Review article

Stakeholder-engaged research: a multidisciplinary historical analysis

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Abstract

The involvement of stakeholders in research – from design, production and communication to use – is recognised as essential to producing impactful research. However, approaches to involving stakeholders in research vary greatly between different fields. This article conducts a multidisciplinary historical analysis of stakeholder-engaged research to offer an integrated perspective on engagement practices across disciplines. It identifies common influences, objectives, trends and challenges, proposing frameworks to support interdisciplinary analysis and understanding. The analysis identifies interconnected approaches that could benefit from mutual learning and exchange. Approaches emerging from sociopolitical movements orient around objectives of empowerment and emancipation, those responding to complexity tend to focus on producing better research that solves societal problems, while accountability-driven approaches centre on research use and impact. This article broadens the diversity of approaches and epistemologies discussed in the literature by including disciplines neglected in previous reviews. Building on the widely cited three-generations model, it proposes a configuration- and complexity-based framework for comparing stakeholder-engaged research approaches, moving beyond the chronological conception of stakeholder-engaged research development. This multidisciplinary historical analysis provides a valuable resource for scholars and practitioners to understand the range of possible approaches to stakeholder engagement, facilitating

approach selection for specific use cases and contexts, as well as opportunities for interdisciplinary learning and collaboration.

Key messages

- Stakeholder engagement approaches are influenced by historical and intellectual developments, with those from sociopolitical movements focusing on empowerment and emancipation, those responding to complexity aiming to solve societal problems, and accountability-driven approaches centring on research use and impact.

- Stakeholder-engaged research approaches have evolved across multiple disciplines, including social sciences, science and technology, business, management, humanities and design, and they are interconnected, with common origins, influences and objectives identified across disciplines. Thus, traditional disciplinary boundaries may restrict our understanding, application and development of stakeholder-engaged research.

- Proposed frameworks, such as the 'four waves' and 'four configurations', can be used to more effectively analyse and compare stakeholder-engaged research approaches, enabling interdisciplinary learning and collaboration, and effective design, implementation and evaluation.

Introduction

The involvement of stakeholders is increasingly recognised as essential to producing impactful research (Bandola-Gill et al., 2022; Bozeman et al., 2013; Nguyen et al., 2020). Engaging different stakeholders in the research process can lead to better research outcomes, including improved research governance, production, communication, uptake and adaptation of knowledge (Fransman, 2018). There is also increasing demand for academic research to demonstrate its impact on the economy, society and the communities where research is conducted, which has brought greater attention to the practice of engaging stakeholders in research (Lindhult and Axelsson, 2021).

The approaches to involving stakeholders in research, however, can vary greatly among different fields, each with their own origins, theoretical underpinnings and challenges. While this diversity may be inevitable, or even desirable, given the multitude of disciplines and actors involved, it also creates challenges for accessibility, communication and interdisciplinary learning. Yet, as Fransman (2018: 187) has noted, attempting a naive push towards consolidation risks the 'danger that approaches to engagement become divorced from their roots, cobbled together opportunistically and hammered into programmes and/or policy to serve instrumental purposes without adequate consideration of the contexts and agendas that defined and nurtured them'.

In response to these challenges, this article conducts a multidisciplinary historical analysis of stakeholder-engaged research, with particular consideration to the historical and theoretical roots underlying different approaches. Given the plurality of terms used across disciplines, stakeholder-engaged research (SER) is used as an umbrella term capturing various approaches that involve stakeholders in research processes, including research engagement, participatory research and research partnerships, as well as knowledge transfer, translation, exchange, mobilisation and co-production. This review provides an integrated overview of stakeholder engagement practices within the social sciences, science and technology, business and management, design, and arts and humanities. Common influences, objectives, trends and challenges are identified across these diverse bodies of literature, with frameworks proposed to facilitate interdisciplinary analysis, and recommendations made for promising areas of future research.

This article makes several major contributions. First, it is the most expansive analysis of research engagement approaches in these disciplines. In the limited number of multidisciplinary reviews of engaged

research to date, the disciplines of business, management and design approaches are rarely included. Second, by providing an accessible yet contextualised synthesis, the article offers insights into the evolution of stakeholder-engaged research, and demonstrates the shared histories and mutual influences of SER development across disciplines. Third, the article develops integrated frameworks for understanding stakeholder-engaged research, based on its origins, objectives, complexities and configurations. The article provides a valuable resource for scholars and practitioners to understand the range of possible approaches to stakeholder engagement, facilitating the selection of appropriate approaches for specific use cases and contexts, as well as opportunities for interdisciplinary learning and collaboration.

Method

Multidisciplinary historical analysis

In this study, a multidisciplinary historical analysis is employed to examine the evolution and application of stakeholder-engaged research across various academic disciplines. This approach is particularly suited to uncovering the dynamics and evolution of a field (Nathanael and Marmaras, 2005), including 'the cultural circumstances and ideological assumptions that underlie phenomena and the … economic, social, and political forces … [that] create[e] them' (Mason et al., 1997: 307). By applying this methodology with a multidisciplinary lens, this study not only traces the evolution of SER, but also identifies sociopolitical, economic and ideological-cultural influences across fields, revealing interdisciplinary intersections. This multifaceted approach provides a more expansive and nuanced understanding of SER development, highlighting disciplinary overlaps and the interwoven contributions of academic fields and broader societal factors.

This multidisciplinary historical analysis considered peer-reviewed journal articles or book chapters published from 2012 to 2022. This 10-year span was chosen to ensure a broad review of influences, objectives, trends and challenges within SER across various disciplines. This approach was chosen due to the breadth of disciplines and approaches covered, which can make systematic synthesis challenging, as the methods and outcomes of research studies can vary widely. Thus, systematic reviews and meta-analysis are less appropriate in this context.

Article and discipline selection

The selection of articles for this study was conducted through a two-round process designed to provide a broad overview of SER approaches within a multitude of disciplines.

Round 1: selection of multidisciplinary reviews

The initial phase focused on multidisciplinary literature to identify and understand the wide array of disciplines and approaches engaged in SER. This was deemed crucial for gaining a foundational overview of how SER is conceptualised and practised within various fields.

Three search tools were used: Google Scholar, the University of Sydney's library catalogue (a discovery layer that connects to the library's physical and electronic holdings, and a wide array of academic journal services) and Elicit (a search tool that incorporates language models such as GPT-3). These were searched using an initial set of keywords, which were expanded using a snowball strategy and cited reference searching. The following search strings were employed:

1) ('research collaboration') OR ('collaborative research') OR ('research co*') OR ('co* research') OR ('research partnership') OR ('research engagement') OR ('engaged research') AND
2) ('literature review') OR ('narrative review') OR ('systematic review') OR ('scoping review') OR ('rapid review') OR ('bibliographic') OR ('meta-*') AND
3) ('*-disciplinary') OR ('*disciplinary').

