.8.
ODHOD / DEPARTURE	11.8.
NARODNOST / NATIONALITY	SLV
ŠT. ODRASLIH / NUMBER OF ADULTS	2
ŠT. OTROK / NUMBER OF CHILDREN	1
STAROST OTROK / CHILDREN'S AGE	10

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

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

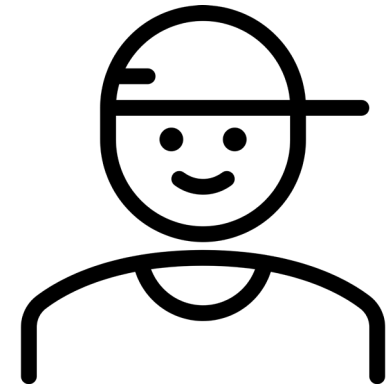
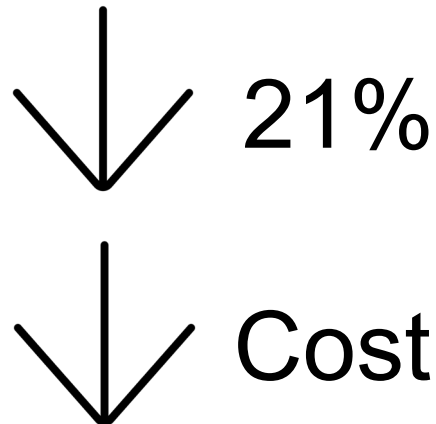


We can make tourists eat up at buffets ...
... by reducing the plate size



We can make tourists eat up at buffets ...

... by using table signs



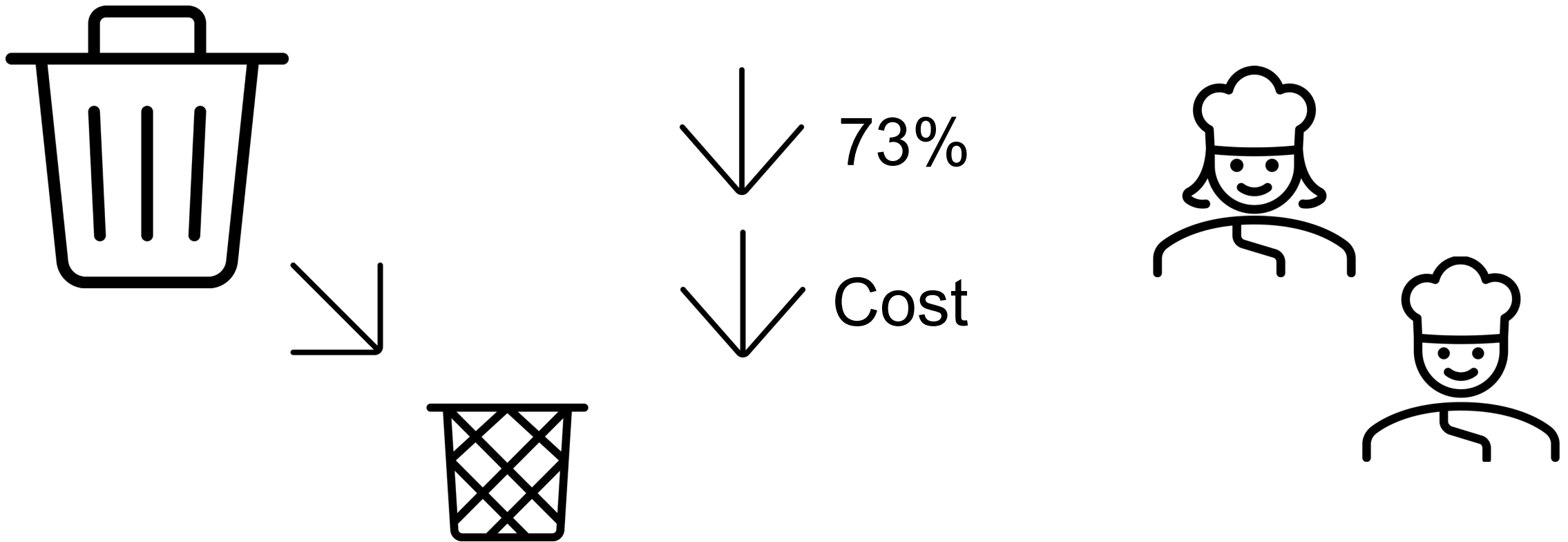


THE UNIVERSITY
OF QUEENSLAND
AUSTRALIA

CREATE CHANGE

Can we make cooks waste less?

