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11th March 2021
WCTR SIG F1 & AUM Webinar

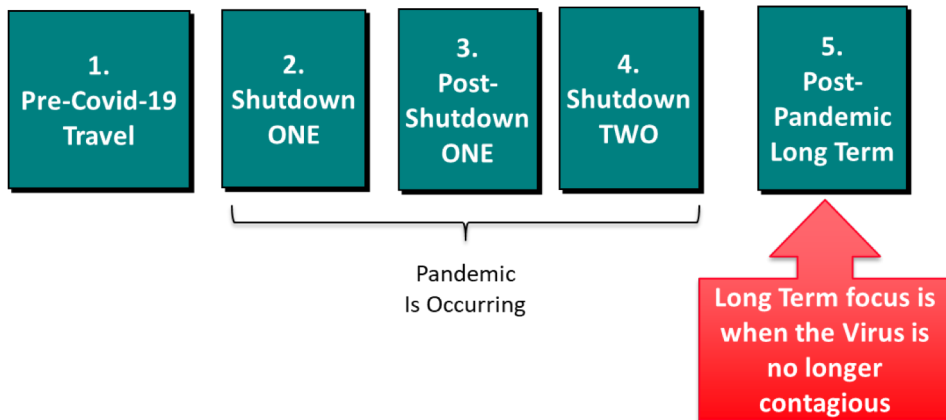# Long term/post-pandemic impacts of COVID-19 on commuting in Melbourne, Australia

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Public Transport Research Group
Monash Institute of Transport Studies
Monash University, Australia

PTRG PUBLIC TRANSPORT RESEARCH GROUP

GROUP OF EIGHT AUSTRALIA

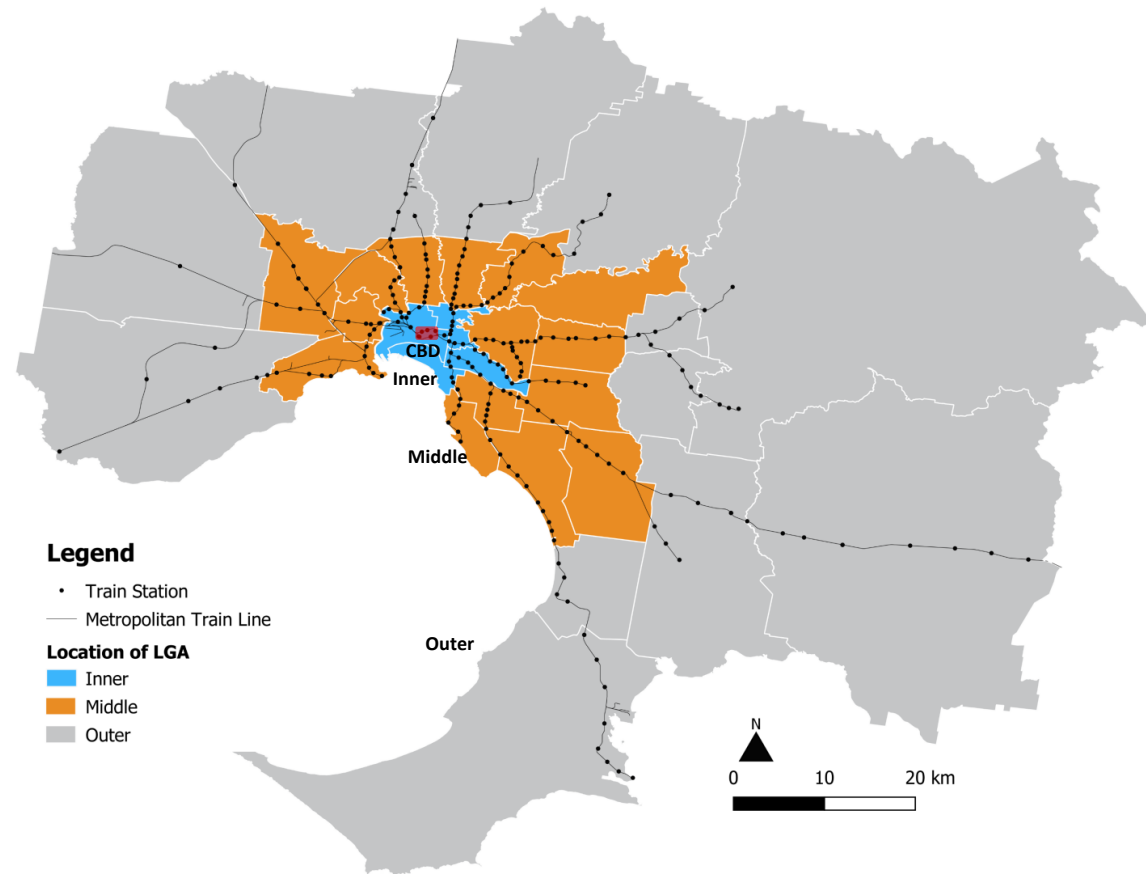MONASH INSTITUTE OF TRANSPORT STUDIES

This presentation outlines findings of a study aiming to understand the long term/post pandemic impacts of Covid-19 on Travel in Melbourne – it focusses on spatial insights

