

# Smart city governance and the ethical dimension of smart city decision-making in Cambridge, UK

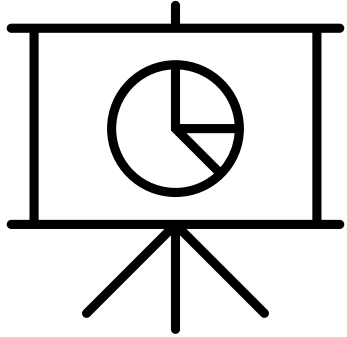
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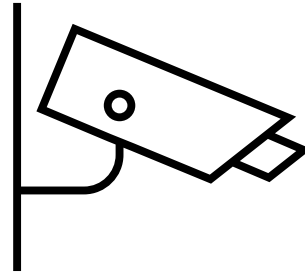
# Outline of presentation

- Ethical concerns in Smart Cities
- What is ethics? What is ethical decision-making?
- Study area
- The Smart Cambridge programme and research methodology
- Findings
- Conclusions and future research

# Ethical concerns in Smart Cities



Misrepresentation,  
(de)anonymisation,  
targeted advertising,  
derivative uses & data  
commercialisation

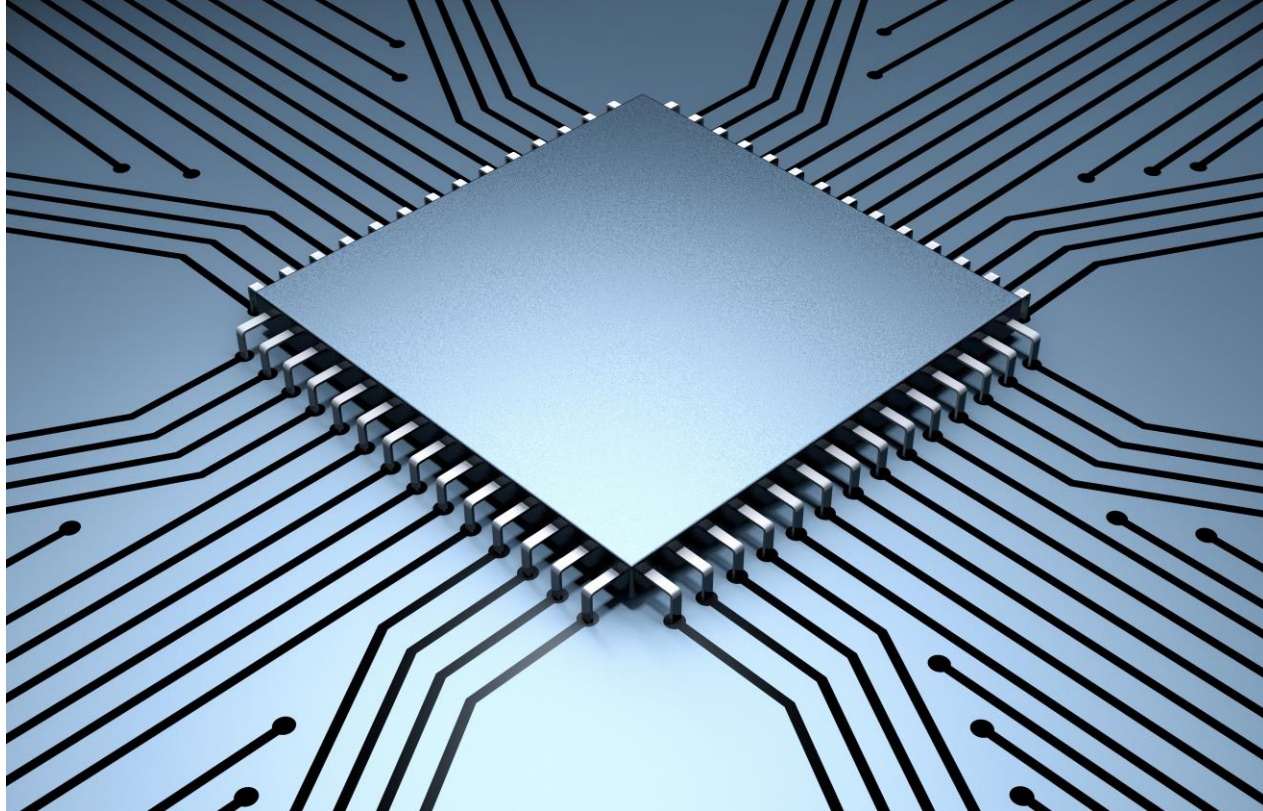


(Geo)surveillance,  
informed consent,  
privacy



Algorithmic profiling,  
spatial sorting, gender  
stereotyping

# Smart City governance is complex



**Formation of partnerships**




**Geographies of project deployment**



**Funding of projects**

# Smart City governance

**Urban governance (Obeng-Odoom, 2012)**  **Smart City governance**

- 1) decentralisation of decision-making powers from central governments to devolved authorities and other non-state actors
  - 2) the adoption of an entrepreneurial style of city management
  - 3) democratisation, where people can use various media to register their grievances and influence policy making
