

Cities in shape: the effect of urban morphology on sustainable mobility accessibility to urban amenities

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Sustainable mobility has become one of the grand challenges of the 21st Century. The increasing evidence of the noxious effects of urban air pollution and its relation to motorised traffic has contributed to the development of new policies aimed at promoting clean modes of mobility (Khomenko et al., 2021; Sicard et al., 2020). In Paris, the ‘15-minute city’ envisions a city where basic amenities can be reached within a 15 minute walking or cycling radius (Moreno et al., 2021). Similarly, Copenhagen has focused on transit-oriented development policies which promote compact and dense residential areas built close to public transport stations (Curtis et al., 2009). At the heart of these policies lays the need to align sustainable mobility policies with providing a built environment that favours these behaviours.

A key component of this new wave of policies is local accessibility. The focus on locality has become increasingly palpable in the later years, as the neighbourhood has gained importance as analysis unit (Pozoukidou and Chatziyiannaki, 2021). Counting on a solid and varied network of amenities within short-time travel distances has proven key for granting sustainable urban mobility (Elldér et al., 2022), and has become very relevant for many following the COVID-19 pandemic (Córdoba-Hernández et al., 2020; Maestosi et al., 2021).

Urban form and urban design play a key role in granting accessibility. A recent report published by the Centre for Cities (Rodrigues and Breach, 2021) addressed the need to grant access to public transport networks in British cities. One of the conclusions of the report is the importance of pairing the expansion of public transport networks with building denser, higher-rise housing developments. This aligns with other studies that assessed which built-environment qualities are related with better accessibility (Ewing and Handy, 2009; Harvey et al., 2016). These studies are based on the measurement of the urban form, a discipline that has recently gained momentum with the development of urban morphometrics subfield, that aims at quantifying the elements of the built environment using geocomputation techniques (Fleischmann et al., 2021, 2020).

The conjunction of a newfound interest on local accessibility, the increased awareness of the effects of the built environment on sustainable mobility, and the development of new urban morphology

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quantification techniques, allows for the exploration of novel and exciting research paths. This abstract presents the author’s PhD project, which aims at providing a holistic view of local accessibility. This research will bring together elements from GIS and geocomputation, urban morphology, geodemographics and urban economics, and will pay special attention to how the urban form affects the way we relate to our cities and their effect on sustainable mobility choices. The final goal is to provide policy-makers and urban planners with evidence on what urban models are more suitable for promoting sustainable mobility amongst all citizens.

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