

A Review: The Impact of Emerging Work Habits on Residential Location Choices

Abstract.

The transition towards remote work and the adoption of flexible schedules, a development hastened by the COVID-19 pandemic, have significantly disrupted conventional commuting habits and fundamentally altered the demand for urban spaces. This shift challenges the traditional monocentric urban model, which relies on dense employment centers to dictate residential choices and commuting patterns. The newfound flexibility to work from diverse locations has reduced the importance of proximity to the workplace as a crucial factor in making residential decisions. This suggests a potential for the decentralization of urban populations and calls for a critical reassessment of the role and significance of business districts within cities. Moreover, this period of rapid change has not only demonstrated the practical effectiveness of digital communication technologies but has also brought to light the feasibility of a working model that is more personalized and adaptable to individual needs. This evolution points towards a future where work and life balance can be better achieved, reshaping urban landscapes and work practices in profound ways.

Keywords: telecommuting, staggered work hours, location choice, central business districts

The transformation of employment configurations has been profound, shaped by historical developments, technological progress, and evolving societal norms. Originating with the regimented schedules of the Industrial Revolution, which shifted production from individual craftsmen to assembly lines, this era underscored the efficiency of set schedules and highlighted the increased costs associated with working from home. Consequently, the concept of employment has gradually transcended the traditional 9-to-5, Monday-to-Friday structure to embrace a wide array of work arrangements (Mas and Pallais, 2020). These include stable, full-time positions offering comprehensive benefits, as well as part-time roles that provide increased flexibility but may result in diminished job security and benefits.

A traditional job typically pays a wage or salary and often involves an implicit or explicit contract for a continuing employment relationship. It features a predictable work schedule and earnings and is supervised by the firm paying the salary (Abraham et al., 2018). The advent of the digital era has significantly broadened the spectrum of employment possibilities, especially with the introduction of remote work (à la Oettinger, 2011). The Internet and advancements in information technology (IT) have transformed the costs associated with offering various work arrangements, making it more feasible for employers to permit employees to work remotely (Bloom, 2020).

The COVID-19 pandemic has significantly accelerated the shift towards remote and hybrid work models, underscoring their feasibility and necessitating a reevaluation of traditional, office-centric employment norms (Autor and Reynolds, 2020; Felstead and Henseke, 2017). This period of rapid adaptation has not only validated the effectiveness of digital communication tools but also highlighted the potential for a more personalized and flexible approach to work. Looking forward, the continued integration of technology into the workplace is expected to further diversify employment arrangements, challenging established norms and expectations about the nature of work. This ongoing evolution indicates a future where employment models are increasingly tailored to the specific needs of employees and the operational requirements of organizations, with an emphasis on harmonizing work and life, enhancing employee well-being, and leveraging technology to facilitate adaptable and

efficient work practices (Bick et al., 2023).

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Parallel to these developments, the concept of Staggered Work Hours (SWH) has been explored as a policy strategy since the 1920s, with significant modeling efforts emerging in the 1980s to assess its impacts on traffic behavior and economic benefits (Maric, 1978; Hendersion, 1981). Subsequent models have enriched the discourse on SWH by incorporating factors such as heterogeneous commuters, flextime, and the effects of bottleneck congestion (Arnott, de Palma, and Lindsey, 1996; Yoshimura and Okumura, 2001; Arnott, 2007). Recent advancements include models that employ Dynamic Traffic Assignment (DTA) to simulate commuter responses to staggered start times, focusing on minimizing travel disutility and evaluating SWH's impact on system performance through principles like the Dynamic User Optimal (DUO) and Dynamic System Optimal (DSO) (Yushimito, Ban, and Holguín-Veras, 2014; Takayama, 2015; Fosgerau and Small, 2017).

This body of research highlights the potential of SWH to influence residential location choices by altering commuting patterns, offering valuable insights into optimizing urban land-use and transport interaction. As SWH models continue to evolve, they underscore the complex interplay between commuting efficiency and urban residential dynamics, pointing towards strategies that can harmonize the demands of modern employment with sustainable urban development.

In the field of urban land–use transport interaction (LUTI), substantial research has focused on understanding and predicting households' choices regarding residential and job locations, as well as the associated daily activity-travel patterns. The fundamental principle for co-determining land use and transport has been

acknowledged by many scholars (Meurs and Haaijer, 2001; Næss, 2013), and is supported by theoretical research and empirical findings from different contexts (Aditjandra et al., 2013; Gim, 2013; Handy et al., 2005).

Classical microeconomics theory (Alonso, 1964; Wingo, 1961; de la Barra, 1989; Waddell, 2018) provides a robust framework for qualitative analysis of the long-term relationship between land use and transportation. The development of utility-based models facilitates the capture of complex choice behavior dynamics involved in land use and transport decisions at the individual level (McFadden, 1973; Chang, 2006; Pinjari and Bhat, 2011). In the monocentric city model introduced by Alonso (1964), Muth (1969), and Mills (1972), the city center contained the CBD, which represented access to jobs. Residents made locational choices to maximize their utility by balancing the trade-off between commuting costs and housing affordability. The model predicted decreasing population density, land value, and housing prices as people moved farther from the CBD.

