

# LONGER TERM IMPACTS OF COVID WORK DISRUPTIONS ON REMOTE WORKING AND TRIP SUBSTITUTION IN CAPE TOWN

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## ABSTRACT

The COVID-19 pandemic initiated an unprecedented uptake in remote work, and multiple studies have documented the impact lockdown restrictions had on travel behaviour in the short-term. The longer-term impacts of COVID work disruptions on remote working and on commuting behaviour are, however, less understood, particularly in South Africa. This paper: (1) explores the opportunities for, and extent of, remote and flexible work in Cape Town; (2) identifies changes in commuting time and distance; and (3) explores what motivates commuting choices and willingness to change. The paper draws from the results of an online employee survey distributed to selected large employer organisations in Cape Town (n=2 714). The results reveal that there is an enduring practice of remote working after the pandemic. The mean number of days worked at home per week in 2024 ranged between 0.7 and 1.7 for the different organisations who participated in the survey. More senior technical job positions were found to work from home more frequently than more junior administrative positions. COVID-19 was clearly a catalyst for the adoption of remote working adoption practices in the city, and associated trip substitution. Greatest shifts in commuting time and vehicle kilometres travelled were observed amongst private transport users. The survey suggests that many employees, across all job positions, value remote working, and would increase the practice if permitted to do so.

**Keywords:** COVID-19, Working from home, Trip substitution, Commuting behaviour.

## 1. INTRODUCTION

The COVID-19 pandemic initiated an unprecedented uptake in remote work, and multiple studies worldwide (Barrero et al., 2023; Bick et al., 2023; Shemer et al., 2022), and in South Africa (Behrens et al., 2022; Behrens et al. 2023), have documented the impact lockdown restrictions had on travel behaviour in the short-term. The longer-term impacts of COVID work disruptions on remote working, and specifically on commuting travel behaviour are, however, less understood.

Available research suggests that trends in employment and access to technology do not apply to all income groups to the same extent. Therefore, the level of employment and the sectors of the economy that people are participating in is important. During COVID-19, as South African businesses moved practices online, digital substitution of physical trips mainly occurred amongst those with pre-existing digital access. Internet use improved for those already connected, but the barriers to digital access for those who were not, remained (Partridge, 2023). In other words, the option (and assumed frequency) of remote working increased for those who had the option to do so before the pandemic, but it did

not necessarily increase the base of the population segment working from home (Rogan and Skinner 2022; Shepherd and Mohohlwane, 2021).

Within South Africa, the ability to access and use information communication technology varies significantly across different population segments. Local research has revealed that only 26% of all adults in wage employment work online in any way, with this increasing to 42% for self-employed workers (Partridge et al., 2024). Income, age and education have been found to be the key determinants driving digital access.

Drawing from a survey of office-based (mainly white-collar) employees of larger organisations based in Cape Town, the aim of this paper is to: (1) explore the opportunities for, and extent of, remote and flexible work in the city; (2) identify changes in commuting time and distance; and (3) explore what motivates commuting choices and willingness to change.

The paper is divided into six sections. The following section will describe the survey method. Sections 3, 4 and 5 will present the survey findings in relation to remote work participation, the time and distance of commuting, and choice factors in commute decisions, respectively. Section 5 will draw conclusions.

## **2. SURVEY METHOD**

### 2.1 Survey Instrument and Data Collection

The survey took the form of a self-completed questionnaire that was distributed to organisations based in Cape Town. Employees within these organisations were asked to complete the questionnaire online. Data were collected from July to September 2024.

The survey instrument was designed to examine employees' routine travel to work, potential shifts in their commuting habits, and key determinants in their travel choices. It was divided into four main sections, as follows:

- demographic / socio-economic information;
- details of work commute and modes of transport (during August 2024);
- attitudes towards commuting and working from home; and
- questions on how to improve transport in Cape Town.

### 2.2 Target Population and Sample Sizes

The target population was office-based employees (mainly white-collar workers) – who had a higher potential to Working From Home (WFH)<sup>1</sup> – in larger organisations based in Cape Town. Three large organisations agreed to participate in the survey: two from the government sector (referred to later as Organisations A and B); and one from the private sector (referred to later as Organisation C). Additional responses were also received from other employer organisations. Most respondents (60%) indicated that their employer is located in the Central Business District (CBD).

Earlier employee surveys conducted with these three organisations, in 2011 and 2013, allows a cross-sectional (as opposed to longitudinal panel) comparison of commuting patterns over a 13-year period.

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<sup>1</sup> In this paper, the terms 'working from home' and 'remote working' are used interchangeably, to refer to the practice of working from one's residence rather than commuting to a traditional office environment.

