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Investigating ‘anywhere working’ as a mechanism for alleviating traffic congestion in smart cities

John L. Hopkins^a, Judith McKay

Department of Business Technology and Entrepreneurship, Swinburne University of Technology, Hawthorn, VIC 3122, Australia

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ABSTRACT

Despite the many potential economic, social and environmental benefits, the adoption rates for anywhere working in Australia remain very low. This explorative study aims to gain a deeper understanding as to why this is, by examining the working arrangements and commuting habits of a sample of employees from Melbourne’s largest city-based firms, in order to identify current organisational policies relating to anywhere working, commuter transport modes/usage/timings, attitudes toward anywhere working, the percentage of time employees spent engaged in anywhere working, the location(s) where they typically performed anywhere working, and the benefits, constraints/concerns, perceived productivity, and equipment needed to effectively work in a location outside of a traditional office space. These findings offer a valuable new insight into this phenomenon, as a potential mechanism for reducing traffic in our cities of the future, by leveraging ICT technologies to reduce the overall need for people movement.

1. Introduction

One of the most significant challenges facing the future of our cities is that of traffic congestion. The use of motor vehicles is rapidly growing, and the consequences are contributing to several serious local, regional, and atmospheric issues, which have an economic, social and environmental impact. A number of studies confirm that traffic congestion is steadily worsening in most cities around the world, meaning that these attendant undesirable outcomes are likewise growing in magnitude.

Slow travel speeds, less predictable journeys and unexpected halts effect the health of commuters, delay businesses and result in financial losses. Reduced traffic speeds cause vehicles to travel at sub-optimal speeds, resulting in the consumption of excessive levels of fuel, which leads to increased air pollution, carbon dioxide, and greenhouse gas emissions, and potentially contributing to global warming. Empirical evidence suggests that congestion can incite stress, aggression, anger and unsafe behaviours in drivers (Deffenbacher et al., 2003; Emo et al., 2016; Hennessy and Wiesenthal, 1999), and that drivers are the most prone to arrive late for work of all commuter groups, and the least likely to arrive feeling ‘energised’ (Loong et al., 2017). Congestion is believed to have a detrimental effect on the work-life balance of commuters, which can lead to increased levels of stress at both work and home, and result in serious physical and physiological health issues for themselves

and their families, potentially triggering serious behavioural changes (Haider et al., 2013; Kostlosky et al., 2013).

The primary causes of traffic congestion are a lack of capacity (May, 1990), increases in demand for road use without sufficient planning for road expansion (Cole, 2005), and a lack of appropriate alternative modes of travel. As the global population increases and urbanisation (the number of people choosing to live in cities) continues to rise — 54% of the world’s population lives in urban areas today and the number is expected to increase by 150%, to 6 billion, by 2045, leading to an additional 2 billion urban residents (WorldBank, 2017) — congestion will worsen. Making cities *smarter* is now a growing strategy, aimed at ‘mitigating the problems generated by the urban population growth and rapid urbanization’ (Chourabi et al., 2012, p. 2289), to improve the future physical and social infrastructure of cities, and provide more efficient services to its citizens (Marsal-Llacuna et al., 2015). It is important to recognise the convergence of globalization and urbanisation with industrialisation, and the characteristics of future working practices, as the three key drivers of human civilization (J. H. Lee et al., 2014).

An extensive study on global congestion, which utilizes satellite navigation data for urban areas with a population above 1 million in the United States, Western Europe, Canada, Australia and New Zealand, identified Australia as having the second worst traffic congestion in the higher income world, with all five of Australia’s largest urban areas

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Transitioning into anywhere working as a system for accelerating the growth of Ho Chi Minh city into a more livable city

Akbari^{a,*}, John L. Hopkins^b

^aSmart (SBM), RMIT University, 702 Nguyen Van Linh, Tan Phong Ward, District 7, Ho Chi Minh City, 70000, Viet Nam
^bEcology and Entrepreneurship, Swinburne University of Technology, Hawthorn, Melbourne, VIC 3122, Australia