Objective: Understand how C-19 has impacted travel including long term effects.
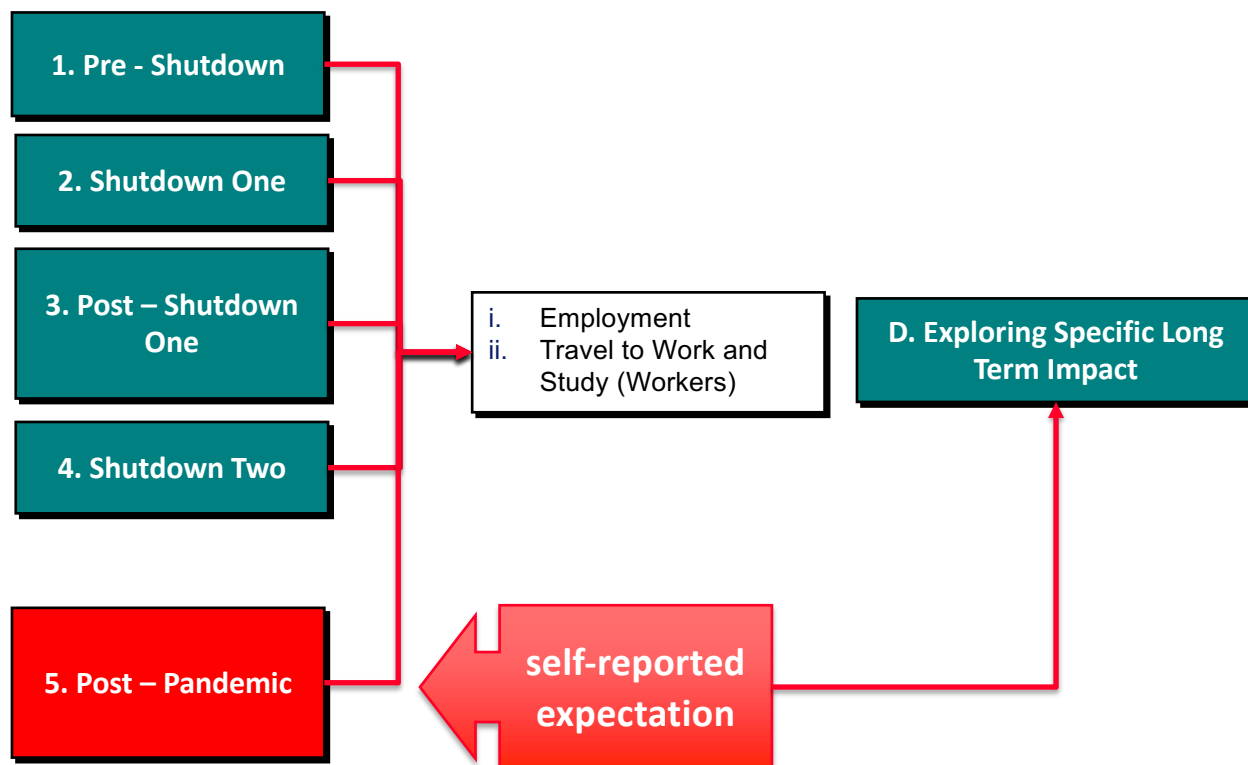
Stages of Covid-19[1]

| 1. Pre-Covid-19 Travel | 2. Shutdown ONE | 3. Post-Shutdown ONE | 4. Shutdown TWO | 5. Post-Pandemic Long Term |

Pandemic Is Occurring

Long Term focus is when the Virus is no longer contagious

Spatial Divisions

CBD
Inner
Middle
Outer

Legend
· Train Station
— Metropolitan Train Line

Location of LGA
Inner
Middle
Outer

N

0   10   20 km

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A unique research tool – a representative sample survey rather than 'convenience sampling' – results are representative of the population & adopt 'self-reported expectation' of post-covid travel

Online Panel Survey Questionnaire – Areas Covered

- 1. Pre - Shutdown
- 2. Shutdown One
- 3. Post – Shutdown One
- 4. Shutdown Two
- 5. Post – Pandemic

i. Employment
ii. Travel to Work and Study (Workers)

D. Exploring Specific Long Term Impact

self-reported expectation

Note:
(1) Quotas in a sample aim to ensure representation of the community with respect to key/influential demographic and spatial criteria
(2) Statistical accuracy minimums are a sample of 600 to achieve a 95% confidence that any result is within 4% standard error.

Sample Frame[1]

INNER MELBOURNE (n=700)				
	Annual Personal Income , Before Tax			Total
	Nil Income	Less than	Between	More than	
Age Group	Target	Target	Target	Target	Total Target
18-29	53	96	83	16	248
30 - 44	12	43	86	79	220
45 and over	12	89	62	69	232
Total	77	228	231	164	700

MIDDLE MELBOURNE (n=700)				
	Annual Personal Income , Before Tax			Total
	Target	Target	Target	Target	
Age Group	Target	Target	Target	Target	Total Target
18-35	37	73	92	36	238
36-54	17	43	87	90	237
55 and over	18	107	64	37	226
Total	72	223	243	163	701

OUTER MELBOURNE (n=700)				
	Annual Personal Income , Before Tax			Total
	Nil Income	Less than	Between	More than	
Age Group	Target	Target	Target	Target	Total Target
18-35	26	87	97	24	234
36-53	15	64	101	56	236
54 and over	18	122	65	25	230
Total	59	273	263	105	700

GRAND TOTAL				
	Annual Person Income, Before Tax			Total
	Nil Income	INCOME 1	INCOME 2	INCOME 3	
Age Group	Target	Target	Target	Target	Total Target
AGE GROUP 1	116	256	272	76	720
AGE GROUP 2	44	150	274	225	693
AGE GROUP 3	48	318	191	131	688
Total	208	724	737	432	2101

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POST COVID total JTW travel declines by 6% - mainly due to increased WFH – the scale of shift is small (6%) because WFH is small as a share of work

Post-Covid Total Travel Reduction and Links to WFH Growth

Changes in Commute Journey Volume ; Pre-Covid=100%

Relative Change in Commuter Mode (Pre-Covid=100)