The survey resulted in 2 714 eligible respondents who completed and submitted the survey. Most respondents were women (64%). Regarding the age distribution, youth (under 25 years old) represent 3% of the sample and young adults (25-35 years old) represent 23%. The most represented group, at 45%, is middle-aged adults (36-50 years old). Those who are older than 50 years represent 29%. In terms of type of employment, 40% of the respondents work at a professional and technical level, 35% work in administration, 23% work at management level, and 3% do manual work.

Table 1 presents sample sizes for each organisation and provides an estimation of statistical representivity. While the margins of error presented in the table are low (ranging between 3.0% and 3.5%), it should be noted that, because the survey was completed online, there was as a degree of respondent self-selection (as opposed purely random selection) in sampling. Self-selection would have introduced biases in the sample that are difficult to identify. The statistical representivity of the samples is therefore likely to be less than the margins of error suggest. It should also be noted that the three organisations are not necessary representative of all employers across the city. Combined, they only account for around 2% of total employees in the city<sup>2</sup>.

**Table 1: Sample sizes of the commuter survey**

Organisation	2024 survey sample	Staff count (office-based)	Margin of error at 95% confidence level (assuming random sampling)
Organisation A	1 026	18 000	3.0%
Organisation B	874	15 000	3.2%
Organisation C	591	2 400	3.5%
Other organisations	223	5 760	-
Total	2 714	27 660	

### 3. REMOTE WORK PARTICIPATION

This section presents survey findings in relation to the opportunities for, and extent of, remote working (section 3.1); and how respondents access work activities (section 3.2).

#### 3.1 Remote and Flexible Working Opportunities

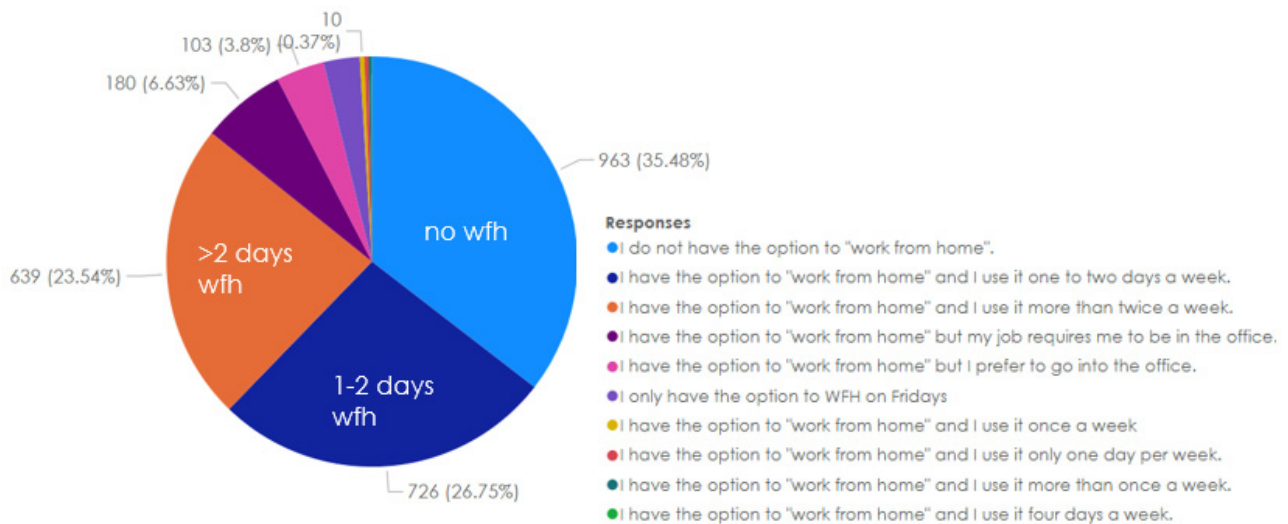
Figure 1 illustrates whether employees have the capability and opportunity to work remotely, i.e. it is possible for the job to be performed remotely, and the employee has employer permission to do so.

It was found that 36% of the respondents do not have the option to work from home. Some 30% of respondents indicated that they work from home between 1-2 days a week, followed by 24% who said that they work remotely more than two days a week. Note the nuances of the actual level of adoption, e.g. about 4% of employees opt to come into the office, despite having the option to work from home.