ABSTRACT

As urbanization increases traffic congestion, major transformative changes must be explored to ensure that cities like Ho Chi Minh City (HCMC) transition into equitable, sustainable, and livable cities. This study aims to investigate anywhere working, the practice of performing work tasks remotely instead of from a traditional ‘fixed’ office location, as a possible mechanism for reducing traffic congestion and pollution. The research adopts a descriptive survey method to collect primary empirical data on the current working arrangements and commuting habits of HCMC workers, to identify organizational policies relating to anywhere working, commuter transport modes/usage/timings, attitudes toward anywhere working, and the benefits, constraints/concerns, and perceived productivity for working in locations outside of a traditional office space. The results indicated that, while 74% of HCMC commuters would like to engage in anywhere working practices, only 41% were permitted to do so. This low adoption rate was not necessarily due to the nature of the work tasks themselves, but due to managerial decisions of their employers, and the desire to engage in anywhere working was found to be strongest among those who have already had the first-hand experience of working remotely. HCMC is predicted to be the second fast-growing economy in Asia by 2021 (Tu, 2017) and the findings from this research provide timely and valuable new insights into this phenomenon, as a potential mechanism for assisting the cities of the future develop more equitable, sustainable, and livable conditions through the use of modern Information and Communication Technologies (ICTs).

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Improving globally due to the growth and progress, and have different carbon emission circumstances (Shen et al., 2018).

Urbanization is one of the important components of human civilization (Zhang et al., 2016), where social interaction and economic transactions are the fundamental motivations for the existence of these cities (Huang et al., 2016a); approximately 54% of the world’s population now resides in urbanized areas. Seventy-six primary metropolitan cities with more than 5 million inhabitants contain 0.8 billion of the world’s population (United Nations, 2014). It is estimated that by 2030, sixty percent of the global population will reside in urban areas (Robert, 2005). The formidable increase in urban population fosters major concerns regarding the quality of life, ecosystem services, security of urban ecosystems, and infrastructure (Daily and Ellison, 2012; F. Li et al., 2017).

Numerous studies around the world have linked urbanization with the increase in traffic congestion in major cities, particularly in emerging and developing countries, where it affects social

address: akbari@yahoo.com (M. Akbari).

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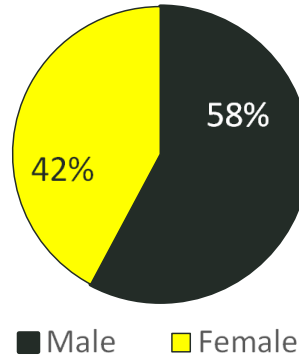
2016 SURVEY

Participants

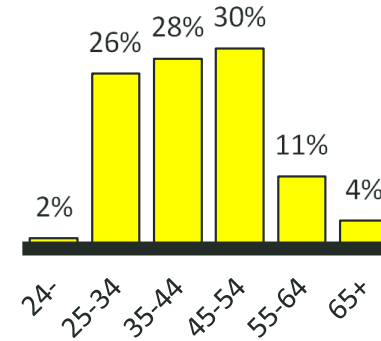


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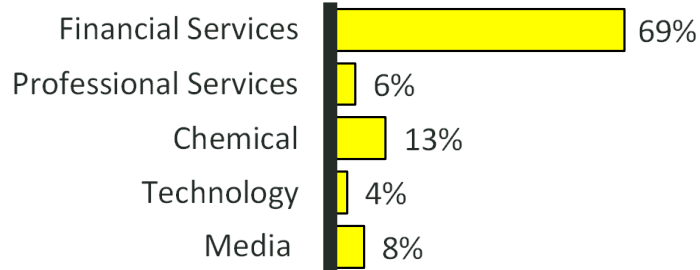
Gender