- 100% (1. Pre-COVID)
- 94% (5. Post-Pandemic) — - 6%

Time Period

Changes in Work from Home; Pre-Covid=100%

Relative Change in Commuter Mode (Pre-Covid=100)

-5%

- 100% (1. Pre-COVID)
- 310% (2. Shutdown One)
- 268% (3. Post-Shutdown One)
- 297% (4. Shutdown Two)
- 175% (5. Post-Pandemic)

Work from Home

Work from Home as a Share of Total Working (2016)

Share of people who worked on census day 2016 (%)

- Work from home: 4.6%
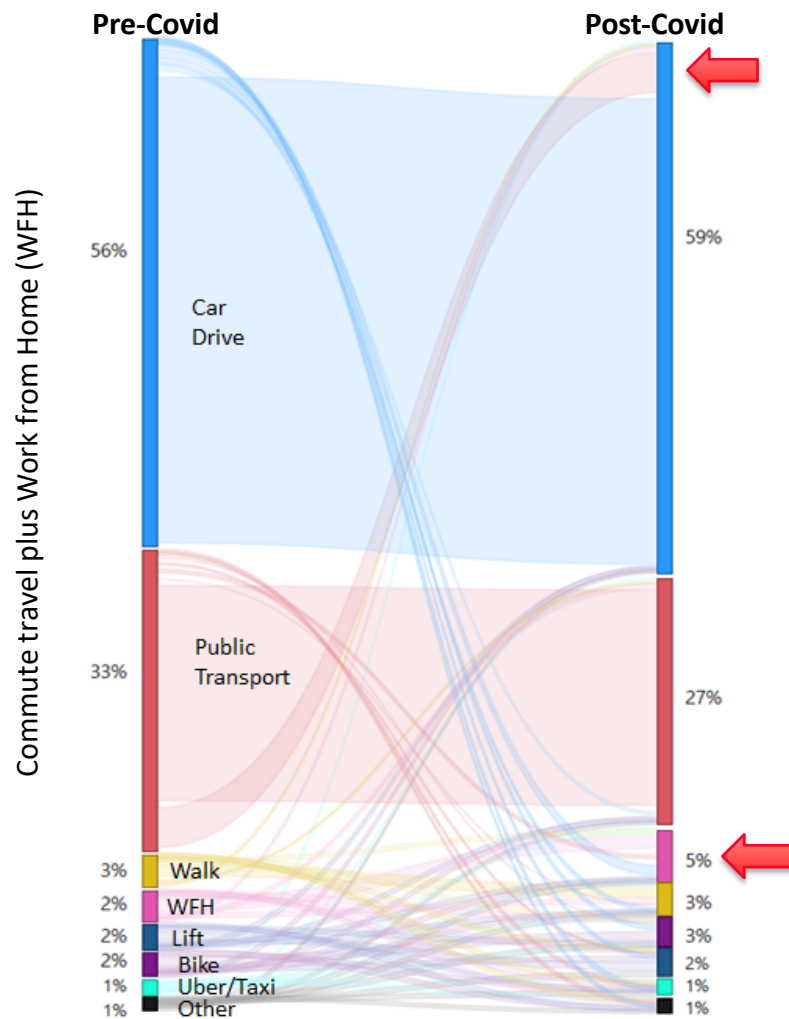- Travelled to work: 95.4%
- Total: 100.0%

Type of Work Travel

Note:
(1) Monash - August 2020 Online Panel –final sample - Self reported activity participation volume per week
(2) Weighted sample; representative of total Melbourne travel

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Post-Covid Total Mode Shift

Commute travel plus Work from Home (WFH)

Pre-Covid | Post-Covid

Car Drive — 56% → 59%
Public Transport — 33% → 27%
Walk — 3% → 3%
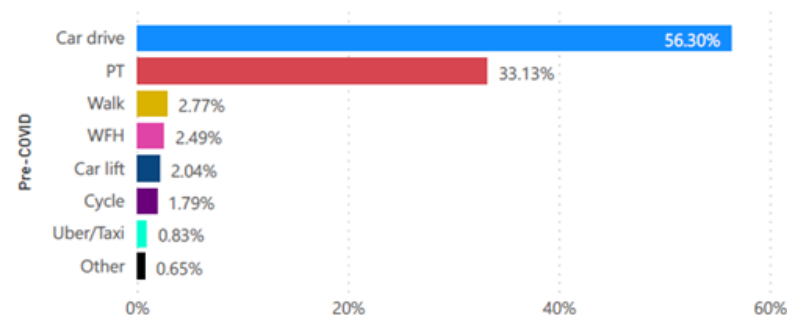WFH — 2% → 5%
Lift — 2% → 3%
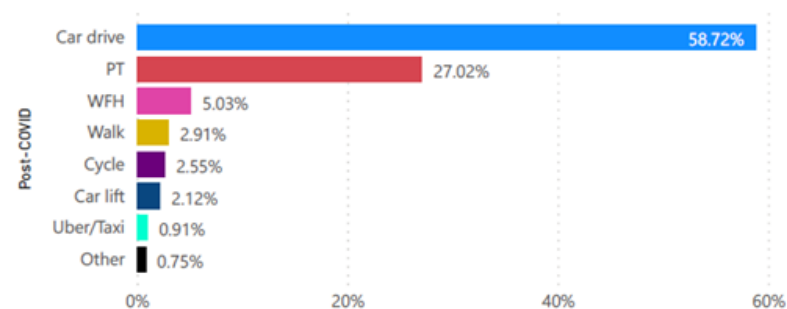Bike — 2% → 2%
Uber/Taxi — 1% → 1%
Other — 1% → 1%