- devolution of power or decision making from municipal governments to technology companies (Castelnuova, 2019)
  - collaborations and partnerships between city authorities, businesses, and universities
  - mobilisation of citizens in identifying city problems and finding solutions (Cardullo & Kitchin, 2019a)
  - new working relationships, decision-making protocols and governance frameworks (Kourtiti et al., 2017)

# What is ethics and ethical decision-making?

Codes of conduct which people use to distinguish between right and wrong (Chang, 2021)

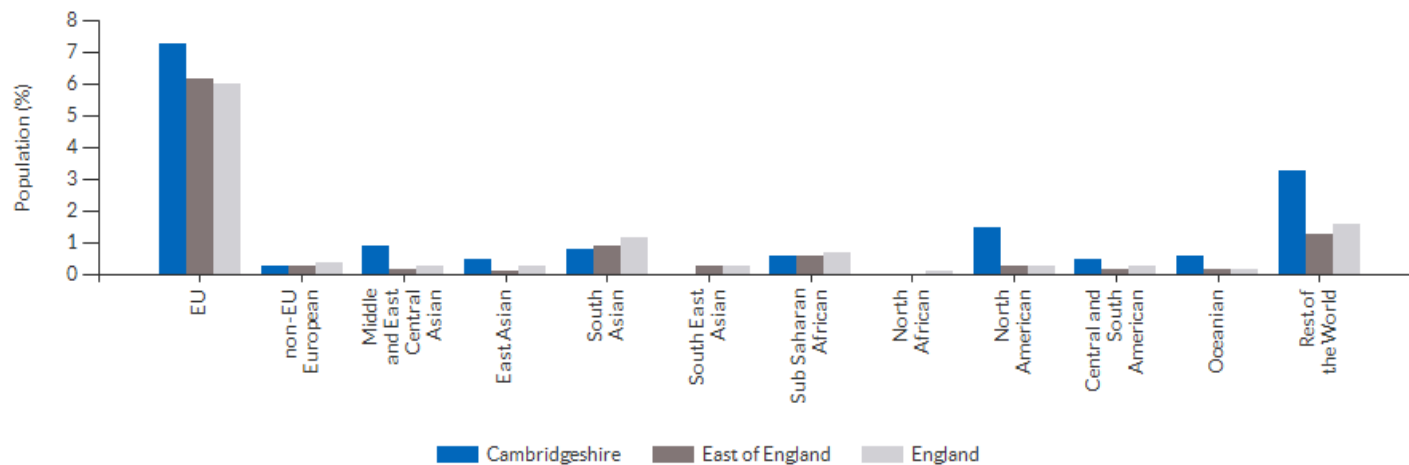
Ethical decision = A decision made when the decision-maker faces choices or actions that have **ethical content** and must be evaluated against codes, values, norms (Hunt & Vittel, 1986)

To establish limits using codes, ordinances, rules and laws that express social values and guide decisions  
(Bianchini & Avila, 2014)

# Study Area - Cambridgeshire, UK

- Population of Cambridgeshire: **657,204** (2020 est.)
- Cambridgeshire County Council: **21 towns and small to medium cities**
- Cambridgeshire & Peterborough Combined Authority Economic contribution to UK economy: **£22 billion** (2019)
- Cambridge City population: **126,603** (2020 est.)
- Global leader in: **Innovation and commercialisation of new ideas**

Population by nationality (excluding UK)



Date: 2019 Source: ONS



City as a platform  
(iCP)