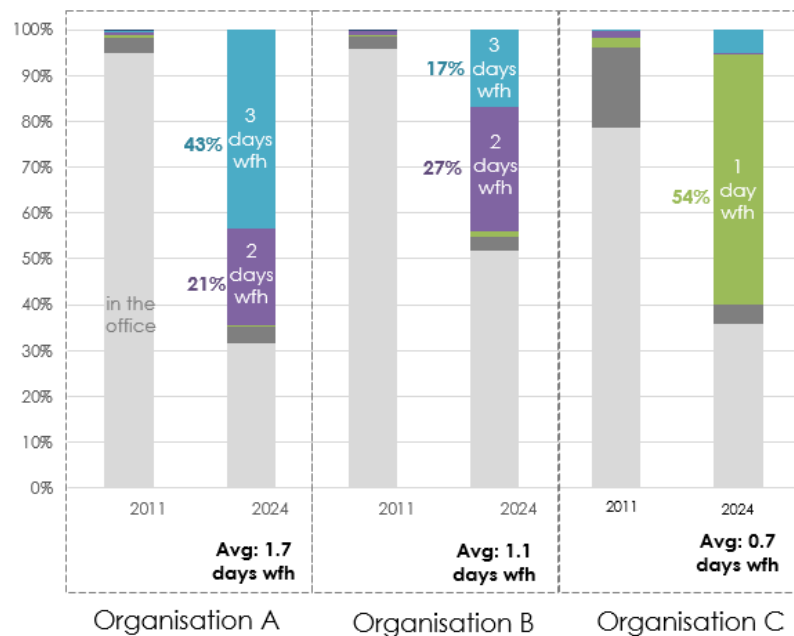
Overall, employees were found to work on average 1.2 days/week from home. Figure 2 illustrates the extent of remote working by organisation, which ranges from an average of

<sup>2</sup> It is estimated that there were 1 415 200 full-time employees in 2023 (NT 2023).

0.7 days/ week to 1.7 days/ week. Interestingly, the lower rate is for the private sector organisation whereas the two government organisations reveal higher shares of remote working.



**Figure 1: Extent of remote working (total responses)**



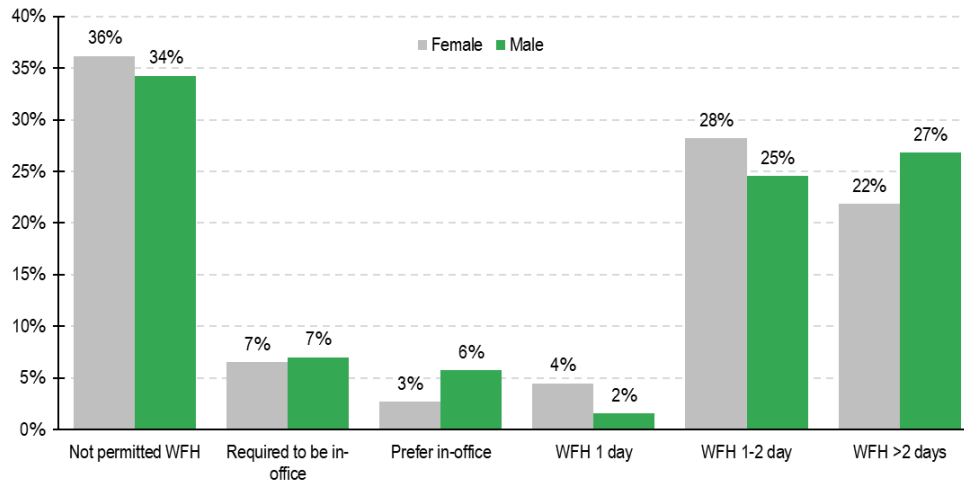
**Figure 2: Extent of remote working, by organisation**

Most of the respondents (60%) indicated that they had the option for flexible working hours at the time of the survey. Previous access to flexible working arrangements was low for the three organisations, with an average of 10% being able to make use of flexible working hours in 2011. However, as much as 35% of the survey respondents prefer to stick to fixed working hours despite having the option for flexible working hours (i.e. on the days when they go into the office, they work traditional working hours).

### 3.1.1 Differences by Gender

Figure 2 illustrates that men worked from home more often than women (27% of men worked from home more than 2 days/week compared to 22% of women). However, overall, options and preferences for WFH are fairly equal between genders.

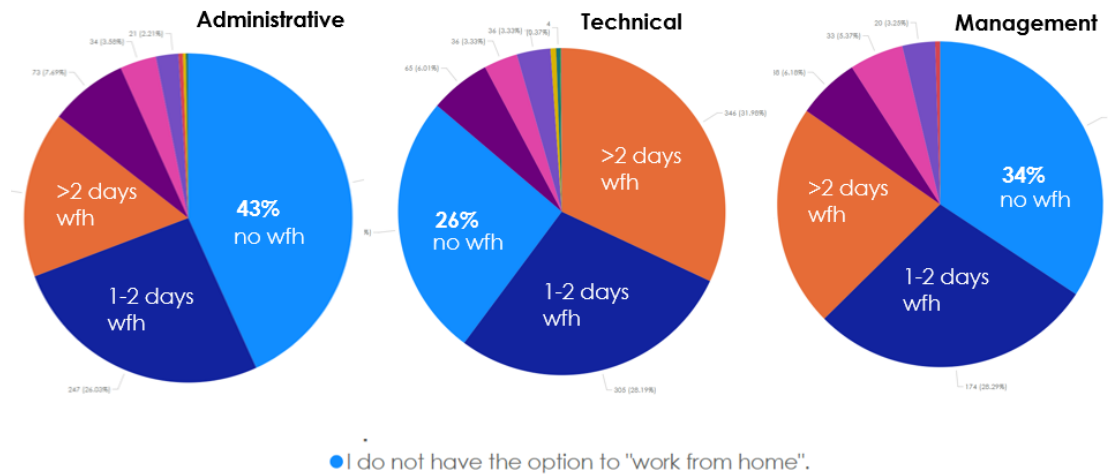
The survey also revealed that women in the organisations surveyed predominantly work in administrative jobs, which may explain the slightly higher share of female employees not permitted to work remotely. There are more men who indicated they work in the professional and technical environment, which tends to have higher flexibility in terms of remote work.