Main Commute Mode- Pre-COVID and Post-COVID
All Melbourne (n = 1318)

- Cross-regional weights applied
- Only selected respondents employed / expected to be employed (FT, PT or casual) at both points in time

Main Commute Mode (% of respondents): Pre-COVID

Mode	%
Car drive	56.30%
PT	33.13%
Walk	2.77%
WFH	2.49%
Car lift	2.04%
Cycle	1.79%
Uber/Taxi	0.83%
Other	0.65%

Main Commute Mode (% of respondents): Post-COVID

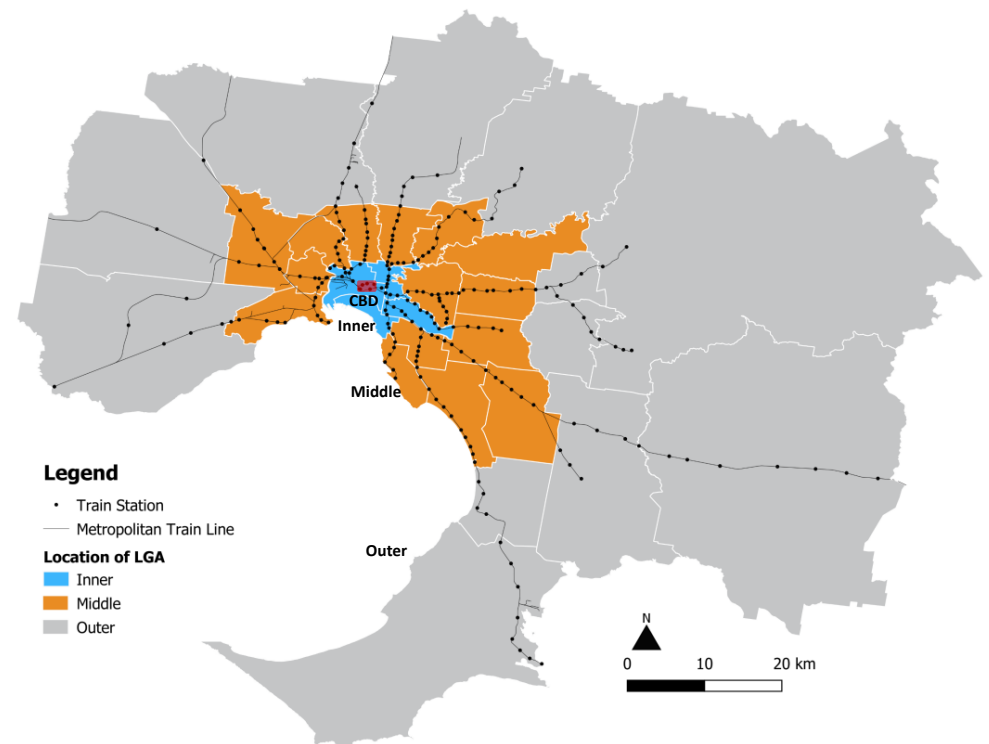| Mode	%
Car drive	58.72%
PT	27.02%
WFH	5.03%
Walk	2.91%
Cycle	2.55%
Car lift	2.12%
Uber/Taxi	0.91%
Other	0.75%