Table 1. Inclusion and exclusion criteria

Inclusion criteria	Exclusion criteria
• Peer-reviewed journal articles or book chapters • Published in English • Published from 2012 to 2022 • Includes discussion of multiple approaches within or across disciplines	• Articles irrelevant to SER • Articles focused on specific populations (for example, migrant studies using community-based participatory research) or specific domains (for example, participatory research partnership in rehabilitation)

Note that the term 'stakeholder-engaged research' is a term adopted specifically by this article to encompass approaches from a variety of fields that do not use a consistent nomenclature. As such, it was not included in the search strings.

Table 1 lists the inclusion and exclusion criteria applied.

The initial search identified 5,077 articles. Exclusion criteria were then applied, yielding 272 articles. Article abstracts were reviewed to determine those most relevant to the research question. A close reading of 71 full-text articles led to the selection of 6 multidisciplinary reviews that collectively provided the most expansive coverage of approaches across disciplines.

Round 2: selection of reviews from specific disciplines

While the multidisciplinary reviews provided a breadth of SER approaches across disciplines, there were two limitations in the available depth of information. First, while certain approaches within public policy and health were mentioned, they were not discussed in detail. This prompted a revisitation of the previously assessed 71 articles from the first round, from which three additional articles and a book chapter were identified to address this informational gap.

Second, the multidisciplinary reviews highlighted the mention of several disciplines, notably business, management, humanities and design, which seemed to have influences across multiple SER approaches, but which were only cursorily explored in the multidisciplinary literature. To address this gap, a targeted search was conducted with the additional string ('business' OR 'management' OR 'design' OR 'humanities'). The methodological search terms were removed to include reviews of these specific disciplines. This yielded 15,088 results, and the same process as Round 1 was applied; 242 articles passed manual title screening, with 54 full-text articles selected for assessment based on abstract review.

Six articles and book chapters were selected from the targeted search (see Table 2).

The approaches discussed in the articles and book chapters have been classified under four major disciplines: the social sciences, including public policy in health, education and social care (Fransman, 2018) and development studies (international and community development); science and technology; business and management; and design, arts and humanities. While design may often be subsumed under arts, it is explicitly cited, given its prominence in the SER literature.

Limitations and positionality

This article is a foundational exploration, embarking on a broad, multidisciplinary examination of stakeholder-engaged research within academic literature. In striving for disciplinary breadth to lay the groundwork for future inquiries, certain trade-offs were inevitable, notably in terms of geographical coverage and the inclusion of non-academic literature. These decisions, while necessary for achieving the objectives of the article, introduce key limitations that readers should consider when interpreting the findings.

As a Chinese social science researcher who collaborates closely with practitioners in the Asian food systems sector, I recognise the under-representation of diverse cultural and practice-oriented perspectives within the scope of this study. In particular, the focus on English-language, peer-reviewed literature predominantly featuring contributions from Western, developed countries, reflects a deliberate

Table 2. Overview of selected literature and included disciplines

Author(s)	Year	Publication/publisher	Publication discipline	Disciplines discussed
Multi-/cross-/interdisciplinary reviews				
Fransman	2018	Research for All	Education	Higher education, science and technology, public policy (health, social care and education), international development, community development
Bandola-Gill et al.	2022	Evidence & Policy	Public policy	Science and technology studies (STS), environmental sciences (environmental management), sustainability science/research, environmental sciences (climate change), health sciences
Greenhalgh et al.	2016	The Milbank Quarterly	Health	Health, business studies, design science, computer science and community development
Gonera and Pabst	2019	Journal of Innovation Management	Business and management	Business, design
Nguyen et al.	2020	Health Research Policy and Systems	Health	Health/medicine/nursing, education, philosophy, economics, public policy, social sciences
Lindhult and Axelsson	2021	International Journal of Managing Projects in Business	Business and management	Business, science and technology
Disciplinary reviews				
Boaz et al.	2019	Policy Press (book chapter)	Public policy	Public policy
Hopkins et al.	2021	Policy Design and Practice	Public policy	Public policy
Davies et al.	2015	Health Services and Delivery Research	Health	Health
Bager	2018	European Business Review	Business and management	Management
Skute et al.	2019	The Journal of Technology Transfer	Business and engineering	Business
Young and Freytag	2021	Industrial Marketing Management	Business and management	Marketing
Zamenopoulos and Alexiou	2018	University of Bristol: AHRC Connected Communities Programme (book chapter)	Design	Design
Antonini	2021	Journal of Design Thinking	Design	Design
Greenbaum and Loi	2012	CoDesign	Design	Design

but restrictive choice that may not fully encompass the many variants of SER, particularly those from the Global South.

The ambition of this article was not to exhaustively catalogue all perspectives within SER, but to highlight the shared elements and challenges that transcend disciplinary boundaries, and thereby develop conceptual frameworks for understanding this practice. These frameworks aim to support future research efforts to explore SER in greater depth, extending beyond the academic domain to include a broader array of geographic, disciplinary and practice-oriented perspectives.

Interdisciplinary influences and shared objectives

As seen from the systematic search, comprehensive review literature on SER development in the last 10 years has been limited, with most authors focusing on a particular field or type of engagement. It is thus unsurprising to see several authors conjecturing that SER approaches have evolved independently across disciplines (Bandola-Gill et al., 2022; Greenhalgh et al., 2016). This review, however, finds that this is not the case. When comparing the development of SER across the social sciences, science and technology, business and management, and design, arts and humanities, it is evident that almost all disciplinary approaches have been influenced by one of three common origins. This, in turn, has led to shared objectives and values across disciplinary approaches. Thus, before engaging more deeply with the disciplinary evolution of SER, this section provides an overview of the three common influences and objectives of SER, originating with the rise of social movements, the recognition of complexity and a culture of accountability.

Social movement influences

The social and political climate in the 1960s and 1970s was ripe for the development of engaged research approaches centred on power and justice. As Wallerstein and Duran (2008: 26) observe, the 1960s saw:

> simultaneous crises, within academia and sociopolitical movements, [which] challenged relationships between universities and society and precipitated a global search for new social theories and practices of inquiry. Issues such as ownership of knowledge, the role of the researcher in engaging society, the role of community participation and agency, and the importance of power relations began to permeate the research process with the challenge to use knowledge to promote a more equitable society.

