Changing Patterns of Commuting

Editorial

Cities across the globe are reinventing themselves, driven by a variety of forces (Lyons et al., 2018). At the same time, technological change is dramatically altering the nature of employment and transport systems are on the cusp of radical change with the potential for wider adoption of new mobility services and autonomous vehicles (Marsden et al., 2018). As city landscapes, working practices and transport systems change, so does the nature of the commute – traditionally a regularly repeated journey between a fixed home and work (or educational) location, but increasingly a more 'slippery' phenomenon (Le Vine et al., 2017).

Commuting has always been an important focus of transport and land use policies in urban areas. During the morning and evening 'rush hours', transport networks are under pressure with peak period traffic having multiple negative impacts on the functioning of cities and on the quality of urban environments. Commuting has also been shown to affect the physical and mental health of workers (Chatterjee et al, 2019). Studies of commuting are carried out across different disciplines which makes it difficult to get an overall appreciation of the topic. In this issue of Built Environment, we aimed to bring together a variety of perspectives and assessments of the state of commuting in different parts of the world and how it is evolving.

In particular, we reached out to academics across the globe for contributions on the following three themes:

- The changing nature of the commute, particularly in relation to changing city landscapes, working practices and transport systems;
- Spatial variation and inequalities in commuting practices; and
- The commute experience and how this is affected by urban form and transport systems.

The ten papers in the issue cover three continents and seven countries presenting a true diversity of settings. Each paper offers new insights on how commuting journeys vary across space and how this is influenced by spatial development and economic, technological and cultural change. All of the papers give consideration to how commuting is changing in the setting examined, whether explicitly by analysing longitudinal data or implicitly by interpreting their results in relation to historical developments.

Two papers look at how distribution of economic activity influences commuting patterns. **Schleith et al.** compare commuting distances across metropolitan areas in the United States and calculate 'Excess Commuting' measures (representing the difference between the theoretical minimum total commuting distance in a

settlement and the observed commuting distance). The Excess Commuting measures are used to identify three categories of urban form amongst the 53 metropolitan areas: (i) sprawling; (ii) polycentric and (iii) monocentric. It is then shown that polycentric urban forms are associated with shorter commuting distances. This finding is echoed in **Nielsen's** study of the effect on commuting distances of the emergence of 'subcentres' in the Copenhagen urban region. Living close to a subcentre with a minimum of 10,000 jobs is found to be associated with shorter commute and daily travel distances, and a higher probability of using public transport/walking/cycling. **Nielsen** points out however, that proximity to the dominant regional subcentre (with over 300,000 jobs) has a stronger effect on commute behaviour than proximity to subcentres.

Two papers look at the how the quality of employment available influences commuting. **Coombes** examines why average commuting distances in industrial towns in the north-west of England are shorter than the national average. He discovers that commute distances in the north-west "are less divergent from the national average than are the longer distances commuted in and near London". The longer average commute distances around London are explained by the availability of higher income jobs available in London, which compensate for longer commutes, while the shorter average commute distances in the north-west are explained by the absence of more attractive jobs in neighbouring settlements than are available locally. Hence the distribution of commute distances in a region is shown to be governed by labour market geography rather than individuals in different regions making different employment decisions.

Sharma looks at the extent to which workers in India are moving across rural and urban boundaries to access work and how this is affected by labour market conditions. He shows that rural-urban daily commuting is particularly prevalent in the Delhi National Capital Region and that generally both rural-urban and urban-rural daily commuting are more common in more urbanised, industrialised regions of the country. **Sharma** shows that rural-urban commuting is driven by underemployment in rural areas and enables higher wages to be gained compared to working within rural areas. He suggests "commuting by workers acts as an important bridge between rural and urban areas, without significantly adding a burden on cities in terms of housing, access to public services and ensuring balanced growth in rural economy with backward and forward linkages".

Three papers look at variations in commuting behaviour within a global city region and how this is evolving. **Jain and Hecht** look at commuting patterns in the Delhi National Capital Region and examine how distances travelled and modes used vary for residents living in different parts of the region. They show the highest proportion of private motorised transport use occurs for residents on the fringe of the core city area, where multinational offices and international factories have located, while non-

motorised transport use is highest within the city core and in rural peripheral areas of the region. They show longer distance commuting is more prevalent in rural parts of the region and predominantly undertaken by public transport.

Zheng et al. examine the impact of urban sprawl in Beijing on the commuting behaviours of different social groups. They confirm "the decoupling of home and work locations" in Beijing following the abolishment of the 'work unit' (*danwei*) planning system (through which workers were deliberately housed close to work places). They find that a poor 'urban adversity group' are clustered in parts of the city that were formerly rural villages, have much higher levels of self-containment and are more reliant on walking and cycling. By contrast, a 'suburban comfort' group of younger, wealthier residents have longer commutes with greater reliance on public transit and car.

Maciejewska et al. concentrate on the changing pattern of commuting within the New York Metropolitan region with a focus on working single mothers, although their results are relevant to all workers. They find single mothers have been suburbanising over time and can no longer be considered to predominantly be located in inner city areas. They also find that single mothers use public transport more than married mothers, and like the rest of the population of New York have moved away from car commuting to public transport commuting. They conclude therefore that transit provision is vital in the suburbs to provide single mothers with reasonable access to job opportunities.

The paper by **Blumenberg and King** looks at the general trend in commuting distances across all Metropolitan areas of the United States between 2001 and 2017. They look at how this has differed by income and find that commute distances have increased over time for both low-income and high-income workers, but more so for low-income workers and more for those living in low-density areas. Their analysis leads them to conclude that increasing commute distances of low-income workers over time are primarily explained by a higher proportion of them living in the suburbs, rather than commute distances increasing over time.

