

State of the Art Review

Policy and practice experiments

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Non-technical abstract

In policy and practice, experiments describe innovative real-world interventions to tackle problems. These experiments swap traditional laboratory settings for learning by doing. They promote creativity and collaboration and embrace failure. Experiments vary in focus: some target existing problems, while others explore potential solutions.

Policy and practice experiments have gained traction due to complex societal challenges, especially climate change adaptation and sustainability, and new opportunities, like digital platforms. This NICRE State of the Art Review summarises research on policy and practice experiments. Evidence indicates that effective experiments require clear purposes and flexible methods tailored to the context. Experiments bring benefits like turning visions into local action, fostering innovation, and enabling learning. However, challenges include implementation, resources, and capacities. Although experiments hold promise, lasting impact and systemic change remain difficult to achieve.

Summary

In recent years, the concept of **experiments** has expanded beyond traditional scientific settings into **policy and practice contexts**. These experiments use innovative real-world interventions to tackle problems and explore solutions to complex societal challenges. Policy and practice experiments involve 'learning by doing', enabling creativity, collaboration, and room for failure. They have gained traction following increased attention to climate change adaptation and sustainability transitions and emphasis on public sector innovation.

Policy and practice experiments vary in their objectives and focus but should have a **clear purpose**. A helpful distinction is between experiments that explore problems and those that generate solutions. Developing an experiment involves identifying **practical actions**, drawing from a **flexible toolbox of methods** suited to the specific context.

Experiments can be a powerful tool for policy and practice. They can help **translate visions for the future into concrete local actions**. They can **bring stakeholders together**, and **shape space for innovation**. Potential outcomes include enhancing knowledge, challenging conventional wisdom, refining solutions, and demonstrating alternatives.

However, policy and practice experiments are not without **challenges**. Their outcomes depend on their implementation, but can be constrained by time, resources, and capacities and have potential negative consequences. While hopes are often high that small experiments will catalyse wider change, lasting impact and real transformation remain difficult to achieve.

Policy and practice experiments offer **promising ways to tackle problems and address complex challenges**, but their effectiveness depends on **strategic implementation, stakeholder activation**, and a **realistic understanding of their limitations**.

Background

Experiments are typically associated with scientists working in carefully controlled laboratory conditions. Over the past decade, however, 'lab' terminology has entered policy and practice contexts. For example, Living Labs (Voytenko et al. 2016) and public sector innovation labs (Lewis et al. 2020) are increasingly using 'experiments' to describe "**real-world interventions**" (Torrens & von Wirth 2021: 4) that **aim to address complex policy problems and societal challenges**.

In policy and practice, an experiment is a **novel attempt to tackle a problem** through '**learning by doing**'. These experiments typically embrace creativity and collaboration and provide room to fail (Ansell & Bartenberger 2016, Scholl & Kemp 2016).

Experimental **methods**, or practical ways of working, can be distinguished from experimental **governance**, or ways of implementing policy at a local level (Lewis et al. 2020). In the latter, **local government** has an important role in experiments as enablers, partners, and promoters (Eneqvist & Karvonen 2021, Mukhtar-Landgren et al. 2019).

Several trends have influenced the emergence of policy and practice experimentation, including:

- Increasing awareness of **climate change** and action for **sustainability transitions** (Sengers et al. 2021, Torrens & von Wirth 2021, Voytenko et al. 2016),
- A growing urban and **place-based agenda** (Bulkeley & Castán Broto 2013, Smeds & Acuto 2018),
- New possibilities offered by **digitalisation** and big data (Acevedo & Dassen 2016),
- Emphasis on **public sector innovation** (Lewis et al. 2020) and **co-producing public policy** (McGann et al. 2021).

To date, much research views cities as spaces for experimentation, but experiments need not be exclusively urban. Several recent projects have established Living Labs in rural areas, including ROBUST, RUSTIK, and GRASS Ceiling.¹

Evidence

Types of policy and practice experiments

Research on policy and practice experimentation has attempted to define an 'experiment' and identify ideal types. Though definitions remain debated, scholars agree that a worthwhile experiment **needs an explicit purpose** (Bulkeley & Castán Broto 2013, Karvonen 2018, von Wirth et al. 2019). Purposes include establishing good practice, challenging existing knowledge (Bulkeley & Castán Broto 2013), or demonstrating possibilities for change (Huitema et al. 2018, Voytenko et al. 2016).