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





THE UNIVERSITY
OF QUEENSLAND
AUSTRALIA

CREATE CHANGE

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

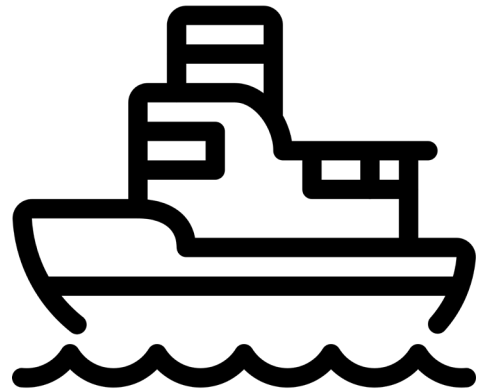


THE UNIVERSITY
OF QUEENSLAND
AUSTRALIA

CREATE CHANGE

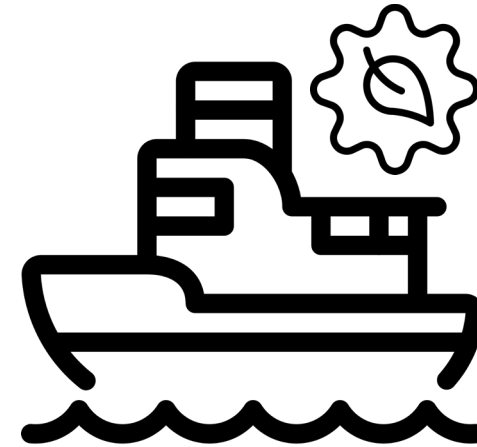
How can we test more such approaches?