References

- Abraham KG, Haltiwanger JC, Sandusky K, Spletzer JR. 2018. Measuring the gig economy: current knowledge and open issues. NBER Work. Pap. 24950.
- Aditjandra, P.T., C. Mulley, and J. D. Nelson (2013). The influence of neighborhood design on travel behavior: Empirical evidence from North East England. *Transport Policy* 26: 54–65. <https://doi.org/10.1016/j.trd.2005.05.002>.
- Alonso, W. 1964. *Location and Land Use: Toward a General Theory of Land Rent*, Cambridge, MA and London, England: Harvard University Press. <https://doi.org/10.4159/harvard.9780674730854>.
- Arnott, R. 2007. Congestion Tolling with Agglomeration Externalities. *Journal of Urban Economics* 62 (2): 187–203.
- Arnott, R., A. d. Palma, and R. Lindsey. 1996. Heterogeneous travellers. In *Congestion: A Dynamic Approach with Application to Road Traffic*. Unpublished manuscript.
- Autor, D., Reynolds, E., 2020. The Nature of Work after the COVID Crisis: Too Few Low-Wage Jobs.
- Bick, A., Blandin, A., Mertens, K., 2023. Work from Home before and after the

- COVID-19 Outbreak. *Am Econ J-macroecon*, 15, 1–39.
<https://doi.org/10.1257/mac.20210061>
- Bloom, N., 2020. How working from home works out. *Stanford Institute for economic policy research*, 8.
- Chang, J. S. 2006. Models of the relationship between transport and land-use: A review. *Transport Reviews* 26: 325–350,
<https://doi.org/10.1080/01441640500468432>.
- de la Barra, T. D. L. 1989. *Integrated Land Use and Transport Modeling: Decision Chains and Hierarchies*. Cambridge: Cambridge University Press.
- Felstead, A., Henseke, G., 2017. Assessing the growth of remote working and its consequences for effort, well-being and work-life balance. *New Tech Work Employ*, 32, 195–212. <https://doi.org/10.1111/ntwe.12097>.
- Fosgerau, M., and K. Small. 2017. Endogenous Scheduling Preferences and Congestion. *International Economic Review* 58 (2): 585–615.
- Gim, T. H. T. 2013. The relationships between land use measures and travel behavior: A meta-analytic approach. *Transportation Planning and Technology* 36: 413–434,
<https://doi.org/10.1080/03081060.2013.818272>.
- Handy, S., X. Cao, and P. Mokhtarian. 2005. Correlation or causality between the built environment and travel behavior? Evidence from Northern California. *Transportation Research Part D: Transport and Environment* 10: 427–444,
<https://doi.org/10.1016/j.trd.2005.05.002>.
- Hendersion, J. V. 1981. The Economics of Staggered Work Hours. *Journal of Urban Economics* 9 (3): 349–364.
- Maric, D. 1978. Adapting Working Hours to Modern Needs. *Management Research News* 1 (2): 11.
- Mas, A., Pallais, A., 2020. Alternative Work Arrangements. *Annu Rev Econ*, 12, 631–658. <https://doi.org/10.1146/annurev-economics-022020-032512>
- Mcfadden, D. 1973. Conditional logit analysis of qualitative choice behaviour. In *Frontiers of Econometrics*, edited. by P. Zarembka. New York: Academic Press.
- Meurs, H., and R. Haaijer, 2001. Spatial structure and mobility. *Transportation Research Part D: Transport and Environment* 6: 429–446.
- Mills, E.S., 1972. *Studies in the Structure of the Urban Economy*. Johns Hopkins University Press, Baltimore.
- Muth, R.F., 1969. *Cities and Housing*. University of Chicago Press, Chicago.

- Næss, P. 2013. Residential location, transport rationales and daily-life travel behavior: The case of Hangzhou metropolitan area, China. *Progress in Planning* 79: 5-54.
- Oettinger GS. 2011. The incidence and wage consequences of home-based work in the United States, 1980-2000. *J. Hum. Resour.* 46:237–60.
- Pinjari, A.R., and C. R. Bhat. 2011. Activity-based travel demand analysis. *A Handbook of Transport Economics* 10: 213–248.
- Takayama, Y. 2015. Bottleneck Congestion and Distribution of Work Start Times: The Economics of Staggered Work Hours Revisited. *Transportation Research Part B: Methodological* 81: 830–847.
- Waddell, P.A., 2018. *Household Choice and Urban Structure: A Re-Assessment of the Behavioural Foundations of Urban Models of Housing, Labor and Transportation Markets*. Routledge.
- Wingo, L., Jr. 1961. *Transportation and Urban Land*. Washington, DC: Resources for the Future, Inc.
- Yoshimura, M., and M. Okumura. 2001. Optimal Commuting and Work Start Time Distribution Under Flexible Work Hours System on Motor Commuting. In *Proceedings of the Eastern Asia Society for Transportation Studies* 10 (3): 455–469.
- Yushimito, W. F., X. Ban, and J. Holguínveras. 2014. A two-Stage Optimization Model for Staggered Work Hours. *Journal of Intelligent Transportation Systems* 18 (4): 410–425.