**Figure 2: Option to work from home, by gender**

### 3.1.2 Differences by Job Position and Age

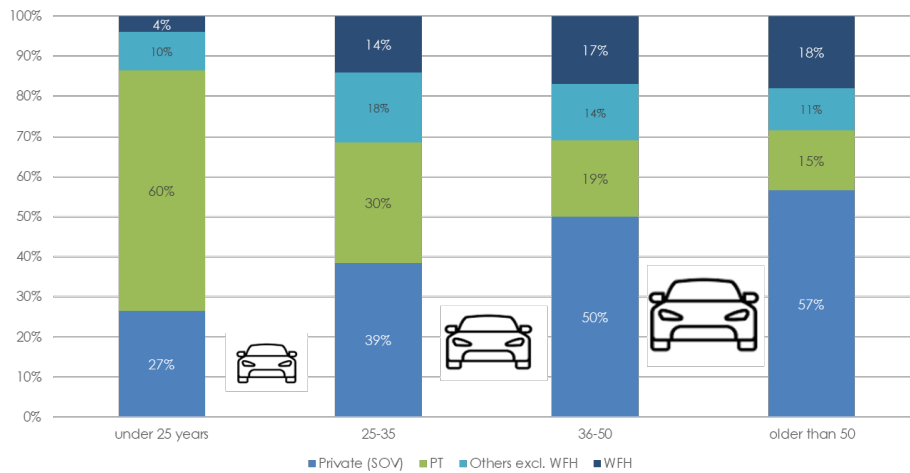
Figure 3 illustrates that technical staff have the highest level of WFH with close to 60% working from home at least 2 days/week. Interestingly, employees at management level recorded a higher rate of 'prefer to go into the office'.



**Figure 3: Extent of remote working, by job position**

The survey further revealed a relationship between private transport usage and age (with age linked to income levels and job positions). Fifty percent of the employees between 36-50 years, and close to 60% of people over 50 years old, indicated that they commute by private car. The proportion of people working remotely also increases with age, with more senior positions working from home more often (see Figure 4).

This corresponds with the work patterns apparent through one of the organisation's staff and attendance data, which revealed that staff with higher qualifications (managers, professionals, and specialised employees) have the highest level (opportunity) of remote working. As expected, and due to the nature of their work, employees working lower entry-type jobs are required to be onsite.



**Figure 4: Access split, by age group**

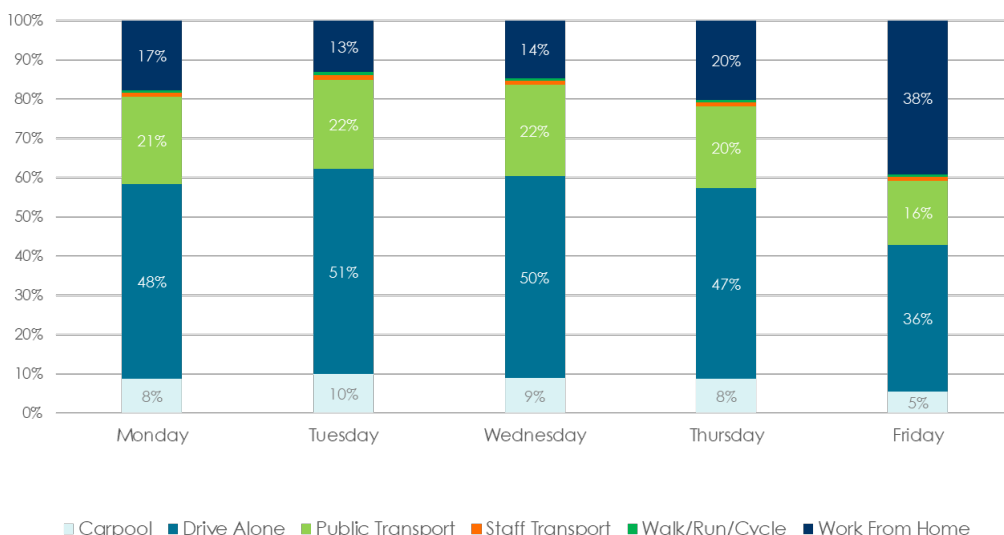
Remote working was found to be higher in the CBD (at 60%) compared to other areas in the city. The exact reasons are unknown, but a plausible hypothesis might be that travelling into the CBD takes on average 25% longer than accessing other business nodes.