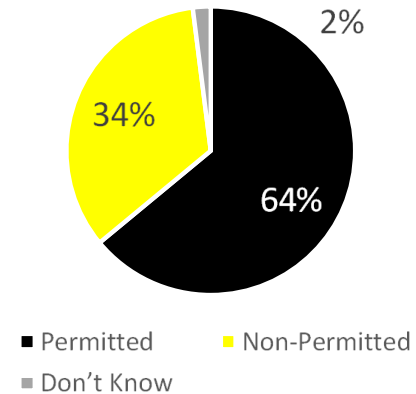
Age



Sector

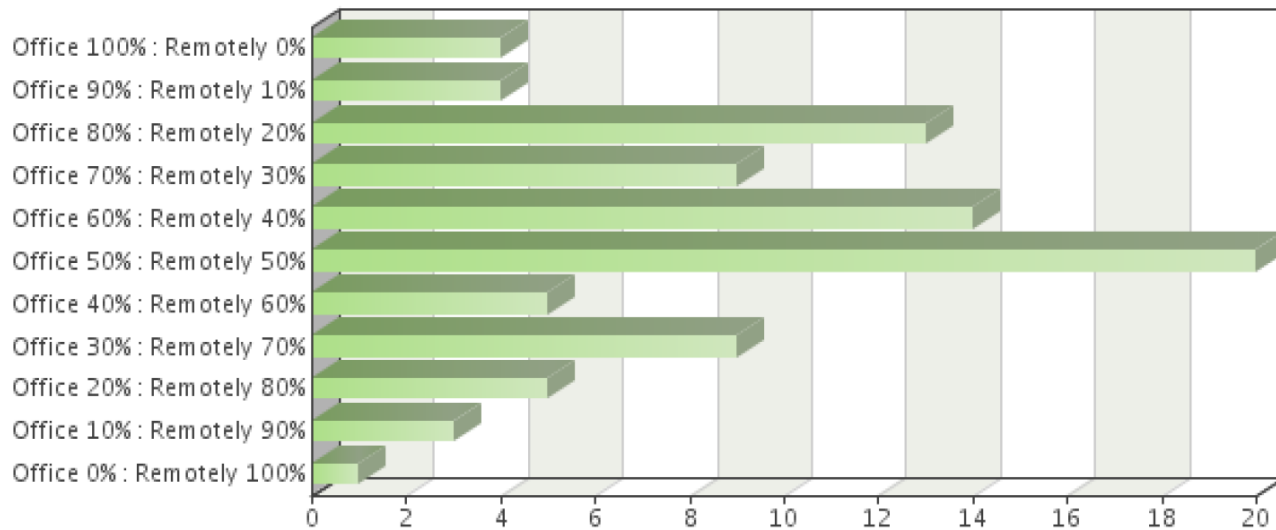


Work Remotely

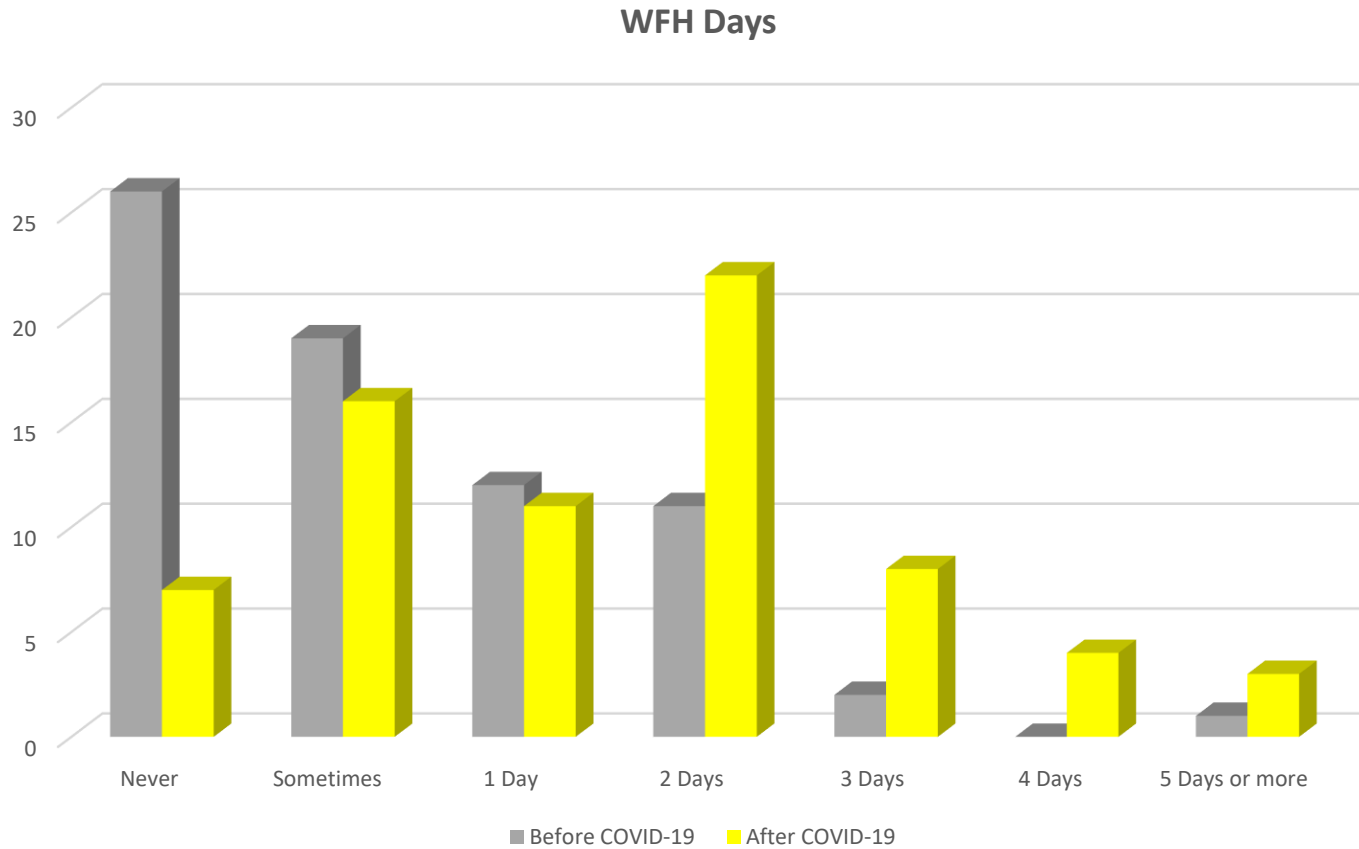


2016 SURVEY

In an ideal world, for the perfect working balance, what proportion of the time would you like to spend in your current office vs working from home or another remote location?