Spatial Insights - Melbourne CBD and Inner/Middle/Outer Melbourne
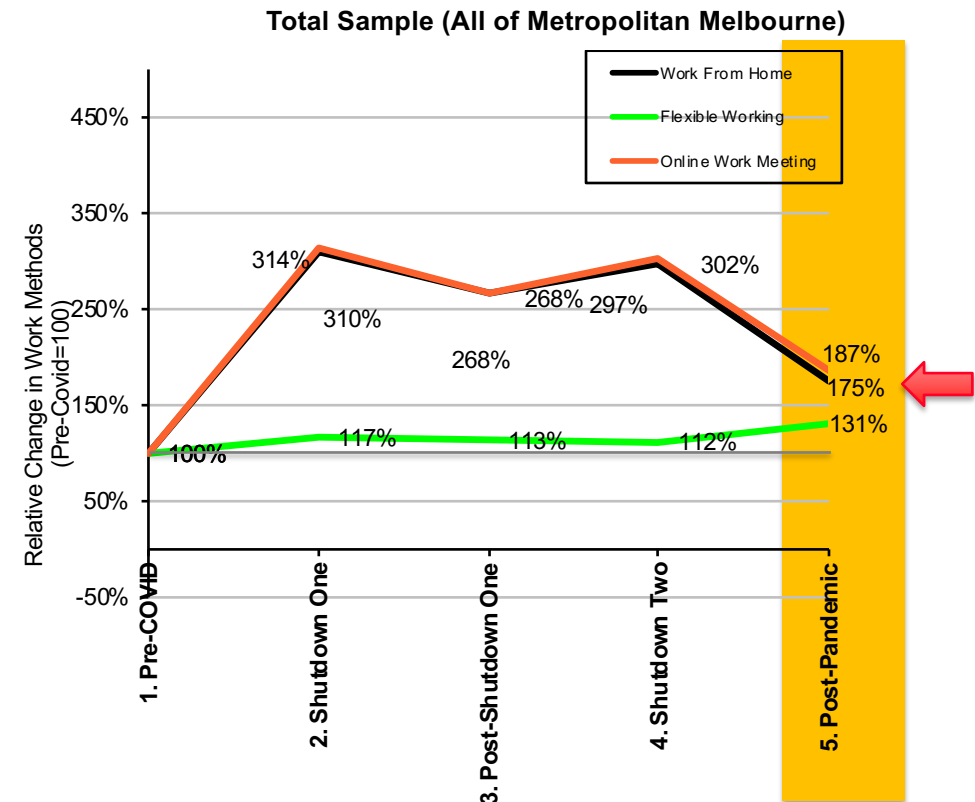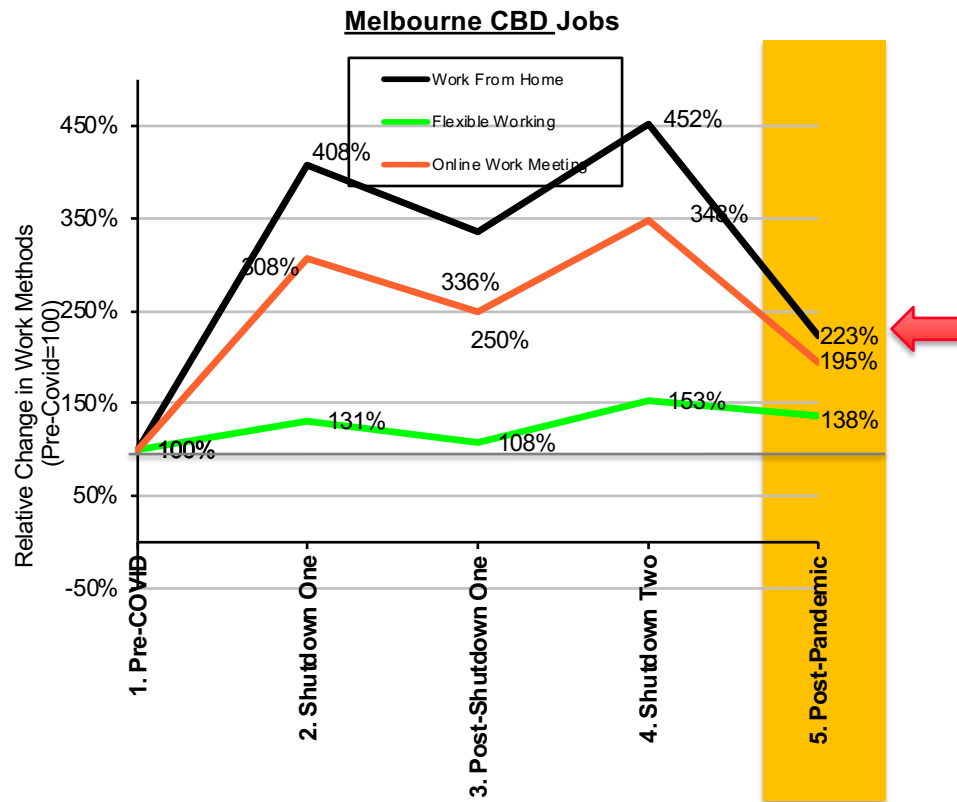
CBD Commuting

Melbourne Region

Work from Home is MUCH more common for CBD workers; Post Pandemic WFH is expected to more than double (+123%) compared to pre-covid, much higher than for Melb as a whole (+75%)

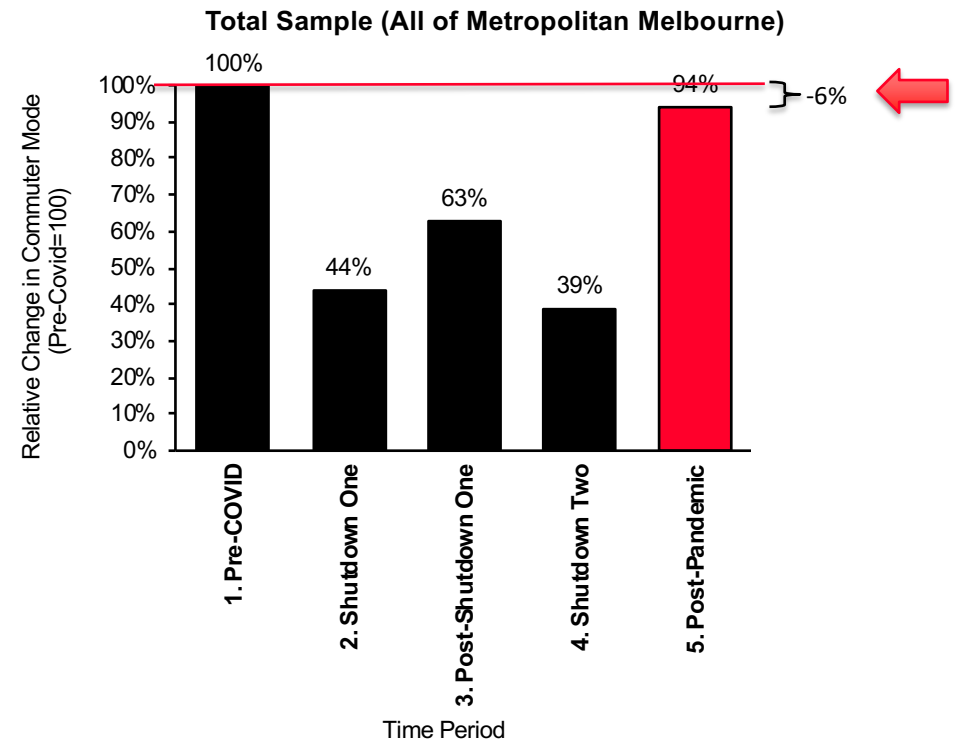**CBD Commuting** | **CBD vs Melbourne - Changes in <u>Alternative Work Methods</u> ; Pre-Covid=100%**

Melbourne CBD Jobs

Work From Home
Flexible Working
Online Work Meeting

452%
408%
348%
336%
308%
250%
223%
195%
153%
138%
131%
108%
100%

Relative Change in Work Methods (Pre-Covid=100)

