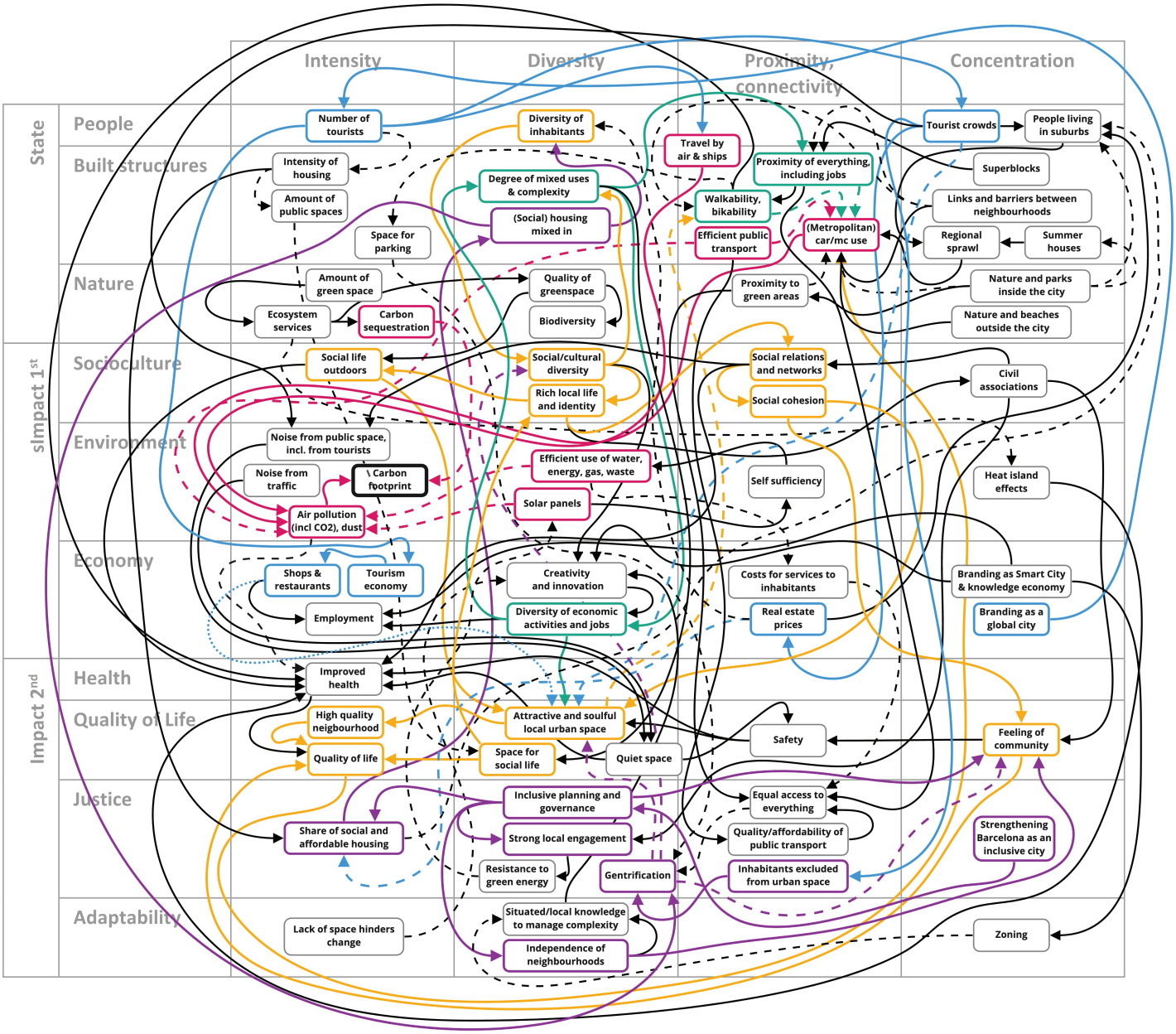


Synergies and trade-offs of Barcelona compact city qualities in relation to ambitions for a zero-carbon city. A solid arrow indicates the direction reinforcing and synergetic influence while a dashed arrow denotes a trade-off (Kirkwood 1998). A dotted arrow shows an interdepence that can be both positive and negative. The box with thick black contour identifies the purposeful activity (Checkland 1989) of the system within the context of this analysis, i.e. to reduce its carbon footprint, where urban qualities closely linked to zero-carbon performance are marked in red. Other colours indicate additional sub-systems: Mixed use and complexity (green); Quality of life (yellow); Tourism economy (blue); and Inclusive planning and governance (purple).

Supplementary figure to the article Towards a systemic understanding of compact city qualities by Jaan-Henrik Kain, Marco Adelfio, Jenny Stenberg and Liane Thuvander, published in Journal of Urban Design in 2021.

Checkland, Peter. 1989. 'Soft Systems Methodology.' In Rational Analysis for a Problematic World: Problem Structuring Methods for Complexity, Uncertainty and Conflict, edited by Jonathan Rosenhead, 71-100. Chichester: John Wiley & Sons.

Kirkwood, Craig W. 1998. 'System Dynamics Methods: A Quick Introduction.' Tempe, AZ: Arizona State University.