**Public Interest in Sustainable Mobility: Evidence from Google Trends data**

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**Abstract**

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**Introduction**

Cities have emerged as critical arenas for global climate action, accounting for approximately 70% of carbon emissions and consuming nearly two-thirds of the world’s energy (United Nations, 2020). Within this urban metabolism, transportation plays a particularly decisive role, currently responsible for 30% of global energy consumption, and thus represents a major challenge for the net-zero energy transition (International Energy Agency, 2020). Recent research underscores that this transition cannot rely solely on cleaner technologies or improved vehicle design. Even ambitious policies focused on electrification, retrofitting, and efficiency improvements are insufficient to meet climate targets unless accompanied by a rapid and large-scale reduction in car use (Winkler et al., 2023). Sustainable urban mobility, therefore, hinges not only on transforming vehicles, but on fundamentally rethinking mobility demand itself, through policy approaches that address infrastructural, behavioral, and institutional dimensions (Banister, 2008).

Mobility has traditionally been understood as the movement of people across space and time (Wang et al., 2022). However, this functionalist view has evolved to encompass a more complex understanding of mobility as a socially embedded phenomenon. It is not only a question of physical displacement, but a function of one’s capacity to access, interpret, and act upon available options—what has been described as *motility*, or the potential to be mobile within specific structural and cultural contexts (Kaufmann et al., 2004, 2014). It is well established that mobility opportunities are unevenly distributed across individuals and territories, shaped by infrastructure, spatial planning, and socioeconomic conditions (Duranton & Turner, 2011). From this perspective, any attempt to shift mobility demand must also consider how structural inequalities influence individuals’ ability—and willingness—to engage with more sustainable modes of transport.

In parallel with this growing interest in the multidimensional nature of urban mobility—economic, social, and political—the increasing availability of large-scale digital data has transformed how mobility is measured and understood (Batty et al., 2012). Sources such as mobile phone records, GPS traces, transit smartcards, and geolocated social media have enabled researchers to analyze movement patterns at unprecedented temporal and spatial resolution. These data have been used to uncover social disparities in accessibility, delineate activity spaces, and infer demographic traits and behavioral routines (Wang et al., 2022; Wu & Zhou, 2023). Yet these traces, while rich in *where* and *when*, remain largely silent on the *why*. From a broader perspective, mobility can be understood as a total social phenomenon—one that reflects evolving relationships between space, society, and subjectivity. The dissolution of the urban–rural dichotomy, the emergence of dispersed urbanization, and the centrality of transport and communication networks all contribute to mobility practices that are increasingly fluid, flexible, and socially unequal (Kaufmann, 2014).

While the importance of transforming mobility demand is widely acknowledged, less attention has been paid to how such shifts in interest or intention can be monitored and interpreted using emerging data sources. In this context, a key question arises: how can digital traces such as online searches help us understand the evolving public orientation toward sustainable and unsustainable modes of transport? Traditional instruments like travel surveys or census data offer limited temporal granularity and rarely capture early signals of change in perceptions or preferences. This paper explores the potential of Google Trends as a high-frequency, geographically disaggregated dataset to analyze public interest in different transport strategies. Using the Avoid–Shift–Improve (ASI) framework as a conceptual guide (Bakker et al., 2014), the study categorizes transport-related search terms accordingly and investigates how, where, and under what conditions interest in these strategies varies across Spain’s autonomous communities.

Literature review

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