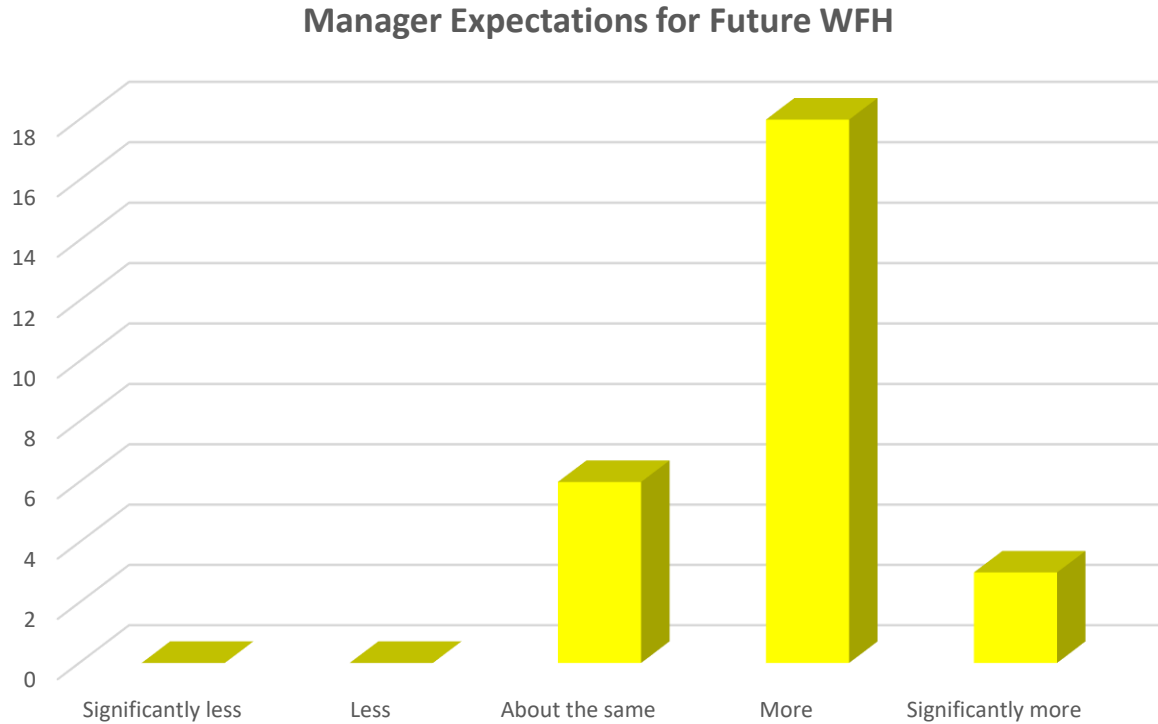


NEW RESEARCH – APRIL 2020



https://swinuw.au1.qualtrics.com/jfe/form/SV_ahJNqZRJ5IxSowB

NEW RESEARCH – APRIL 2020



77% of managers think their employees will work from home more often, after COVID-19, than they did before COVID-19

https://swinuw.au1.qualtrics.com/jfe/form/SV_ahJNqZRJ5IxSowB

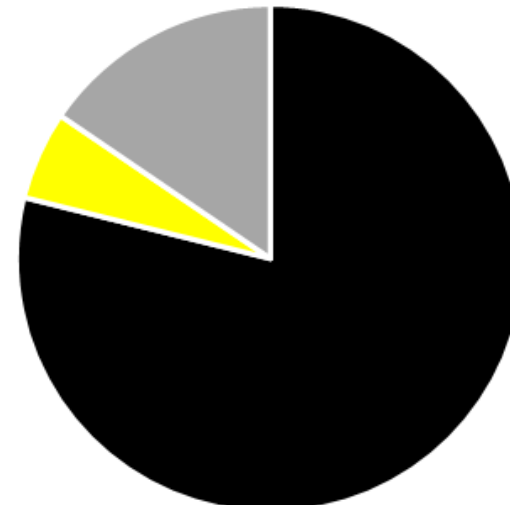
NEW RESEARCH – APRIL 2020

WFH Policy (before COVID-19)



■ Yes ■ No ■ Don't know

WFH Policy (Now)