Experiments differ widely according to their **ideals and objectives, theoretical foundations, analytical emphasis**, and the **main actors** involved (Sengers et al. 2021). A helpful distinction (Caniglia et al. 2017) can be drawn between:

- **Experiments on problems**, which examine and explain existing conditions. They may explore the nature and causes of a problem or challenge conventional wisdom (Lewis et al. 2020).
- **Experiments on solutions**, which design or test future options. They may iterate and refine a particular solution or generate and trial multiple alternatives (Ansell & Bartenberger 2016).

Developing an experiment

Generally, developing an experiment requires **identifying an action or intervention** that will produce useful evidence (Caniglia et al. 2017). Because the differences above make it hard to follow a single model, experimentation in practice draws upon a flexible **toolbox of methods** (Huitema et al. 2018, Lewis et al. 2020) that suit the specific context. Methods from 'design thinking' are often used (Lewis et al. 2020).

Research offers several **recommendations for developing an effective experiment** (e.g., Acevedo & Dassen 2016, Bulkeley et al. 2016, Karvonen 2018, Scholl & Kemp 2016, Voytenko et al. 2016), including:

- Having a **coherent vision** and **strategic goals**,
- Participating in or convening an influential **network**, including local governance,
- Involving **partners and stakeholders** in designing the experiment, and

¹ See: <https://rural-urban.eu/>, <https://rustik-he.eu/>, <http://www.grassceiling.eu/>

- Building in **feedback loops** and **opportunities for learning**.

Advantages and benefits

Experiments can help bring people together to **translate visions for the future into concrete local action** (Bulkeley et al. 2019, von Wirth et al. 2019). Experiments may also offer **protected space for innovation** to develop (Bulkeley & Castán Broto 2013, Savini & Bertolini 2019).

Experiments are commonly advocated as a way of '**learning by doing**' (Bulkeley et al. 2016, Mukhtar-Landgren et al. 2019, Voytenko et al. 2016) and can be designed to enable stakeholders to learn about issues that matter to them (Scholl & Kemp 2016). Some argue that **co-production** with stakeholders is a valuable process regardless of the experiment's outcomes (McGann et al. 2021).

The results of any experiment need to be considered *beyond* the experiment itself (Sengers et al. 2021). This includes **impact** over time, **influence** in other places and contexts, and **practical progress** towards addressing challenges. Research (von Wirth et al. 2019) points to three positive pathways:

- Outcomes from the experiment become **locally embedded**.
- Elements of the experiment are **shared and reproduced** in other places.
- The experiment is **scaled up** in content or ambition.

Potential pitfalls and drawbacks

Policy and practice experiments can be impactful, but they might equally disappear with little trace (Savini & Bertolini 2019). Experiments enabled by short-term **funding** can be fleeting (Torrens & von Wirth 2021). Whether experiments deliver practical outcomes partly depends on **how they are operationalised** (Lewis et al. 2020, Voytenko et al. 2016) and the **capacities and resources** of those involved (von Wirth et al. 2019).

Though hopes are pinned on small local experiments eventually 'adding up' to wider change (Sengers et al. 2021), experimentation can struggle to catalyse systemic impact (Lewis et al. 2019, Nevens et al. 2013). The **challenges** (Smeds & Acuto 2018) include:

- The **scale of change** required,
- The amount of **actor coordination** needed, and
- The **resilience of existing conditions** and structures.

Some studies suggest that experiments may ultimately be limited to doing what is achievable, rather than what is necessary to tackle complex challenges (Torrens & von Wirth 2021). It is also important to remember that experiments can have both **positive and negative outcomes** (Huiteima et al. 2018, Torrens & von Wirth 2021).

Final overview

Scholars continue to debate how policy and practice experimentation should be defined, designed, and delivered. Clearly, **not every new or different local initiative should be called an 'experiment'** (Huiteima et al. 2018, Karvonen 2018). But because experiments are diverse, there is **no single model for best practice**.

Policy and practice experiments work by bringing people together to envisage better futures, identify interventions, and learn by doing. They can be used to creatively **explore**

problems and test solutions. While we should not expect local initiatives alone to catalyse transformative change, experiments can be **seeds for new collaboration and practical action.**

There are high hopes that experiments can be **"the starting point (or seed) for desirable societal transformations"** (Huitema et al. 2018: 144). However, there are **several challenges**, and some scholars question whether experiments can create lasting change at scale (e.g., McGann et al. 2021, Sengers et al. 2021, Smeds & Acuto 2018, Torrens & von Wirth 2021).

Although much research to date focuses on urban experiments, policy and practice experimentation can clearly be applied to **foster innovation and tackle challenges in rural contexts.** There remains a need to identify and evaluate rural examples and draw lessons for future practice.

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