### 3.2 Access Splits

The term ‘access splits’ is used, rather than ‘modal splits, to enable analysis to be inclusive of both physical and digital access.

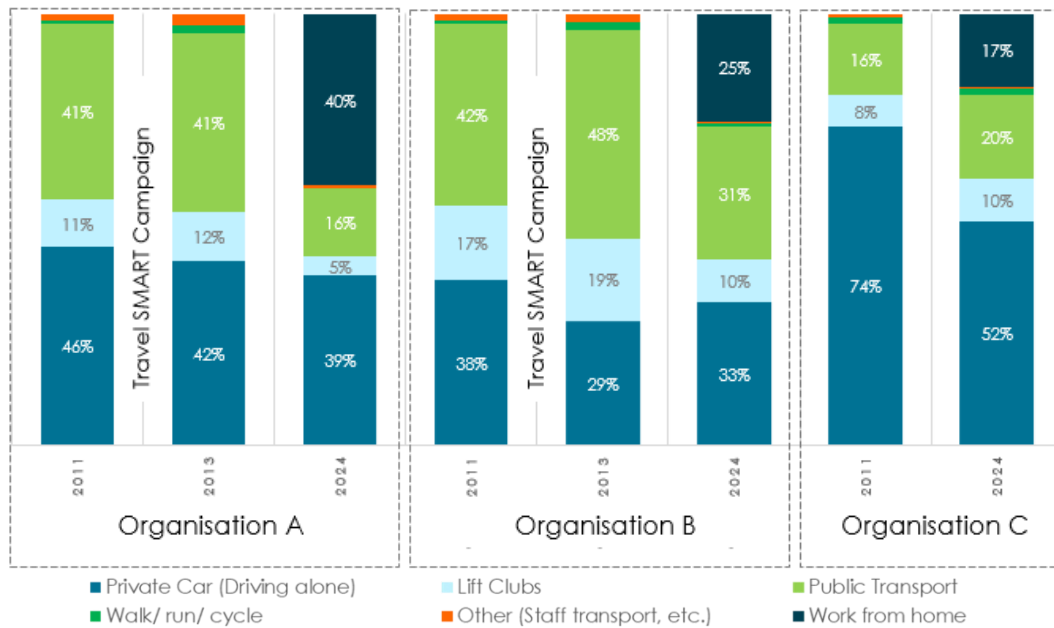
The survey revealed greater private car use, with 50% of employees driving to work. Also interesting to note is that respondents indicated that parking availability is not an issue for 70% of Single Occupancy Vehicle (SOV) drivers across the survey sample. The overall public transport share is 22% across the sample (of which GABS buses carry 35%, minibus-taxis 35%, MyCiTi buses 18%, and Metrorail trains 13%).

Most respondents indicated they use the same mode per normal weekday (95%). The variation in access share across the week (see Figure 5) is mainly due to the uptake in remote working policies. The highest share of WFH is evident on a Friday with 38%, followed by Thursday with 20%. Monday to Wednesday show lower WFH activity, ranging from 13% to 17%.



**Figure 5: Access split, by weekday**

Comparison of cross-sectional survey data indicates that WFH practices prior to the pandemic involved very few staff in each organisation. In the few cases permitted, this was on an *ad-hoc* basis sanctioned by line managers. A significant shift in employer mindset during the pandemic was the acceptance of an emerging WFH practice. Figure 6 illustrates the increase of WFH share across all organisations, but specifically Organisation A (on average 40% of the employees work remotely).



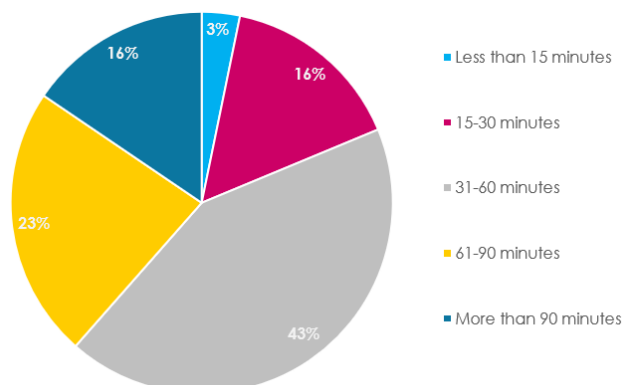
**Figure 6: Access split, by organisation (2011, 2013 and 2024)**

#### 4. COMMUTING TIME AND DISTANCE

This section presents survey findings in relation to: commute time (section 4.1); and estimated vehicle kilometres travelled (section 4.2).