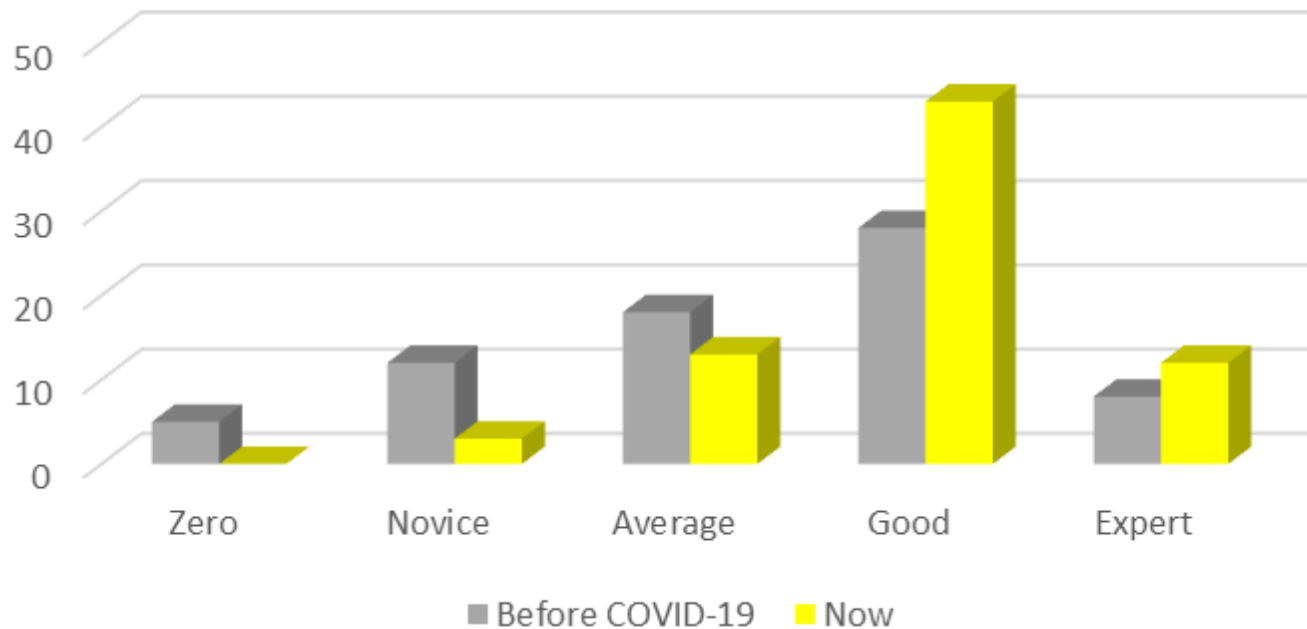


■ Yes ■ No ■ Don't know

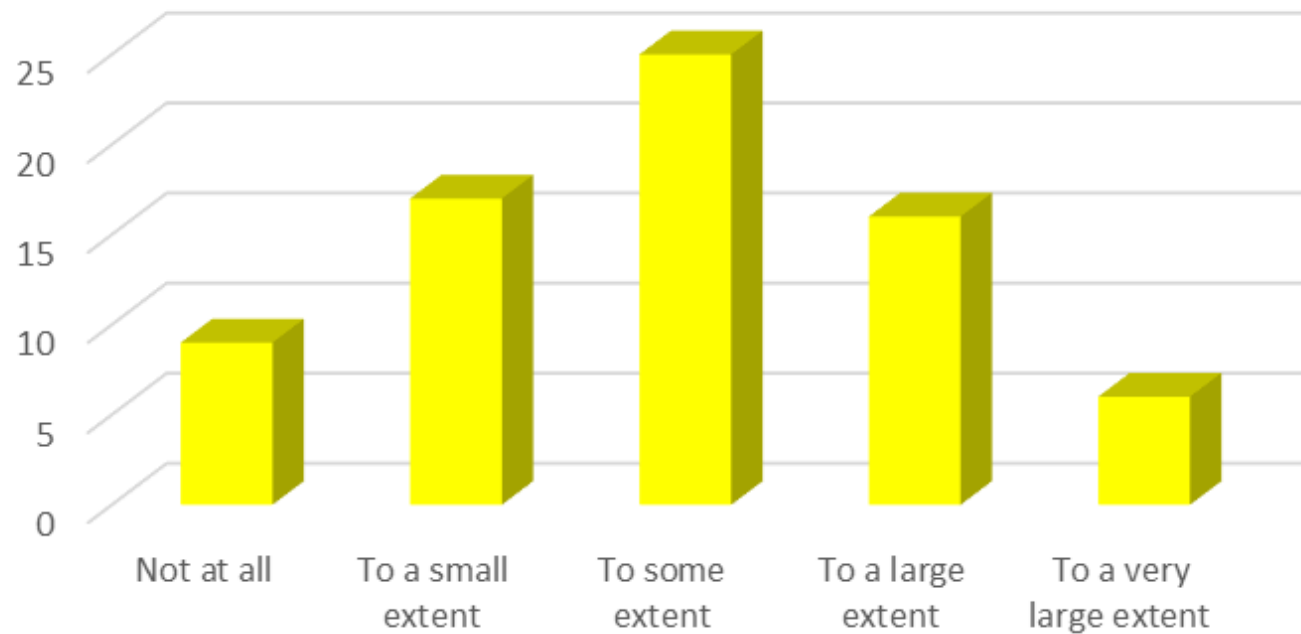
Increase from 56% to 79% (n=71)

https://swinuw.au1.qualtrics.com/jfe/form/SV_ahJNqZRJ5IxSowB


Competence with online communication and collaboration tools



How much do you think about cyber security when WFH?




https://swinuw.au1.qualtrics.com/jfe/form/SV_ahJNqZRJ5IxSowB

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If more of us work from home after coronavirus we'll need to rethink city planning

<https://theconversation.com/if-more-of-us-work-from-home-after-coronavirus-well-need-to-rethink-city-planning-136261>

Dr John Hopkins

www.workflex.solutions

jlhopkins@Swinburne.edu.au