

SUSTAINABLE CONSUMPTION ACROSS 24 OECD METROPOLITAN AREAS

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Decades of research has demonstrated that everyday environmental actions, such as recycling waste and reducing energy use, are strongly influenced by personal characteristics, such as age and gender. Empirical investigations of the city-level factors associated with these actions are rare. The majority of studies about the impacts of population density on environmental sustainability have placed emphasis on a particular form of consumption choice, i.e. energy use, or multiple cities in a particular country.

About this study

My recent research addressed the structural differences between metropolitan areas across countries and adopted a broader view of sustainable consumption encompassing the use of other forms of resources (i.e. not only energy). The study examined the key factors that account for the variations in sustainable behaviours across 24 selected Organisation for Economic Co-operation and Development (OECD) cities or metropolitan areas, using data openly available from the International Social Survey Programme (ISSP Research Group, 2012). The ISSP Environment Module included a number of close-ended questions on environmental concern, attitude and behaviour. Using statistical techniques, I analysed how self-reported frequency of making efforts to adopt a sustainable lifestyle varies across the 24 OECD cities or metropolitan areas. The analysis focused on attributes of urban environments and controlled for confounding factors that might account for these variations, such as income, environmental concern, GDP, and air quality.

Results showed that everyday sustainability practices are a function of personal factors, i.e. the socio-economic traits of the individuals and their level of environmental concern. However the effects of contextual factors, i.e. urban form, remain unclear.

Contrary to what might be expected, my research findings offer little evidence for the view that residents in compact cities tend to adopt low-energy ways of living e.g. driving less or reducing fuel consumption, for environmental reasons. However, some of the spatial attributes of the cities investigated were statistically related to sustainable lifestyles.

Metropolitan Population Size

The population size of metropolitan areas had modest positive impacts on the tendency to drive

less. This is probably because a larger number of commuters can significantly reduce the marginal costs of public transport and make it cheaper to use, thus encouraging car owners to switch to the more sustainable commuting option. Higher population densities also increased the frequency of practicing other forms of sustainable consumption, such as recycling waste and buying green products. Similarly, this could be attributed to economies of scale: more options for sustainable consumption are available in densely populated areas, as the marginal costs of setting up sustainable infrastructure or business, such as recycling facilities and selling organic food in supermarkets, are likely to be lower. Such opportunities may be more limited in smaller towns with fewer people. Therefore, a possible role of the compact urban form is to give residents greater access to sustainable consumption options that would otherwise come at higher costs or require greater efforts to reach.

Greenspaces

My study found a statistically significant positive association between sustainable practices and per capita area of green spaces, but causality remains unclear. Individuals and households who have already adopted a sustainable lifestyle may choose to live in a place with better environmental quality, such as having more green spaces in the city and closer proximity to natural areas. Yet, the quality of the living environment can also influence lifestyle choice; a generous supply of green spaces can potentially strengthen the motivation of people to appreciate the idea of environmental sustainability by offering a sense of nature and enhancing life satisfaction (Lo & Jim 2010). The possible causal linkage between the availability of green space and the choice of sustainable lifestyles requires further evidence to validate this interpretation.

Future research

The findings give direction for future research. Whilst my study does not suggest that household consumption of energy is related to urban form (Holden and Norland, 2005), other authors have offered such evidence. Holden and Norland's (2005) research is based on actual energy consumption reported by respondents, rather than stated frequency of reducing energy use. Energy bills provide a measure of the outcome of households' consumption practices during a particular period of time, regardless of their attitude or preference toward environmental sustainability, and are therefore a passive indicator of sustainable behaviour. In contrast, the present study makes use of an active indicator that assumes a conscious attempt, i.e. a pair of survey questions that probed the frequency of saving energy *for environmental reasons*. Although the environmental outcomes of the households' consumption decision do not depend on their intention, the different observations seem to suggest that the compact urban form has a passive effect driven by physical-structural conditions, rather than an active one driven by awareness. Questions then arise as to how much consideration should be given to the public's explicit support to the intrinsic sustainability arguments for increasing the city's compactness, if all that matters is the outcomes.

Moreover, the observation that green space and sustainable consumption are inter-related reinforces the tension between increasing densities and greening within the built-up area. Within the city, high-density developments often result in fewer green spaces (Lin and Yang, 2006; Jim, 2004; Jabareen, 2006), although it depends on how density is defined (Anderson et al., 1996). Fewer green spaces, as the present study has shown, are associated with lower tendencies for adopting a sustainable lifestyle. However, this contradicts another observation that these tendencies increase with population density. This leaves open the question as to how increasing densities and greening

come into play, given that both of these two factors positively contribute to a more sustainable lifestyle. The tension may be over-stated to the extent in which high density is defined in terms of the concentration of people within the developed districts of the city (provided that ample open spaces exist between districts) (Anderson et al., 1996). Nonetheless the concentration factor did not indicate significance in the regression models presented in the last section, leaving the alternative explanation unsupported. It is then worthwhile to explore another aspect of the compact urban form, i.e. the concentration of green spaces at the peripheries of developed districts, which might help us understand how sustainable lifestyle relates to high population densities and adequate supply of green space.

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