This gave rise to a number of engaged approaches to research that involved citizens as participants, rather than subjects, of research. Global health movements and activism in the United Kingdom, for example, led to the development of 'patient and public involvement (PPI) in health and social care research' (Fransman, 2018: 195), emphasising the empowerment of patients and marginalised communities in the research process. Post-war political movements around industrial democracy in Scandinavia drove the development of action research and socio-technical design, which sought to empower workers to manage their own workplaces. Human and social rights movements focused on housing redevelopment programmes in the United States and United Kingdom gave rise to community design (Zamenopoulos and Alexiou, 2018). Finally, social and intellectual movements in South America precipitated the 'Southern Tradition' or 'emancipatory research' (Nguyen et al., 2020: 12), which challenged mainstream approaches to research, and which aimed to shift power from expert development consultants to Indigenous voices and epistemologies (Fransman, 2018).

SER approaches originating from social movements share objectives of social justice and emancipation, aiming to produce knowledge for social change and self-determination (Nguyen et al., 2020). These values have been further augmented by contemporary writers from Indigenous and Global Southern perspectives who have advocated for 'knowledge democracy' and 'cognitive justice', which entails equally valuing community and academic expertise in collaborative knowledge generation.

Overall, these approaches reject the power asymmetry between researchers and 'subjects', pushing back against dominant positivist and empiricist models of science (Lindhult and Axelsson, 2021).

The recognition of complexity

During the 1990s, the traditional, or 'Mode 1', perspective of science (Nguyen et al., 2020) faced additional criticism. This view emphasised the independence of researchers and institutions that operate within 'a system of academic tenure, peer-reviewed publications and criteria for validity, scientific expertise … [which] is frequently carried out in disciplinary silos' (Nguyen et al., 2020: 12). However, following the development of social movements in the 1970s, the prevailing belief that societal challenges could be overcome through control and predictability gave way to a broader recognition of the complex and uncertain nature of both social and scientific problems (Bandola-Gill et al., 2022; Greenhalgh et al., 2016; Shani and Coghlan, 2021). Critics scrutinised Mode 1 science as elitist, hegemonic, theoretical in focus, and insufficient in addressing practical problems (Bager, 2018; Greenhalgh et al., 2016).

In response, the 'Mode 2' paradigm emerged, championing research that is 'reflexive, transdisciplinary, relevant, scientifically valid, issue-driven, context-specific and socially robust' (Nguyen et al., 2020: 12). Nevertheless, it drew criticism for its perceived lack of rigour and perceived failure to generate peer-reviewed publications (Bager, 2018). Despite these criticisms, Mode 2 thinking gained traction, and it was incorporated across different disciplines and geographical regions, although often under different terminologies. In the United States, the Mode 1/2 taxonomy is mirrored in the 'technocratic' versus 'democratic' models of community engagement (Greenhalgh et al., 2016: 397). In the business world, it is reflected in the 'rigour versus relevance' debate.

Mode 2 is also explicitly cited as underpinning SER approaches across several disciplines, from collaborative management research (Shani et al., 2017) and the 'triple helix' (Etzkowitz and Leydesdorff, 2000: 118) model in business, to transdisciplinarity in science and technology. In the realm of public policy, the rise of 'co-creation' or 'co-production', particularly in health care (Greenhalgh et al., 2016), exemplifies the adoption of Mode 2 thinking, a concept that has been increasingly embraced by funders and policymakers (Bager, 2018).

A culture of accountability

The 1990s and 2000s saw a proliferation of SER, as the Mode 2 paradigm shift also intersected with a rising culture of accountability (Lindhult and Axelsson, 2021). Funders and regulators demanded greater impact, accountability and public engagement with research (Fransman, 2018). This 'impact agenda' led to an additional set of requirements for researchers, as public and private funding institutions began to demand the measurement of the societal impact and practical relevance of their investments (Bager, 2018). This has had influence across disciplines.

In the social sciences, evidence-based policy and practice (EBPP) emerged in response to calls for policy to be informed by rigorous research evidence (Best et al., 2009), and the field of international development saw the growth of non-governmental organisations partnering with academics as they faced increasing pressure from donors and supporters to provide rigorous reports on the impact of their work (Fransman, 2018). The sciences witnessed a rise in co-productionist models centred on the use and usability of knowledge, while the humanities saw increased public activities, entrepreneurship and the application of arts in science communications.

The impact agenda, however, has been met with mixed responses within the academy. In the humanities, some scholars have 'rallied to defend the university from new commodification and managerial control, arguing for preservation of existing structures and processes', while some social scientists 'critique[d] the economic interpretation of impact and the commercialization of research' (Fransman, 2018: 192). Additionally, some academics view engagement merely as a set of administrative activities (Fransman, 2018), or as a means of acquiring funding (Bager, 2018).

Alternatively, there has also been a growing movement towards 'engaged scholarship'. Introduced in the mid-1990s, this framework, encompassing the three areas of teaching, research and service, seems to traverse all three influences. First, it values social justice and the democratisation of knowledge (Beaulieu et al., 2018; Nguyen et al., 2020), sharing overlaps with earlier movement-based approaches. Second, it calls for boundary crossing between disciplines, and high-quality scholarship that meets societal needs rather than those of individuals or institutions, echoing tenets of Mode 2 thinking. Finally, in line with the impact agenda, it is founded on the belief that academic research needs to be socially accountable.

This section has shown that the impact agenda, as well as the Mode 2 paradigm and the history of social movements, have had significant influence on the development of SER across disciplines. The responses to these events, both supportive and critical, have expanded our understanding of what engagement can mean in the context of research.

Engaged scholarship has particularly highlighted the potential interconnectedness of influences from social movements, Mode 2 science and the impact agenda. It is, however, far from the only approach that traverses influences (and disciplines), as the following discussion demonstrates.

The disciplinary evolution of SER approaches

The following discussion explores the development of SER in the social sciences, science and technology, business and management, and design, arts and humanities.

The social sciences

Within the social sciences, this article focuses primarily on the fields of public policy (including health, education and social care) and development studies (including international and community development), where there has been substantial engagement with stakeholders (Fransman, 2018).

One of the most widely cited approaches to SER is participatory research, which emerged in the 1970s as a critique of mainstream research approaches. It aimed to counter existing top-down practices that neglected input of local communities, shifting power dynamics in research by giving a voice to marginalised or disadvantaged groups. The driving force behind this approach is putting knowledge into action, with the goal of promoting equity, social justice, self-determination and positive change. As such, capacity building and researcher humility (that is, reflecting on one's positionality of power and privilege) are integral parts of the participatory research process.