We need to measure actual behaviour



A

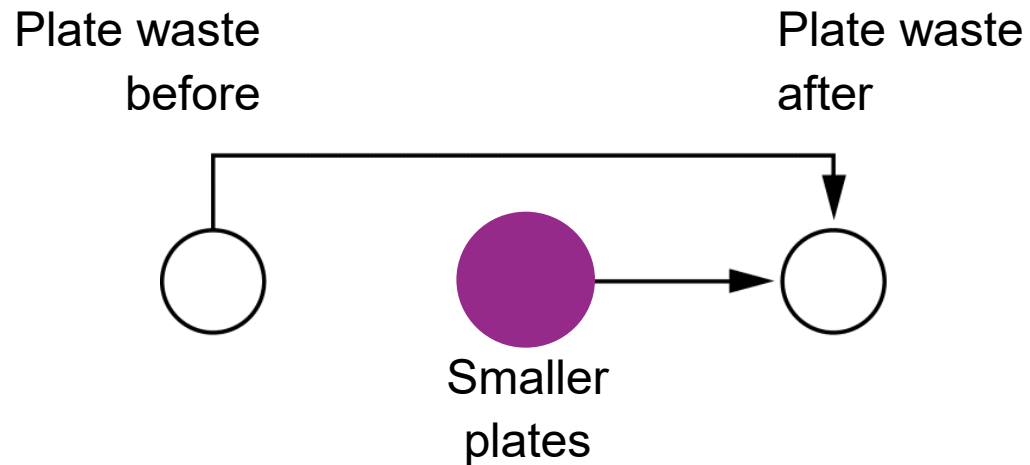
60%



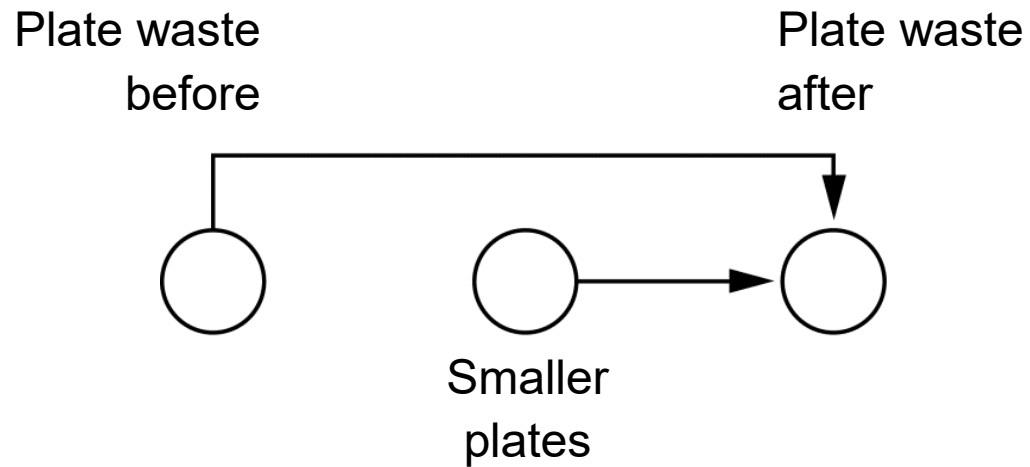
B

14%

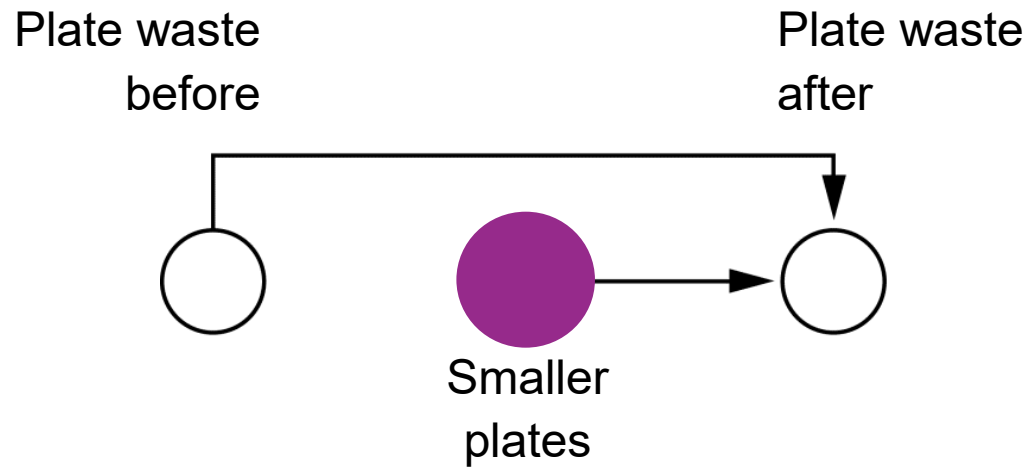
We need to run experiments in real tourism businesses



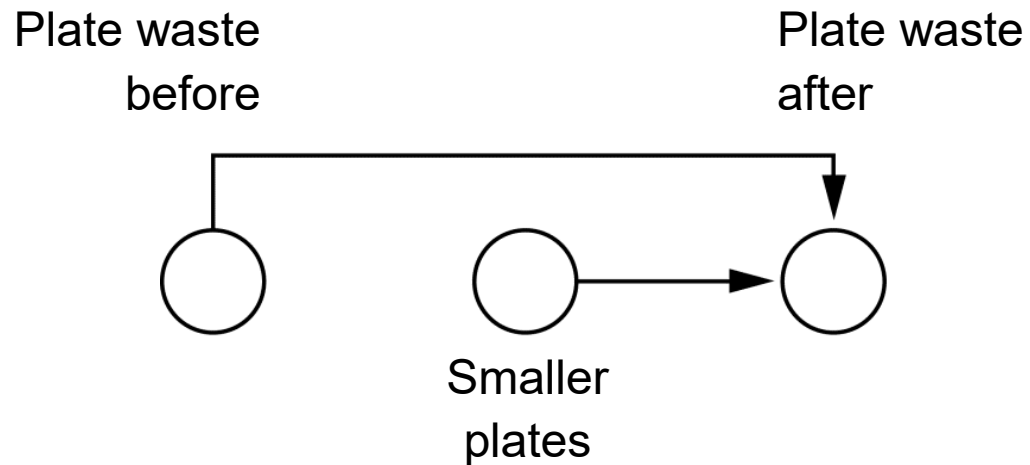
We need to run experiments in real tourism businesses