1. Pre-COVID
2. Shutdown One
3. Post-Shutdown One
4. Shutdown Two
5. Post-Pandemic

Total Sample (All of Metropolitan Melbourne)

Work From Home
Flexible Working
Online Work Meeting

314%
310%
302%
297%
268%
268%
187%
175%
131%
117%
113%
112%
100%

Relative Change in Work Methods (Pre-Covid=100)

1. Pre-COVID
2. Shutdown One
3. Post-Shutdown One
4. Shutdown Two
5. Post-Pandemic

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Respondents say CBD COMMUTE will reduce more than the rest of Melbourne; Post Pandemic a 20% decline in CBD COMMUTE is self estimated - much larger than for Melbourne as a whole (6%)

CBD Commuting

CBD vs Melbourne Jobs - Changes in <u>Commute</u> Journey Volume ; Pre-Covid=100%

Melbourne CBD Jobs

100%
80%
-20%
29%
38%
26%

1. Pre-COVID
2. Shutdown One
3. Post-Shutdown One
4. Shutdown Two
5. Post-Pandemic

Time Period

Total Sample (All of Metropolitan Melbourne)

Relative Change in Commuter Mode (Pre-Covid=100)

100%
94%
-6%
44%
63%
39%

1. Pre-COVID
2. Shutdown One
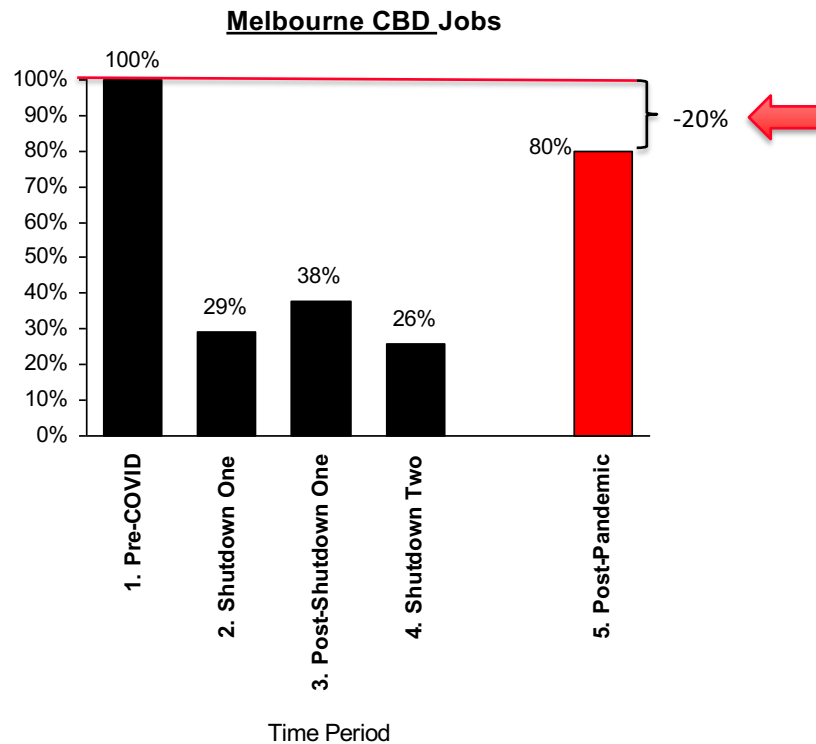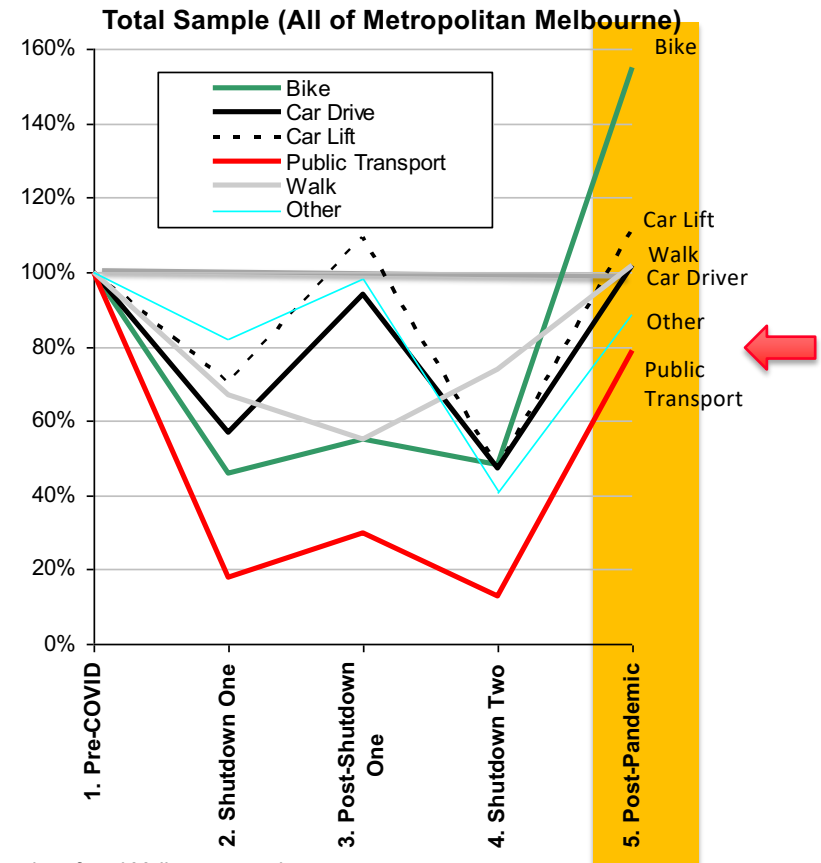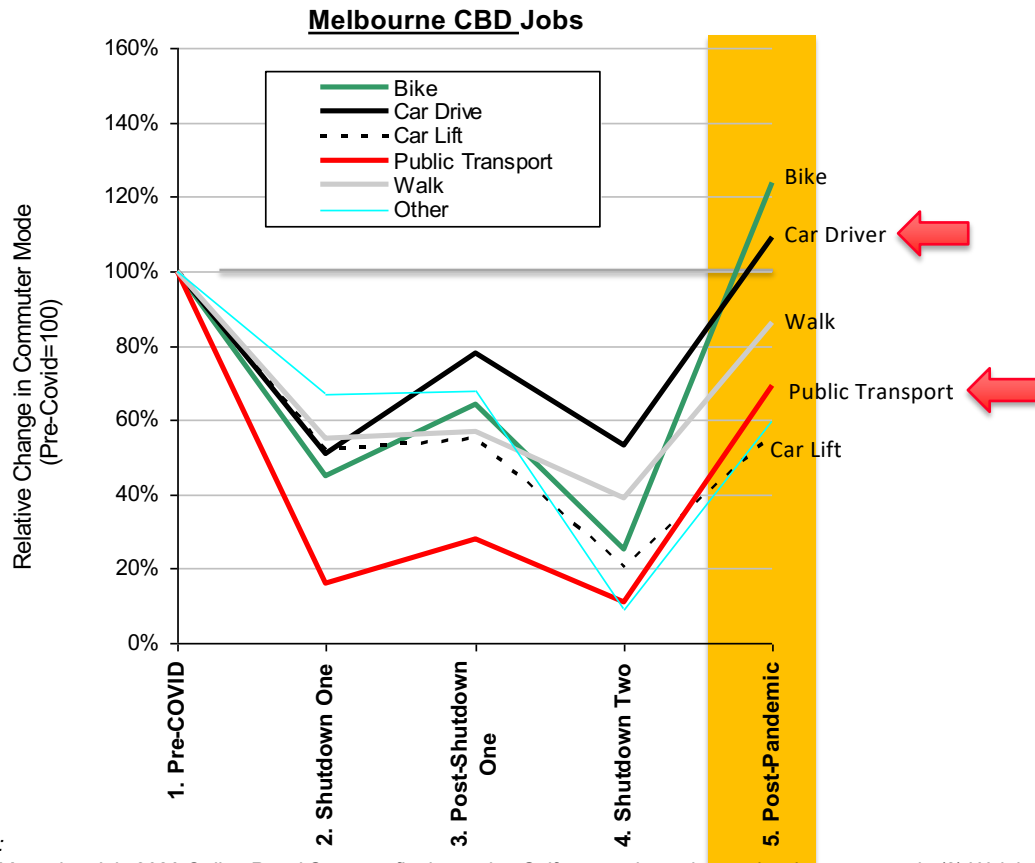3. Post-Shutdown One
4. Shutdown Two
5. Post-Pandemic