An early approach that emerged in the 1970s in the field of health is patient and public involvement (PPI), originating in global health social movements and health activism (Brown and Zavestoski, 2004). Driven by excluded groups, PPI has led to the integration of models based on shared decision making into health policy and practice, although it has been critiqued for being limited to consultation and engaging a tokenistic subset of participants (Ocloo and Matthews, 2016).

Over time, different branches of participatory research have emerged. The 'Northern tradition', also known as action research, originated in the UK and the US. Its objective was to involve community members and workers in collaborative and iterative efforts towards social and organisational change (Nguyen et al., 2020). The 'Southern tradition', also known as emancipatory research, originated in Latin America, and has a focus on producing knowledge for social change. It emphasises social justice, power and self-determination for marginalised communities (Nguyen et al., 2020). More recently, emancipatory research has been adopted in North America as community-based (participatory) research (CBPR), calling for 'the authority of communities to direct the research design and methodologies' (Nguyen et al., 2020: 12) and '"equitable" engagement of partners throughout the research process' (Greenhalgh et al., 2016: 405).

Another approach emerging from the North is evidence-based policy and practice (EBPP). Responding to demands for evidence-informed policy (Best et al., 2009), EBPP focuses on bringing

together knowledge users and producers in order to generate knowledge that is used in decision making (Bandola-Gill et al., 2022). EBPP has gained significant traction, and it has permeated various public policy sectors, including health, social care and education (Davies et al., 2015). It has been described as developing across 'three generations' (Best et al., 2009), from first-generation linear models to third-generation systems models (Davies et al., 2015).

First-generation models, often referred to as knowledge transfer and translation, 'either push evidence from academia (Dissemination and communication) or pull it into government (through formal evidence requests or facilitating access)' (Hopkins et al., 2021: 343). These models presuppose a linear connection between research production and communication, and its subsequent adoption and use (Hopkins et al., 2021), and they are extensively applied in health care (Boaz et al., 2019). Critics, however, argue that these models are excessively individualistic and rational, 'empirically unfounded and philosophically and ideologically flawed' (Greenhalgh et al., 2016: 395). They suggest that these models overlook the social and collective ways in which knowledge is integrated into practice (Davies et al., 2015).

This critique led to the development of second-generation, relational models, also known as knowledge exchange. This approach grapples with the 'two communities' dilemma of researchers and practitioners, who often have divergent goals, motivations and priorities, impeding their ability to understand and interact effectively (Boaz et al., 2019). Knowledge exchange seeks to reconcile these cultural and institutional disparities by fostering enduring partnerships between these groups (Bandola-Gill et al., 2022), and enhancing their research and engagement abilities (Hopkins et al, 2021). However, these second-generation models have faced critique for failing to adequately address issues of power, knowledge definition (Davies et al., 2015) and the role of context (Boaz et al., 2019).

In response, a third generation of approaches emerged, sometimes referred to as 'knowledge mobilisation'. Along with acknowledging multiple sources of non-academic knowledge (Haynes et al., 2020), this approach puts context at the forefront, drawing upon complexity theory, science and technology studies, policy studies, organisational learning, knowledge management, and the diffusion of innovation (Boaz et al., 2019). This led to the emergence of new system-based models and frameworks (Nilsen, 2015), with increasing discourse on knowledge and evidence ecosystems, and efforts to foster leadership, incentivise participation and develop infrastructure. However, the general lack of practical tools, strategies, operational models and case studies impedes the widespread implementation of systems approaches (Davies et al., 2015; Hopkins et al., 2021).

Interestingly, another set of approaches, coined 'co-approaches' by Grindell et al. (2022), began to emerge in the 2000s. These participatory approaches, including co-production, co-creation and co-design (Grindell et al., 2022), prioritise the engagement of citizens and consumers in the creation of products and public services, and they have been progressively adopted in practice, especially within the health-care sector. Drawing inspiration from various disciplines such as 'business studies ("value co-creation"), design science ("experience-based co-design"), computer science ("technology co-design"), and community development ("participatory research")' (Greenhalgh et al., 2016: 393), co-approaches concentrate on 'the active, iterative, and collaborative process of creating, sharing, and utilizing research evidence' to deliver social benefits, and to demonstrate 'accountability for the investment of public funds in health research' (Nguyen et al., 2020: 11). They strive to include 'all forms of knowledge, such as experience, values, and beliefs' (Grindell et al., 2022: 2), addressing the power dynamics and knowledge representation issues inherent in relational models. As such, co-approaches could be considered as a further evolution of second-generation approaches.

Science and technology

A generational pattern is also seen in science and technology, which develops from linear and relational approaches in science communications to more systems-based and context-sensitive, co-productionist models.

Historically, laboratory-based science and society were deliberately separated to prevent harm to the public and to laboratory materials. However, in the 1980s, there was a growing perception that the public lacked support for science and technology, resulting in an agenda for public education to raise the level of scientific literacy in the UK (Fransman, 2018). This gave rise to 'deficit' models of engagement, which sought to increase public understanding of science through consultation and awareness-raising initiatives. Over time, this evolved into a more interactive, 'dialogic' approach, which emphasised two-way engagement in science production, communication and policymaking. The dialogic approach, however, faced criticism for its narrow application to certain scientific fields, such as climate science and biomedical studies, leading to the development of co-productionist models that emphasised more context-driven and diverse participation and expertise (Fransman, 2018).

Bandola-Gill et al. (2022) identify four forms of co-production within science and technology, ranging from applied to conceptual approaches.

Boundary management is an applied approach that seems to extend from dialogic models of science communication. It focuses on bridging the gap between scientists and policymakers, in order to facilitate the use of scientific knowledge in decision-making processes. This is accomplished by mediating differences in epistemologies and practices, and by establishing a shared vision of what 'usability' means in different decision-making contexts. To bring knowledge users and producers closer together, boundary management adopts similar strategies of 'linking, brokering, and translating knowledge' (Bandola-Gill et al., 2022: 16) seen in linear and relational models of EBPP, such as cross-disciplinary workshops, joint authoring of publications, and the establishment of boundary organisations (Bandola-Gill et al., 2022).