##### 4.1 Commute Time

Figure 7 presents a distribution of morning peak commute times. The average commute time across the sample was 50 minutes. Average commute time for private transport users was 45 minutes, which is significantly lower than the average commute time for public transport users which was found to be 68 minutes. More than 85% of all respondents indicated they are not willing to spend more time travelling to work. There was no difference found between commuters who have the option to WFH versus those who do not WFH.



**Figure 7: Travel times in the morning peak period (2024)**

Note that 57% of respondents who indicated that they travel more than 2 hours in the morning peak period were public transport users. As indicated earlier, it was found that public transport users have fewer options to work from home than private transport users. For those travelling longer than 2 hours in the morning, 56% of public transport users did not have the option to WFH compared to 32% of private transport users.

A correlation was found between commute distance and WFH. The further people live away from their place of work, the higher is their WFH frequency (see Table 2).

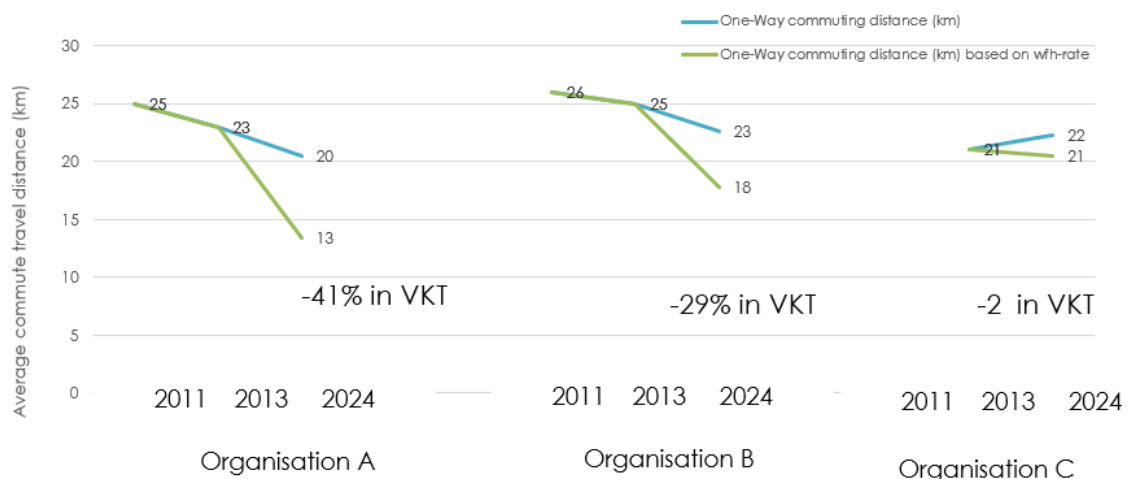
**Table 2: Travel distance by WFH frequency**

	Average commute distance (km)	Those that:			
		Have the option to WFH more than 2 days/week (km)	1-2 WFH (km)	Prefer to work from the office (km)	Do not have the WFH-option
Total sample	20.4	23.2	22.2	16.8	19.4
Organisation A	20.5	22.0	21.8	16.0	19.0
Organisation B	22.6	28.3	26.0	21.2	21.4
Organisation C	22.3	27.7	20.9	14.9	21.7

#### 4.2 Vehicle Kilometres Travelled

As indicated in the previous section, a hybrid model of WFH is common practice in the surveyed organisations, with part of the week worked at home and part in the employers' workplace with associated travel reduction. The estimated reduction in Vehicle Kilometres Travelled (VKT) is depicted in Figure 8.

A significant decrease for Organisation A is evident with a reduction of 41% (average VKT of 13 km, average 1.7 days WFH). Organisation B, with a WFH rate of 1.1 days a week, shows a reduction of close to 30%. Organisation C reflects a minimal reduction in distance travelled (-2%, WFH rate 0.7 days/week). Note that this analysis focuses on changes in commute patterns. International research suggests that WFH has led to changes in the daily use of time, with substantial variability in activities, which could off-set the benefit from remote working practices (Curtis et al. 2024).



**Figure 8: Change in average daily commute distance (considering WFH rate), per organisation**

In absolute terms, assuming a SOV share of 65% (based on the access split of the total survey sample), the total number of SOV trips substituted through digital access amounts to about 5 000 trips in the morning peak. The three organisations only account for about 2% of employees city-wide. So the overall potential to reduce trip generation through remote working is significant. In comparison, park-and-ride would replace around 3 500 trips into the CBD in the morning peak (based on existing parking capacity at existing park-and-ride facilities in the city).