Time Period

Note:
(1) Monash - August 2020 Online Panel – final sample - Self reported CBD travel to work volume per week
(2) Weighted sample; representative of total Melbourne travel

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Post-Covid CBD COMMUTE grows for Bike (+24% Pre-Covid) & Car Driver (+9%). Car Lift (-44%) PT (-31%) & Walk (-14%) reduce. CBD modes decline more than Citywide; Car Driving growth is bigger
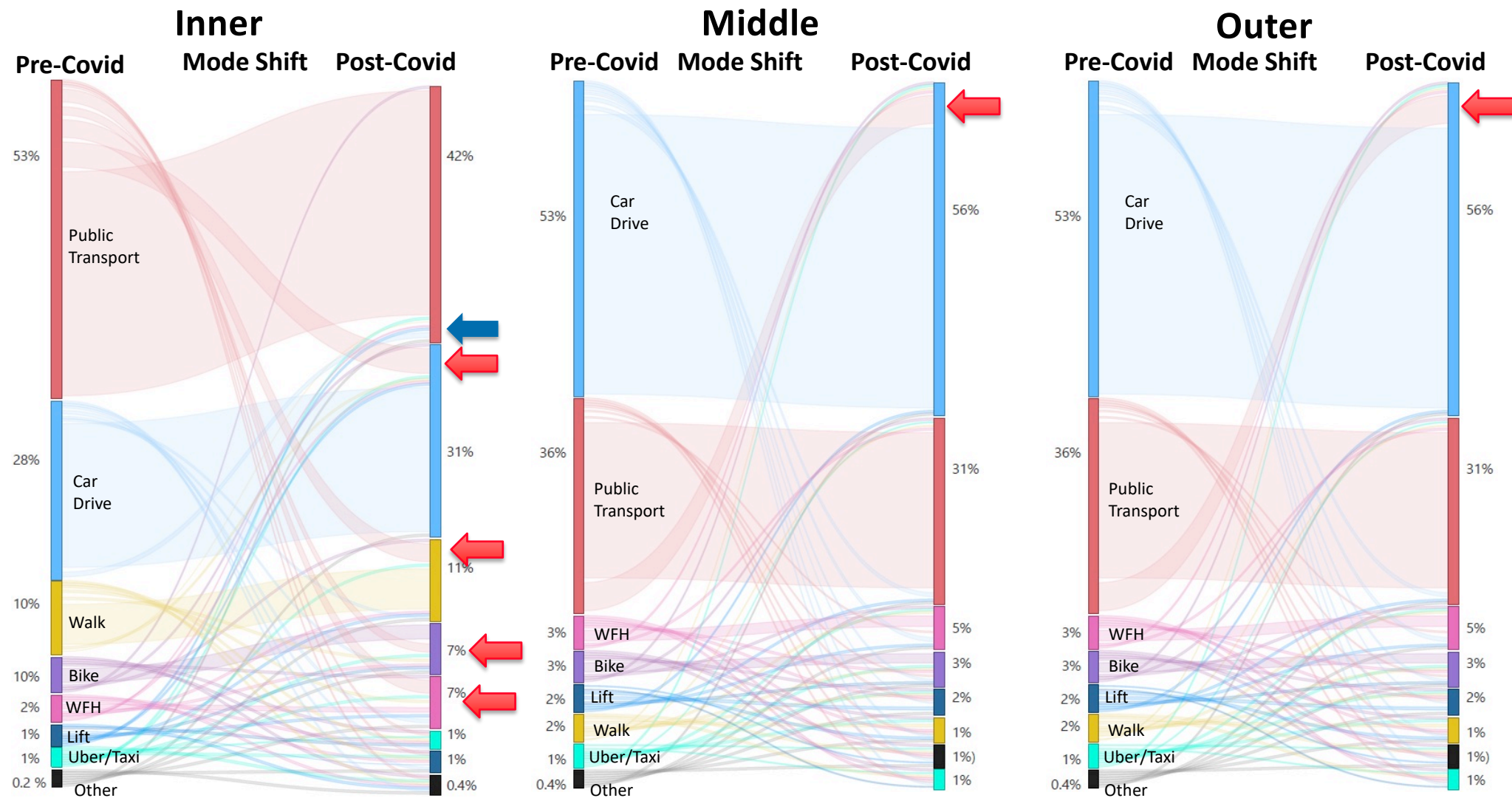
CBD Commuting | **CBD vs Melbourne Jobs - Changes in <u>Commute</u> Journey Volume <u>by Mode</u> ; Pre-Covid=100%**