While boundary management focuses on integrating knowledge produced from existing scientific practices, transdisciplinarity seeks to create new ways of producing science, extending knowledge production by bringing together a variety of actors, disciplines and forms of knowledge (Gonera and Pabst, 2019). Underpinned by Mode 2 science, it assumes that monodisciplinary scientific knowledge is insufficient for solving complex problems, requiring knowledge produced in the context of application (Bandola-Gill et al., 2022). However, the degree of stakeholder engagement in transdisciplinary projects has been questioned, and scholars may struggle, as interdisciplinary work is often more difficult to execute and less valued within academia (Gonera and Pabst, 2019). Thus, transdisciplinarity proposes to expand the criteria by which research is judged, proposing usability in addition to academic excellence.

This is echoed in a more conceptual form of co-production: 'knowledge democracy'. This concept has already been discussed in participatory traditions within the social sciences. In science and technology, there continues to be emphasis on the integration of local and Indigenous knowledge, but towards the goals of improving governance and management, and solving complex challenges such as sustainability (Tengö et al., 2014). Like transdisciplinarity, it aims to increase the diversity of, and interaction between, different forms of knowing (Cornell et al., 2013), and it acknowledges the need to go beyond academic criteria when assessing knowledge. Like participatory traditions, knowledge democracy in science and technology recognises the 'lack of universality of knowledge' and the need to keep knowledge systems open (Bandola-Gill et al., 2022: 13). This includes 'local knowledge, indigenous knowledge, practitioner knowledge, traditional knowledge, transdisciplinary knowledge, social science knowledge, natural science knowledge, and technical knowledge' (Bandola-Gill et al., 2022: 14). It also notes the importance of bridging epistemological perspectives and tensions, including 'local vs generalised knowledge, informal vs formal, novice vs expert, tacit vs implicit vs explicit, and traditional vs local vs scientific' (Bandola-Gill et al., 2022: 13).

A final conceptual understanding of co-production is represented as the 'science–politics relationship'. This challenges the traditional detachment of science from society (seen in early science communications), pushing back against the 'realist ideology that persistently separates the domains of nature, facts, objectivity, reason, and policy from those of culture, values, subjectivity, emotion, and politics' (Lindhult and Axelsson, 2021: 17). This philosophical position takes a social constructionist view, seeing science and policy as socially constructed phenomena that are interwoven with society and

mutually constitutive (Bandola-Gill et al., 2022; Lindhult and Axelsson, 2021). Echoing Mode 2 thinking, it is concerned with 'the investigation of knowledge societies in all their complexity: their structures and practices, their ideas and material products, and their trajectories of change' (Jasanoff, 2004: 2), and it seems to have influences beyond science and technology. The study of, and change in, the science–society relationship, for example, has been cited as contributing to the increasing uptake of co-creation (Greenhalgh et al., 2016) in health care, and the development of the triple helix model in business (Lindhult and Axelsson, 2021), which will be elaborated upon in the next section.

Business and management

While the sciences and social sciences have both seen a general increase in engagement, SER in business and management has followed a more fluctuating trajectory. This might be surprising, given the discipline's origins in practice. Knowledge was traditionally produced inductively, 'based on insights from practitioners … concerned with concrete, real management problems in "the world of practice" … disseminated in non-refereed reports, books, and popular press publications; and taught in vocational and trade schools' (Chen and Hitt, 2021: 178). However, early management research was criticised for its lack of rigour, impact and theoretical contribution (Chen and Hitt, 2021; Shani et al., 2017). This led to a focus on introducing more scientific and discipline-based theories and methodologies into management education and scholarship, with business research becoming increasingly abstract and detached from practice (Shani et al., 2017).

This continues to manifest in today's research culture, and it creates several barriers for SER development. First, the preference in research norms for methodologies that demonstrate academic rigour often supersedes those more suited to addressing the needs of stakeholders. Leading journals and funders push researchers towards 'ever-more-rigorous methods of enquiry' and 'sophisticated measurement techniques' (Davis et al., 2013), while collaborative research outputs such as qualitative findings and case studies often face limited receptivity (Bager, 2018; Young and Freytag, 2021). This situation is exacerbated by a longstanding tradition in business consulting that favours 'easy-in-and-easy-out' research strategies to address micro-level problems and deliver rapid results, in contrast to stakeholder-engaged approaches that most often require longer term relationship building and inter- and transdisciplinary perspectives. Further, the demand for theoretical consistency from journals often discourages holistic and interdisciplinary endeavours, even within the field itself (Chen and Hitt, 2021). This has led to a fragmentation within management literature, possibly accounting for the dearth of comprehensive reviews of SER across business disciplines.

Against this internal environment, the 'impact agenda' seems to have steered business schools towards adopting more linear and relational SER methodologies. Similar to disciplines discussed above, this manifests as knowledge transfer through 'publications and published reports, public conferences and meetings' (Skute et al., 2019: 924), as well as knowledge exchange via 'joint research and development projects, consultancy, training activities and community engagement' (Bager, 2018: 2). The previously mentioned tradition of action research has continued in industrial settings, but it is largely marginalised in the business literature, as it continues to face critique regarding its academic validity (Shani and Coghlan, 2021). In general, SER in business has been comparatively limited, with an 'inability or unwillingness of academic researchers to translate their insights for practitioners' (Chen et al., 2013: 2). Business scholars lack incentives to pursue SER, which is more difficult to control, more 'time consuming and uncertain than desk research, and with lower publication chances' (Bager, 2018: 11). This, in turn, has led to increasing estrangement and alienation of practitioners, who are becoming increasingly cynical of academic research and less willing to participate in management research (Chen et al, 2013; Young and Freytag, 2021).

Some scholars have proposed that successful SER requires a better alignment of incentives between researchers and stakeholders. Echoing the tenets of boundary management, recommendations include establishing common ground and goals (Baines et al., 2009; Young and Freytag, 2021), building

meaningful relationships, and identifying mutually useful research topics between business, government and academic stakeholders (Rynes et al., 2001). One example of alignment is seen in university–industry collaborations around innovation and academic entrepreneurship, which has been gaining recognition among scholars and practitioners (Mowery et al., 2001; Skute et al., 2019). While more traditional university–industry activities are more linear and relational in nature, such as licensing, patenting and incubation (Bager, 2018; Skute et al., 2019), more systems-focused approaches have also emerged.