## 5. CHOICE FACTORS

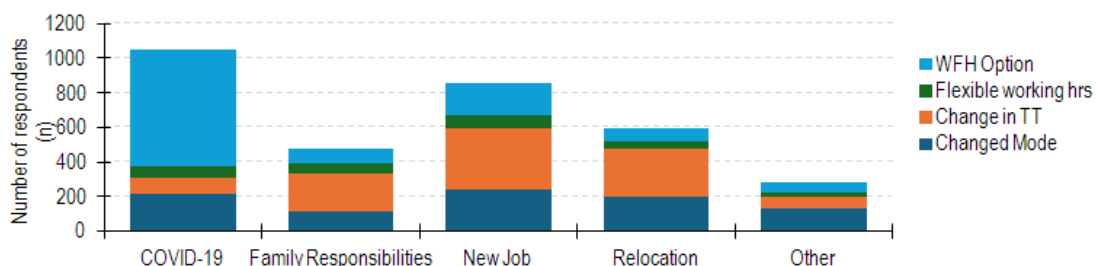
This section presents survey findings in relation to: what drives changes in commuting behaviour (section 5.1); and what motivates choices and willingness to change (section 5.2).

### 5.1 Drivers of Commute Behaviour Change

Considering the way people travelled five years ago (2019) and comparing this to their 2024 routine, the majority indicated no change (66%) in their way of commuting. Close to 40% of respondents were introduced to working from home for the first time, with the majority (63%) indicating that this was due to the pandemic. Respondents also indicated that they have experienced a change in travel time and changed their transport mode (further questions into the details thereof were not included unfortunately).

The extent of working more flexible hours is relatively small, indicating that employees already had flexible working arrangements before the pandemic (see Section 3.1).

It is clear that general changes in commute travelling were caused by COVID-19 disruptions (see Figure 9). A large segment of the sample (39%) responded that their commute had changed due to COVID travel restrictions and policy responses. Other changes in travel can be attributed to family responsibilities (18%), changed jobs (16%), and relocation (11%).