Smart mobility platform



Autonomous vehicle trials

Digital twin prototype



# Findings – 1/3

Aspects of Smart City governance faced with ethical decisions	Examples of decisions/actions with ethical content	Ethical issues raised
<p style="text-align: center;"><b>Framing and governance of Smart Cities</b></p>	<ul style="list-style-type: none"> <li>• Rationalising that data &amp; technology will bring about efficient and effective allocation of resources, and solve city problems.</li> <li>• Councillors relying on university scientists and tech providers to gain simplified insights into complex technology issues.</li> </ul>	<ol style="list-style-type: none"> <li>1) Potential conflict between market logic vs. public good logic.</li> <li>2) How might incorporating smart technologies in urban governance affect transparency and accountability?</li> <li>3) Attributes of ‘trusted’ partners, and potential pitfalls of making decisions based on simplified information</li> </ol>
<p style="text-align: center;"><b>Geographies of project deployment</b></p>	<ul style="list-style-type: none"> <li>• The concentration of most Smart City project deployments and trials in certain areas of Cambridge City.</li> </ul>	<ol style="list-style-type: none"> <li>1) The privileging of some cities or towns, wards, neighbourhoods above others.</li> <li>2) How is relevant information about the project decentralised across different governance levels?</li> <li>3) Who takes responsibility for decisions?</li> <li>4) Areas where data is not collected can potentially be excluded.</li> </ol>

# Findings – 2/3

Aspects of Smart City governance faced with ethical decisions	Examples of decisions/actions with ethical content	Ethical issue raised
<b>Formation of partnerships</b>	<ul style="list-style-type: none"> <li>Justifying ethical decisions based on strict compliance with procurement rules when deciding who to partner with, services to purchase, etc.</li> <li>Drawing lessons from data, processes, protocols and work ethics of private technology firms?</li> </ul>	<ol style="list-style-type: none"> <li>How to ensure that benefits and costs are fairly distributed between partners</li> <li>How are concepts such as value for money and efficiency conditioned by the subjective norms and values of some groups of people?</li> <li>How does tapping into the expertise and quality assurance impact in-house capacity building?</li> </ol>
<b>Funding of projects</b>	<ul style="list-style-type: none"> <li>Bidding for funding with predetermined domains or project foci.</li> <li>Allowing external bodies and third parties to solely finance specific smart city projects.</li> <li>Allocating public funds to project trials vis-à-vis other pressing needs, e.g. housing shortages</li> </ul>	<ol style="list-style-type: none"> <li>Potential for over or under-emphasising city problems to suit funding requirements.</li> <li>Local autonomy in decision-making when projects are externally funded.</li> </ol>

# Findings – 3/3

Aspects of Smart City governance faced with ethical decisions	Examples of decisions/actions with ethical content	Ethical issue raised
<p><b>Citizen engagement</b></p>	<ul style="list-style-type: none"> <li>• Making technology-enabled solutions the inevitable outcome of a hackathon, accepting that the team of hackers is likely to comprise mainly tech-savvy people.</li> <li>• Hosting talks about digital transformations taking place in the city for non-tech savvy residents.</li> <li>• Taking team of hackers on a tour of specific areas of the city.</li> <li>• Expert panels judging what is the best solution to a city problem.</li> </ul>	<ol style="list-style-type: none"> <li>1) Agenda setting and valorisation of ‘techno-superiority’.</li> <li>2) Privileging some areas of the city for smart solutions over others.</li> <li>3) Social conditioning and foreclosing on ability to think ‘outside the box’?</li> <li>4) Potential reinforcement of an elitist world view of how people experience city problems, and what should count as the right solution.</li> </ol>

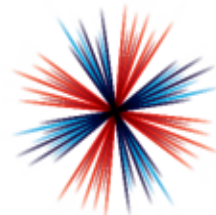
# Conclusions and future studies

- Even where decision-makers adhere to legal frameworks and procedures, this does not prevent decisions with ethical content from emerging in Smart City governance.
- Any Smart City governance decision that involves choosing one option over the other is political, and these decisions therefore have ethical content. It is important to acknowledge the political and ethical nature of decision-making in order to understand how the choices made are justified by decision-makers.
- Reliance on the private sector, including technology companies, for funding, protocols, and technologies to solve city problems, risks reducing local authorities' appetites for developing in-house capacities. Questions are raised over how different value systems and ethical principles employed in solving city problems are navigated.
- Future research will focus on ethical issues involved in the governance of Smart Cities with multiple areas of focus and the ethical considerations associated with peer-learning between cities.

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**Read more:** Juvenile Ehwi, R., Holmes, H., Maslova, S., & Burgess, G. (2022). The ethical underpinnings of Smart City governance: Decision-making in the Smart Cambridge programme, UK. *Urban Studies*.

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