The 'triple helix' model has received increasing attention as a 'catalyst for regional and national economic development' (Skute et al., 2019: 923). It focuses on tri-lateral networks and hybrid organisations that facilitate productive exchange between university, industry and government (Park et al., 2005). This includes institutional and community-based structures, such as entrepreneurial universities, communities or landscapes of practice, forums or trading zones (Antonacopoulou, 2022). The model has been further expanded to the 'quadruple helix', with the addition of the public as a fourth stakeholder, whose participation is seen as imperative for successful innovation policy (Carayannis and Campbell, 2009). The quadruple helix is based on a new 'Mode 3' paradigm, where 'teams work simultaneously across Modes 1 and 2, are adaptive to current problem contexts, co-evolve different knowledge and innovations, participate in civic engagements (beyond university–business–government) and link systems and system theory' (Nguyen et al., 2020: 12). Proponents of the quadruple helix model envision a 'democracy of knowledge', characterised by a pluralism of knowledge, innovation and paradigms, which is strikingly similar to the concept of knowledge democracy associated with participatory research and science and technology studies.

This cross-disciplinary overlap is also visible in the adoption of co-creation or co-creative design in business. This approach involves the public as consumers, in designing new services and products with companies and government bodies (Zamenopoulos and Alexiou, 2018). It is built on the concept of design thinking: 'a human-centered approach to problem-solving, creativity and innovation … that gained massive attention in the corporate world in … recent years' (Gonera and Pabst, 2019: 97). The involvement of consumers in the design and development process is seen to bring various benefits, including better customer understanding, ability to adapt to user needs, greater user acceptance, and risk and cost reduction, as well as contributing to capacity building, user engagement and creating transparency (Gonera and Pabst, 2019; Lam and Pitsaki, 2018).

However, the implementation of co-creation is not without its challenges. It necessitates a shift in perspective to acknowledge that all people are capable of creativity – a concept not widely accepted in the business community (Sanders and Stappers, 2008). Moreover, it demands significant cultural and structural changes within organisations, often challenging hierarchical structures by requiring power to be shared with potential customers and end users. This is a departure from the conventional 'expert' mindset in business. Last, co-creative design requires a certain level of comfort with ambiguity and uncertainty, which contrasts with the typical managerial mindset that seeks to mitigate risk and avoid failure (Gonera and Pabst, 2019). The different ways of thinking and conducting SER in design and creative fields are discussed further in the next section.

Design, arts and humanities

Like the business sector, the 'impact agenda' has played a significant role in propelling SER practices within the humanities, which have historically struggled to demonstrate their public contribution or cultural impact (Fransman, 2018). Particularly, there has been a rise in knowledge transfer activities, such as increased interaction with the media, participation in public lectures and debates, writing for general audiences, involvement in literary and arts festivals, and collaborations with galleries and schools (Burchell, 2015; Fransman, 2018). Economically driven activities in cultural innovation and entrepreneurship have also gained momentum. However, while many scholars have endeavoured to enhance the social and economic applications of the arts, others in the humanities have resisted the concept of 'use'. They argue

that 'academic knowledge is a representation of a particular (higher-level) cultural vision for society and, therefore, necessarily detached from the context of its use' (Fransman, 2018: 192).

Yet another response to the impact agenda is increased application of the humanities in cross-disciplinary settings. This includes 'a new convergence between creative and scientific research' (Groth et al., 2020: 329), using the arts to improve science communication, 'environmental practice engaging indigenous and "non-human" knowledges', 'patient engagement and responsible innovation', 'action research and participatory action research' (Fransman, 2018: 201), and one approach which has already received multiple mentions: co-design. As such, the following discussion will take a deeper dive into the evolution and broader influences of co-design.

Co-design is 'a broad umbrella term that refers to design processes that seek to combine the views, input and skills of people with many different perspectives to address a specific problem' (Antonini, 2021: 49). Dating back to social movements in the 1970s, it has also been called 'participatory design' (with strong links with participatory research), which, according to Sanders and Stappers (2008: 7), 'was the terminology used until the recent obsession with what is now called co-creation/co-design'. As an academic discipline, however, design is relatively new (Zamenopoulos and Alexiou, 2018: 20). It has developed a distinctive abductive epistemology, where knowledge is generated through the process *and* products of engagement, with some even arguing that the process brings greater benefit than the outcomes (Lam and Pitsaki, 2018). This has led to the interesting phenomenon that, while SER is prevalent across design traditions, it is generally not cited as research, both within design (where engagement is a norm), and in other disciplines, such as business and health care, where co-design approaches are applied. These factors may explain the lack of explicit discussion of SER within design and in the interdisciplinary SER literature. Nonetheless, the various traditions of co-design have been influential both in and out of design.

The Scandinavian worker movements of the 1960s are widely cited as the origin of co-design and action research, with which it shares intellectual and geographical roots (Greenbaum and Loi, 2012; Greenhalgh et al., 2016; Zamenopoulos and Alexiou, 2018). Based on the idea of democratising industry and empowering workers, this specific tradition of co-design is known as socio-technical design or 'technology co-design' (Greenhalgh et al., 2016: 405). It focuses on involving workers directly in the management of their workspace, building up collective experiential knowledge so that they can develop solutions catered for their local context (Greenhalgh et al., 2016; Zamenopoulos and Alexiou, 2018). Unlike most SER approaches, socio-technical design does 'not presuppose the need for consensus between different stakeholders, but instead [focuses] more on facilitating polyphony and agonism between adversaries' (Zamenopoulos and Alexiou, 2018: 17) to uncover diverse perspectives and ideas.

Moving from the workplace to the living space, community design originated from social and human rights movements in the 1960s, and from community actions against large-scale redevelopment and rehousing initiatives in the US and the UK (Zamenopoulos and Alexiou, 2018). Spearheaded by young architects and planners, it advocated for community participation in the creation of buildings, settlements and cities, with the belief that people should have a right to influence and manage the places where they live. In contrast to socio-technical design, community design places greater emphasis on resolving conflicts and building consensus among stakeholders with differing agendas and power dynamics, with the ultimate goal of fostering stronger connections and communities (Zamenopoulos and Alexiou, 2018).

Another movement-driven approach is social design, also originating in the 1960s. It is strongly influenced by design-led movements, such as the Italian Radical Design movement, which challenged consumerism and promoted the role of design and designers in addressing socio-economic and environmental issues (Zamenopoulos and Alexiou, 2018), and the 1990s 'open design' movement, which added a focus on the value of connecting people and the development of designs from publicly shared information. A central tenet is the idea of creative citizenship, which sees people as creative individuals that can make new services, events, places, products and networks to address complex social issues

(Zamenopoulos and Alexiou, 2018), giving rise to practices of 'design activism, Do-it-Yourself practices and social entrepreneurship' (Zamenopoulos and Alexiou, 2018: 21).