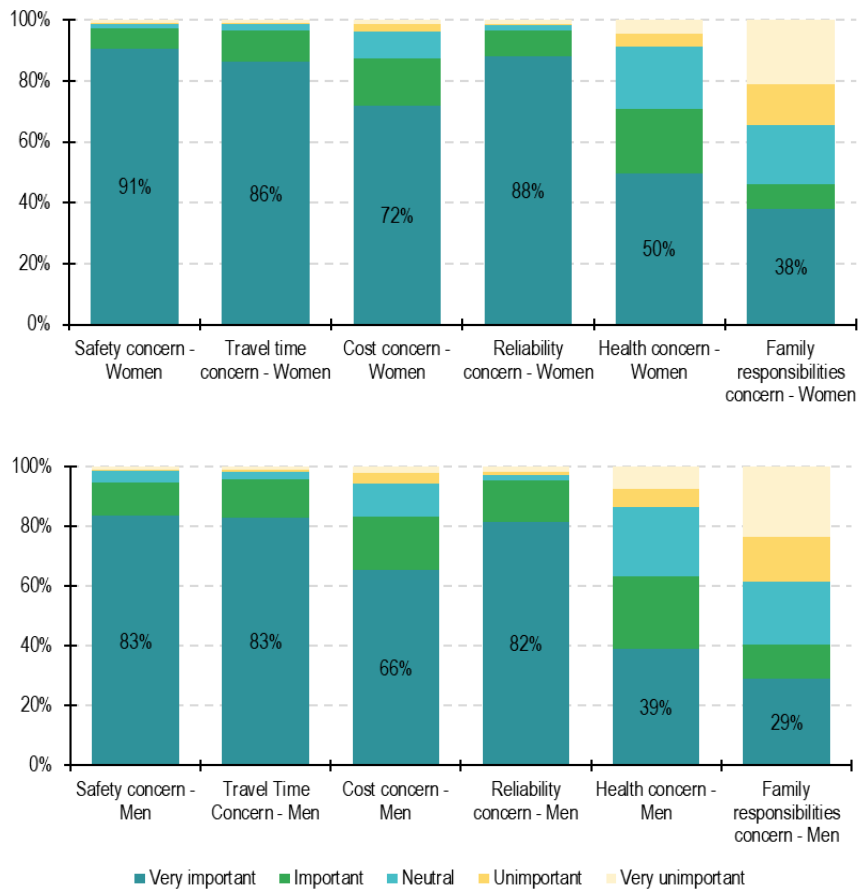


**Figure 9: Drivers that changed travel patterns**

### 5.2 Motivations for Choice and Change

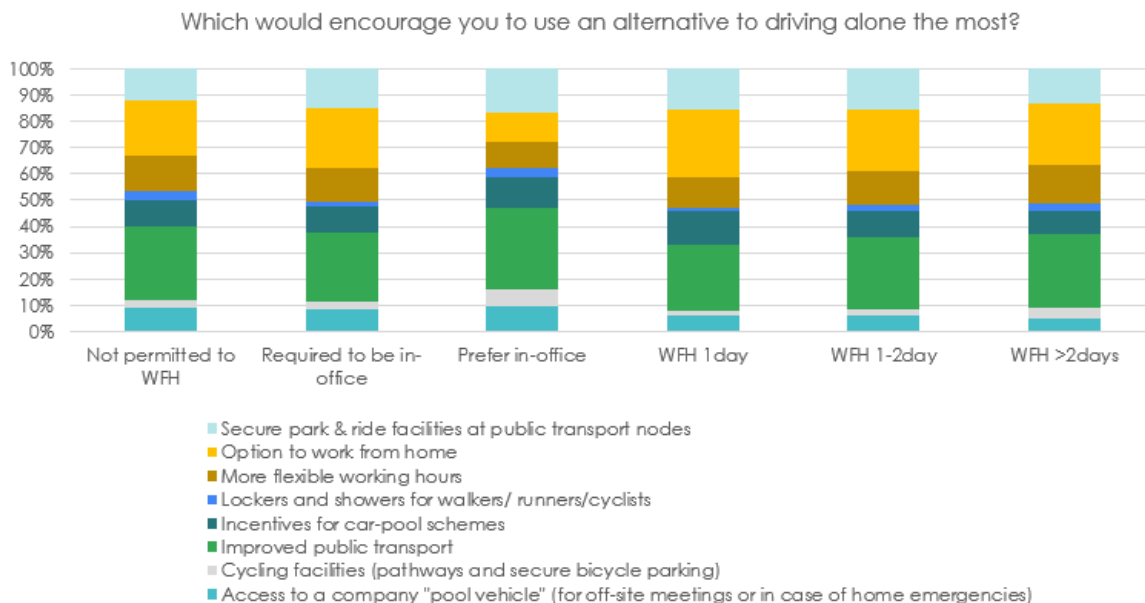
Safety and security (85%), reliability (83%), and travel time (82%) were found to be the strongest determinants of access choice. Gender-based differences in choice motivations are presented in Figure 10. Women respondents reported greater concern with health (50% versus 39%), family responsibilities (38% vs 29%), and safety (91% vs 83%) factors than men.

Considering main mode choice, the cost of travel was reported to be of higher importance to those who use public transport (84% indicated cost is very important) and those who carpool (81% indicated cost to be very important), compared to those who drive alone to work (64%).



**Figure 10: Key factors impacting transport choice for women (top) and men (bottom)**

Respondents were asked, if the City wanted to encourage commuters to use more sustainable ways of travel, what would encourage them to use an alternative to SOV private car use. Figure 11 illustrates that even respondents who frequently work remotely still desire more WFH opportunities (orange segment). Remote and flexible work were identified more often than public transport service improvement in all respondent categories except for those who prefer to work in the office. No differences were found across age cohorts.



**Figure 11: Willingness to consider an alternative mode, by WFH frequency**

## 6. CONCLUSION

This paper set out to explore the enduring prevalence of remote work in Cape Town, identify changes in commuting time and distance, and explore commuting choice factors.

The survey findings revealed an enduring shift in the proportion of employees working remotely for at least part of the week, compared to pre-pandemic levels. The proportion of employees who have the option to WFH remained relatively high in 2024. About 30% indicated that they work from home between 1-2 days a week, followed by 24% who reported that they work remotely more than two days a week. COVID-19 was clearly a catalyst for the adoption of remote working adoption practices, and the subsequent substitution of commute trips. Shifts in commuting behaviour were observed across both private and public transport users, but more so for private transport users. This resulted in reduced work-related VKT by up to 41% in one of the employer organisations surveyed. While many companies are re-evaluating the productivity, collaboration, and operational efficiency associated with remote working (see, for instance, Career Junction 2024 and Libera 2025), the survey suggests that in Cape Town many employees, across all job positions, value remote working.

Further research is required to explore whether the increased generation of non-commuting trips (e.g. recreation and social trip purposes) observed elsewhere (e.g., in the United States by Obeid et al. 2024, in Portugal by Colaço et al. 2024, and in Switzerland by Wöhner 2023) has occurred in Cape Town as well.

Overall, it can be concluded that WFH can positively contribute to work trip reduction, highlighting its value as a travel demand management measure. These insights will inform an update of Cape Town's travel demand management strategy.

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