The two remaining papers examine how commuting practices are changing as the nature of employment changes. **Ravalet and Rérat** look at teleworking trends in Switzerland and find an increase in teleworking from 21% of workers in 2010 to 24% of workers in 2015. Most teleworkers only occasionally work away from their main office with three-quarters doing this on less than 3 in 10 occasions. They show that teleworking is associated with greater education, higher income jobs and flexibility of working hours and that teleworking is emerging over time more strongly for particular population groups (men and the over 30s). They also reveal that "teleworkers live further from their place of work than" non-teleworkers and that teleworkers travelled further overall than non-teleworkers over the course of a

working week (as a consequence of living further from work, and undertaking additional non-work trips on teleworking days). They suggest therefore that teleworking "may consequently decrease the propensity for residential relocation and increase tolerance for long distance commuting".

Plyushteva offers a new angle for looking at the commute by exploring how choices over commuting options and experiences of the commute are influenced by co-workers. She looks at this in Sofia, Bulgaria, which has seen rapid suburban development since the collapse of state socialism in 1989, including the emergence of a burgeoning tourist sector in the historic centre and business and technology parks at fringe locations of the city. From her qualitative research with office workers and shift workers in the tourism and hospitality sector she is able to show how workers managed challenging commutes. She found options available to workers could be highly dependent on provisions made by managers and that travelling together with co-workers could be both a source of comfort or unease.

Important findings emerge from the papers in this issue on a number of interesting cross-cutting themes of which we highlight one – inequalities – before we conclude with key messages from the issue. **Coombes** finds that more limited commuting distances in the north-west of England are not, necessarily, a consequence of limited transport infrastructure or a reluctance to commute further to work but are more driven by lack of better paying jobs in the region. He states "…any suggestion that people in the Pennine region should 'choose' to commute further as a means to increase labour productivity in their city regions, ignores economic realities".

In contrast, **Sharma** shows that commuting from rural into urban areas enables underemployed rural workers in India to find better rewarded work. However **Jain and Hecht** find illiteracy, minority group status and lack of basic household amenities are associated with shorter commuters amongst rural workers in the Delhi National Capital Region which highlights inability to pay for transportation as a barrier to seeking better paid jobs.

The contrasting commuting groups identified by **Zheng et al.** make it apparent there are disparities in employment opportunities within the suburbs of Beijing. The urban adversity group have short commutes (often working locally to their homes) and rely more heavily on walking and cycling. The suburban comfort group have longer and more complex commutes with greater reliance on the metro and car. The high levels of self-containment of work travel among the urban adversity group living in informal housing in urban villages can be seen as contributing to their relatively poor economic position but with "the irony … that the most sustainable commute was found in these informal developments".

Blumenberg and King conclude that continued suburbanisation of the urban population in the United States has led to longer commutes being faced by more

workers, including low-income workers, minority ethnic groups and those without cars for whom these are likely to be particularly tough to bear and for which it is suggested policy responses are merited to alleviate the risk of poverty. They suggest "Policies to address this issue should focus on transportation but, as the broader literature suggests, will require efforts to address discrimination in both residential location and employment". **Maciejewska et al.** highlight the concern that reliance on transit amongst working mothers (especially single mothers) in New York is problematic given poor provision in many areas of the city and this may inhibit job opportunities. They conclude the findings "underscore the vulnerability of minority single mothers, especially Black and Hispanic women, in a polarizing New York urban region". On a similar theme, **Plyushteva** highlights the difficulties of organising commutes in the changing employment landscape in Sofia where workplaces are not easy to reach by traditional public transport due to their location relative to homes and the times workers are required to work.

Ravalet and Rérat show that teleworking is increasing over time in Switzerland but is selectively available to workers in better paid sectors. Those that can telework not only benefit from flexibility in their working arrangements but also a wider job search area and greater opportunity to manage home and work demands. However, they show teleworking is not likely to contribute to any reduction in overall mobility given that fewer commute journeys of teleworkers are offset by longer commute distances.

Across the papers, a common message is that high quality public transport, whether in the form of traditional rail/metro systems or modern rapid transit, can play a vital role in enabling workers living in suburban, fringe and rural periphery areas to access jobs in urban centres. However, this needs to be deployed more widely than it is currently to spread opportunities to a wider section of the population. This applies as much to long-established urban regions (such as New York) as it does in fast growing urban regions (such as Beijing, Delhi or Sofia). For example, **Jain and Hecht** note for Delhi that "The frequent long trips to work in rural areas as well as the high use of two-wheelers in the region run contrary to transportation and regional policies aimed at increasing the use of public transport and reducing commuting distances" and suggest major reforms of transport policies to prioritise public transport. The papers that look at polycentricity (**Schleith et al.**, **Nielsen**) show that second-order urban centres decrease commuting distances but are associated with the challenge of being more difficult to serve by traditional public transport.

We finish with three concluding messages from the collection of papers in this issue. First, the papers confirm the important influence of spatial development and labour market structure for commuting, implying a need for integrated land use, economic and transport policies to influence how people access employment. Second we know

that different social groups are spatially clustered and have different opportunities and constraints when it comes to travelling to appropriate jobs which match their skills. The commuting requirements of different social groups need recognition in policies concerned with access to jobs, housing and the transport connections between them. Third, we know that commuting practices are evolving as a response to socio-technical trends and in response to the changing nature of cities. Consideration needs to be given to these changing practices as well as the more traditional matters of the location of jobs, homes and transport services.

References

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{Plus the papers in this issue}