The final co-design approach, emerging in the 1990s, is co-creation (also known as co-creative design). Co-creation is also premised on the creativity of individuals, but it is focused on helping companies, governments and public bodies to produce innovative services and products, and it does so by offering a range of strategies, methods, tools and techniques that can be adapted across situations (Zamenopoulos and Alexiou, 2018). As touched upon in the previous section, co-creation was popularised within the business community, and key proponents hail from business or marketing, rather than from design (Sanders and Stappers, 2008).

The two disciplines share some similar challenges within the academic environment. Both business and design originate in practice orientations, which seem to face additional pressure to produce proprietary theoretical and methodological contributions to establish their credibility as academic disciplines (Antonini, 2021). This means that rewards for the inter- and transdisciplinary collaborations seen in SER can be limited within the academy. It may also be difficult to find funders who recognise the benefits of SER methodologies, which extend beyond the production of research products (Greenbaum and Loi, 2012). Despite these challenges, this review has clearly shown the impact of design in promoting interdisciplinary SER. This and other themes and trends will be discussed further in the final section of this article.

SER themes, frameworks and future directions

This review has demonstrated the interconnected development of SER across four major disciplines. This section summarises key themes, and identifies areas for further research.

The rise of interdisciplinary SER

Scholars across disciplines have noted the recent rise of interdisciplinary SER approaches (Fransman, 2018). This review finds, however, that cross-fertilisation between disciplines has a longer history, from action research in the 1960s, to the interwoven developments of participatory research and participatory design (Greenbaum and Loi, 2012), to the application of the arts in science communications and community health research (Fransman, 2018), to the practice of transdisciplinarity. More recently, developments include experience-based co-design, which is now used across public health to design and improve health-care experiences for patients and caregivers by gathering user experiences through interviews, observations and group discussions (Greenhalgh et al., 2016; Teal et al., 2022). A new framework of collaborative change research, evaluation and design has also emerged, bringing together the previously siloed approaches of participatory research, evaluation and design (Busch et al., 2019) to collaboratively produce knowledge, and to tackle complex issues ranging from health and education to the environment.

With design as a common thread across many recent approaches, some scholars have suggested that the growing popularity of design thinking is due to it providing a platform for the development of inter- and transdisciplinary SER. Lindberg et al. (2010) argue that design thinking provides a 'meta-disciplinary methodology', and a mindset that overcomes pre-established paradigms to find common ground between disciplinary knowledge (Gonera and Pabst, 2019). While on the practitioner side, Verganti (2003) claims that designers' user-centric, sociocultural and product semantic skills enable them to successfully facilitate collaboration across different types of stakeholders (Gonera and Pabst, 2019).

The success of design in driving engagement and interdisciplinary approaches suggests another learning opportunity, given the oft-cited challenge for SER scholars to demonstrate academic rigour and theoretical contribution. Further research investigating the development of SER, both within design and in collaboration with other disciplines, could shed light on the conditions and solutions for the development of inter- and transdisciplinary approaches.

The historical waves and objectives of SER

This review has shown that three common influences are interwoven across disciplines, which are reflected in the evolution and orientation of the various approaches to SER.

First, social and intellectual movements of the 1960s and 1970s that emphasised the empowerment of marginalised communities laid the foundation for the inclusion of patients, communities and other stakeholders in the research process. Second, the recognition of the complexity of social issues leading to the 'epochal shift between Mode-1 and Mode-2 knowledge' (Fransman, 2018: 191) in the 1990s, moved towards interdisciplinary and collaborative research approaches involving a diversity of stakeholders. Third, the 'displacement of a "culture of autonomy of science" by a "culture of accountability"' (Fransman, 2018: 192; Nowotny et al., 2001) in the 2000s, leading to the emergence of the impact agenda, and the impetus for academics to demonstrate the societal and economic impact of research. The result of these common influences is the intersecting and interconnected development of approaches across disciplines. Finally, it could be argued that there is a fourth influence, spurred on by the emphasis on innovation in both business and government, and the corresponding popularity of design thinking, leading to the rise of co-approaches, academic and cultural entrepreneurship, and triple and quadruple helix models.

These four 'waves' of influences have also impacted the objectives, motivations and intended outcomes of SER approaches. Those emerging from sociopolitical movements in the 1960s and 1970s generally orient around objectives of empowerment and emancipation; those responding to complexity tend to focus on producing better research that solves societal problems; accountability-driven approaches centre on research use and social impact; and innovation-oriented approaches focus on producing useful products and economic impact. These can be classified using Duncan and Oliver's typology of research benefits, which include 'normative' objectives such as social justice and ethical research, 'substantive' objectives such as improving research quality (including epistemology and ontology), and 'instrumental' objectives such as improving research effectiveness (including research production, communication and utilisation) (Duncan and Oliver, 2017, cited in Fransman, 2018: 187).

While this review provides a descriptive account of these waves and their implications, future research using a more historical methodology could uncover why these changes have occurred, and could potentially help to identify where future waves may come from. In particular, the conceptual approach of 'knowledge democracy' poses a particularly interesting area of study, not only because it traverses disciplines, but also because it is cited as delivering all three types of research impact. From the perspective of participatory research, knowledge democracy has a normative, social justice orientation, advocating for the equal recognition of researchers and research participants. In co-production, the diversity of knowledge types plays a substantive role in producing better research for today's complex world. Finally, the Mode 3 and quadruple helix models suggest that knowledge democracy is instrumentally effective in problem solving and innovation. The example of knowledge democracy illustrates the multiple pathways by which SER approaches can deliver impact. Against the backdrop of the impact agenda, the exploration of these pathways, or theories of change, in SER is a particularly important, yet neglected, topic for future research.

From three generations to four configurations

Finally, this review has found parallel 'generational' development of SER across disciplines, from 'the simple, one-way, and readily auditable relationship between a group of scientists that undertakes research and a funder that commissions and then uses such research' to 'complex networks of intersectoral collaborations and interdependencies' (Greenhalgh et al., 2016: 407). However, this review makes two additional observations.

First, there seems to be another generation of SER, which is characterised less by a focus on the overall system described in 'third generation' approaches, and more on the involvement of citizens and consumers, as seen in citizen science, and the various forms of 'co-approaches' (co-production,

co-creation and co-design) in the social sciences, business and design. These are also distinct from second generation relational approaches, which tend to feature two-way exchange (for example, academic–practitioner or academic–policymaker), rather than a collective or community of multiple stakeholders. Further, SER developments may not be purely chronological, as several authors have previously suggested (Best and Holmes, 2010; Boaz et al., 2019). This is shown in Table 3, which presents SER approaches by their 'generation' and discipline.