Melbourne CBD Jobs

Total Sample (All of Metropolitan Melbourne)

Legend (both charts):
- Bike
- Car Drive
- Car Lift
- Public Transport
- Walk
- Other

Y-axis: Relative Change in Commuter Mode (Pre-Covid=100)

X-axis categories:
1. Pre-COVID
2. Shutdown One
3. Post-Shutdown One
4. Shutdown Two
5. Post-Pandemic

Note:

(1) Monash – July 2020 Online Panel Survey – final sample - Self reported travel to work volume per week (2) Weighted sample; representative of total Melbourne travel

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By <u>Melbourne Region</u>; there is a significantly different set of MODE SHIFT from Inner Area residents fro transit to car drive/walk and WFH; Middle/Outer shifts are much smaller

Inner

Pre-Covid   Mode Shift   Post-Covid

53%

Public Transport

28%

Car Drive

10%

Walk

10% Bike

2% WFH

1% Lift

1% Uber/Taxi

0.2 % Other

42%

31%

11%

7%

7%

1%

1%

0.4%

Middle

Pre-Covid   Mode Shift   Post-Covid

53%

Car Drive

36%

Public Transport

3% WFH

3% Bike

2% Lift

2% Walk

1% Uber/Taxi

0.4% Other

56%

31%

5%

3%

2%

1%

1%)

1%

Outer

Pre-Covid   Mode Shift   Post-Covid

53%

Car Drive

36%

Public Transport

3% WFH

3% Bike

2% Lift

2% Walk

1% Uber/Taxi

0.4% Other

56%

31%

5%

3%

2%

1%

1%)

1%

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Linked in

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W: ptrg.info
(project has a webpage on this site)

CONNECTING CITIES

PTRG is the name for researchers at Monash University who are engaged in research on public transport systems, users, planning and policy.

DISCOVER MORE

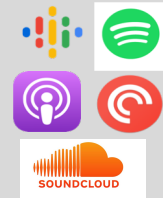| 50	24	48	18	6190	170
PROFESSIONAL RESEARCHERS	PHD RESEARCHERS	MASTERS STUDENTS	CURRENT PROJECTS	RESEARCH PAPERS	COUNTRIES
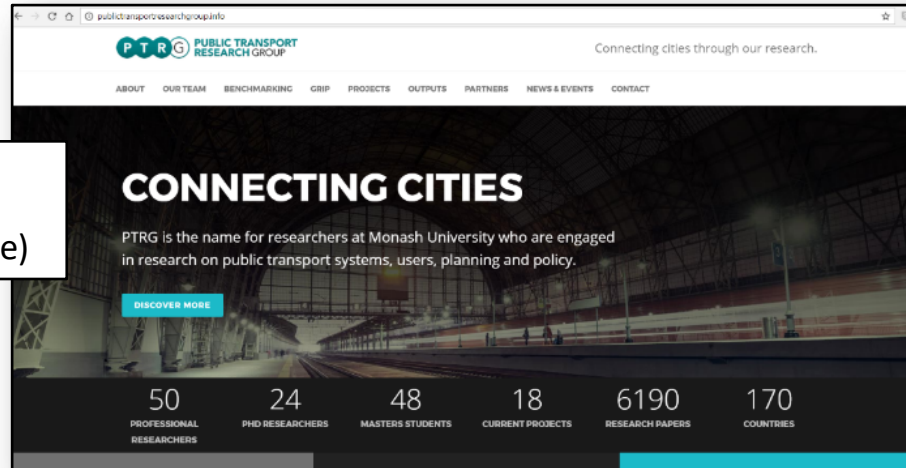
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Researching Transit

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RT5 – Long term impact of COVID-19 on Travel Behaviour

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