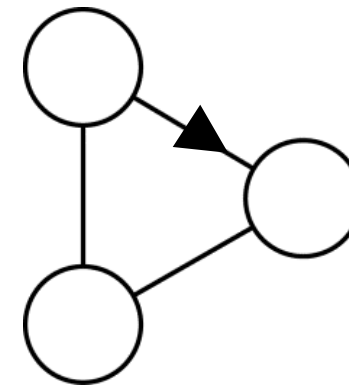
We need to run experiments in real tourism businesses



We need to run experiments in real tourism businesses

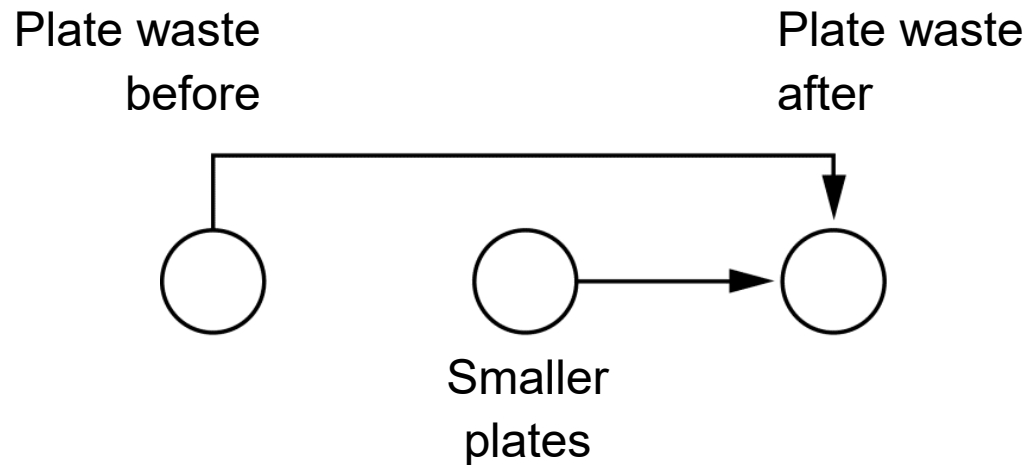


EXPERIMENTS
Cause and effect

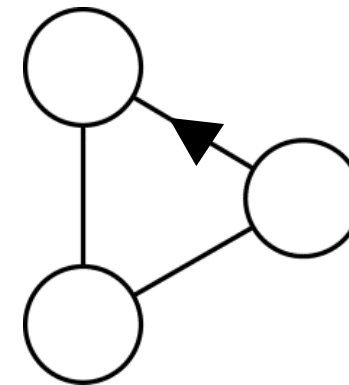


SURVEY STUDIES

We need to run experiments in real tourism businesses



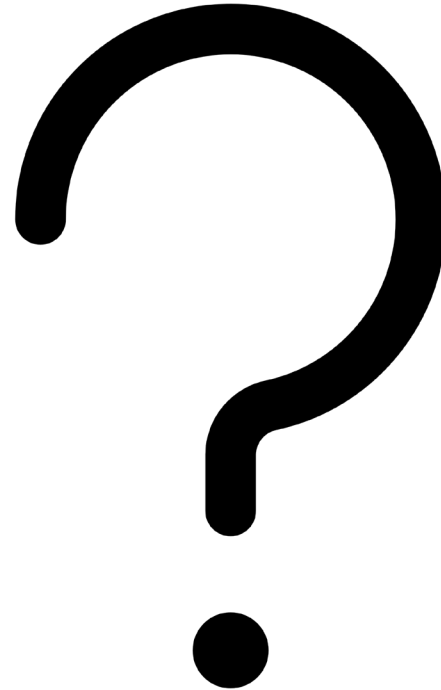
EXPERIMENTS
Cause and effect



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

Thank you for your attention

Professor Sara Dolnicar
Tourism | UQ Business School
s.dolnicar@uq.edu.au



facebook.com/uniofqld



Instagram.com/uniofqld



[@SaraDolnicar](https://twitter.com/SaraDolnicar)



Sara Dolnicar, UQ Business School



Australian Government

Australian Research Council