This lack of chronological alignment is most obvious in design, arts and humanities, where approaches focused on citizens (or 'community approaches') have been applied since social movements in the 1960s and 1970s, while first- and second-generation approaches evolved alongside the growing demand for research impact and accountability in the 1990s. Similarly, citizen and consumer-focused (fourth-generation) approaches in the social sciences (PPI, participatory research) and science and technology (citizen science) also emerged before previous generations, and it is particularly interesting to see a contemporary 'revival' of these approaches within the social sciences, in the form of 'co-approaches'. Finally, while business and management seems to follow the most chronological generational progression, it is important to note that the discipline originated in practice, arguably emerging from relational partnerships between academics and firms/managers.
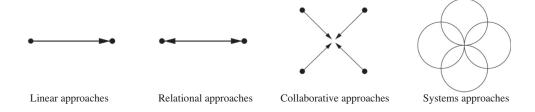
Thus, this article posits an early conceptual framework, as visualised in Figure 1. This figure categorises SER methodologies, not by their historical emergence or generational hierarchy, but by their operational complexity and stakeholder engagement configuration. This framework proposes a spectrum of configurations with increasing engagement complexity: from linear approaches, usually driven by academic actors; through relational approaches, emphasising partnerships between academia

Table 3. A snapshot of stakeholder-engaged research development across configurations*

	Social sciences	Science and technology	Business and management	Design, arts and humanities
Linear (first generation)	Knowledge transfer (1970s)	Deficit models (1980s) Mode 1 (1990s)	Practice-driven research (1900s) Knowledge transfer (2000s)	Public engagement (2010s)
Relational (second generation)	Knowledge exchange (1990–2000s)	Dialogic models (2000s) Boundary management (1980s)	Knowledge exchange (2000s) University–industry collaborations (2010s)	Cultural innovation and entrepreneurship (2010s)
Collaborative (fourth generation?)	PPI (1970s), Participatory research (1970s) EBPP (1990–2000s) Co-approaches (2000s)	Citizen science (2010s)	Co-creation (2000s)	Participatory design (1960–1970s), including socio-technical design, community design and social design Co-creation (1990s)
Systems (third generation)	Knowledge mobilisation (2010s)	Transdisciplinarity (2000s) Knowledge democracy (2000s) Science–politics relationship (2000s)	Mode 3 (2000s) Triple helix (2000s) Quadruple helix (2010s)	

***Note:** The decades assigned to approaches are intended to provide an indication of their periods of emergence, based on the literature reviewed in this study. They do not reflect precise dates of occurrence.

Figure 1. Visualisation of the four configurations

Linear approaches   Relational approaches   Collaborative approaches   Systems approaches

and practitioners; to collaborative approaches, incorporating consumer and citizen engagement; and extending to systems approaches, which involve multi-sector structures, such as those spanning researchers, funders and policymakers (Hopkins et al., 2021).

This reflects the insight, highlighted by previous authors, that each generation has its own strengths and weaknesses (Davies et al., 2015), and that aspects of earlier generations, such as dissemination and relationship building, remain critical to almost all SER approaches (Boaz et al., 2019). By focusing on the configuration of engagement, this framework offers a more nuanced and practical lens by which to examine and categorise SER practices, moving beyond the constraints of temporal development to more accurately reflect the dynamic and multifaceted nature of engaging stakeholders in research.

This nascent framework lays the groundwork for a more detailed theoretical and empirical exploration, intended to be further developed and elaborated in future work. This expansion will delve deeper into the specific characteristics and impacts of various engagement configurations, enhancing our understanding of their practical applications within the research landscape. With the increasing move towards inter/transdisciplinary and systemic approaches that respond to the complexities of today's society, it is likely that additional configurations will also emerge as more work is done to operationalise systems-based theories and models, adding further nuance to classification and areas for interdisciplinary collaboration. This provides another area ripe for further research.

Conclusion

This narrative review has provided an expansive overview of approaches to stakeholder-engaged research across the disciplines of the social sciences, science and technology, business and management, and design, arts and humanities, making several major contributions. It offers a nuanced perspective on the synthesis of the existing literature, identifying common origins and dimensions across SER approaches, while remaining sensitive to the contexts from which they originally evolved. These findings provide evidence of shared histories and mutual influences, challenging previous claims of independent development of SER across disciplines, while also identifying intersecting approaches that could most benefit from mutual learning and exchange.

One key finding of this multidisciplinary review is the interconnectedness of origins and objectives. The three key historical and intellectual developments identified in this article have also had significant influences on the objectives, motivations and intended outcomes of their underpinned approaches, regardless of the discipline with which they are associated. Approaches emerging from sociopolitical movements in the 1960s and 1970s generally orient around objectives of empowerment and emancipation; those responding to complexity tend to focus on producing better research that solves societal problems; while accountability-driven approaches centre on research use and impact. This shows that traditional disciplinary boundaries are likely to be restricting our understanding of SER, from its history and evolution, but also the opportunities for development and learning. In particular, this review identifies investigation into the theories of change of SER as an important area for further interdisciplinary research.

This article has also expanded the scope and understanding of SER by including disciplines neglected in previous reviews, broadening the diversity of approaches and epistemologies discussed in the multidisciplinary SER literature. Building on the widely cited three generations model, this article proposes a configuration- and complexity-based framework for understanding and comparing SER approaches, moving beyond the chronological conception of SER development. This seems particularly relevant, given the overall trend among researchers and funders towards addressing 'wicked problems' (Gonera and Pabst, 2019: 97) that require 'more holistic, integrated conceptual approaches, which emphasise complex and dynamic configurations of people, things, organizations and ideas' (Fransman, 2018: 208). The subsequent emergence of new configurations for SER represents another promising area for researchers in the future.

Overall, this review contributes to the development of more cohesive and integrated frameworks for understanding stakeholder-engaged research. The 'four waves' enable understanding of common origins, influences and objectives of SER across disciplines, while the introduction of 'four configurations' provides a productive approach to comparing approaches and identifying structurally similar ones. In combination, these two models provide useful dimensions for identifying approaches with common or complementary features, which represent promising areas for interdisciplinary learning. Further, the conceptual clarity provided by these frameworks enables researchers and practitioners to more effectively communicate and collaborate around the design, implementation and evaluation of stakeholder-engaged research. Thus, this review represents a foundational piece for researchers and practitioners who are interested in conducting or collaborating on SER projects, providing a basis for multidisciplinary discourse, learning and collaboration.

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