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Understanding policy and change: using a political economy analysis framework

Brian Andreas^a , Scott Fernie^a  and Andrew Dainty^b 

^aSchool of Architecture, Building and Civil Engineering, Loughborough University, Loughborough, UK; ^bManchester Metropolitan University, Manchester, UK

ABSTRACT

The gap between the intent and the impact of policy for construction in the UK has been well established both in academic literature and in public discourse, contributing to repeated calls for transformation of the industry. The apparent failure of policy was investigated, taking policy at sector level as the unit of analysis. The objective was to both generate insight into the policy process and to establish a theoretical framework. Anticipating that the use of language, and the conflicting meanings attached to it by individual actors, is critical, an interpretive, abductive, research design was adopted. Twenty semi-structured interviews were carried out with a cross-section of industry actors. Methods of political economy analysis, used in other contexts, were adopted as the starting point for abduction. Analysis revealed flawed assumptions amongst stakeholders regarding the extent of the agency of central government in implementing change across such a heterogeneous and loosely coupled sector. Political economy analysis shows the impact of structural and institutional features on the sector in a systemic and holistic way, providing a template and visual model which supports collaborative and reflexive working, and forming a foundation for further research into policy for construction both in the UK and elsewhere.

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Introduction

The research presented here addresses the Special Issue's themes of transformation and innovation by looking at the use of policy to bring about change in the construction sector. In the UK there is a long and continuing history of attempts to use policy to achieve change both at sector level and in more specific areas of policy. To contribute to the literature, therefore, this paper examines possible sources of theory and method which can support a way of understanding how policy for the sector is shaped and implemented, and it reports on empirical research examining both policy itself and a theoretical framework. It seeks to go beyond explanation of past performance by indicating ways in which such a framework might support the formation of future policy. While the findings concerning policy itself may depend on contextual features, the underlying framework is offered as being of relevance to policy for the sector in other countries.

This paper is a development of research carried out by the first author (Andreas 2019).

In the UK, themes such as transformation, innovation, technological change, availability of skilled workers, and environmental constraints were all present in the Construction 2025 strategy (HM Government 2013) and repeated in the "sector deal" for construction (HM Government 2018). These strategies are a continuation of a long line of attempts at reform going back (in the UK) to 1944, a sequence which was described by Murray and Langford (2003, p. 201), who remarked that the industry appeared to be afflicted by "a long-term illness" in its resistance to change. From within the industry Wolstenholme (2009, p. 4), in reviewing the sector 10 years after Egan's (1998) strategy for the industry, asked "So what will make the industry change now when it has failed to do so before?". Some of this discourse may represent essentially the concerns of a "technocratic elite" (as suggested by Green 2001, and Fernie *et al.* 2006).

CONTACT Brian Andreas  R.B.Andreas@lboro.ac.uk  School of Architecture, Building and Civil Engineering, Loughborough University, Leicestershire LE11 3TU, UK

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However, more recent events, exemplified by the disastrous Grenfell Tower fire of 2017 and its continuing repercussions (some of which were explored in Hackitt 2018), have left little doubt in the minds of practitioners and public alike that there is something seriously wrong with the performance of the industry at many levels – even when relevant policy in the form of regulations does exist.

At the level of the firm or network of firms, difficulties in implementation of change have received considerable attention, (Bresnen *et al.* 2005, Taylor and Levitt 2007, Hall *et al.* 2020, Zomer *et al.* 2021, and many others). An academic literature relevant to the misfiring of policy, as a vehicle for change, does exist, some of which has been referred to, and is considered in more detail in a later section. However, the phenomenon of a widespread policy gap, potentially disabling many areas of policy for the sector and undermining much sought-after transformations, has received relatively little attention from researchers by comparison with the magnitude and spread of the problem, and compared with policy research in other sectors.

As Schweber *et al.* (2015) point out, the way in which policy problems are framed, and evidence is gathered, is critical to the rest of the policy process. Guba (1984, p. 70) argues that there is no universally applicable definition of policy, instead the choice of definition is itself a “value choice” with “... political implications...” which affects how policy is subsequently analyzed. Hence, for transparency, the policy researcher is obliged to declare their position at the outset. In the present case, in order to study the policy gap between declared intent and ultimate impact, *a priori* it is necessary to take a view of policy which emphasizes its net effect and actual impact as opposed to the nominal intent of any original words. At all times, an awareness of the implicit values behind policy discourse is important as these can influence policy options and choices: for example Bartram (2010) stressed the need for such an awareness, in any policy context, based on his research which questioned the prevailing assumptions (in 2010) surrounding the benefits of migration. The choice of perspective, about what policy consists of, has consequences for research design which are discussed later.

Policy for industry is particularly concerned with the interface between government and industry, with the assumptions and beliefs which influence the positioning of that interface and “managing conflicting interests” (Andreoni and Chang 2019, p. 145). Therefore, we argue that a political economy approach

enables the asking of fundamental questions about the policy gap for the construction sector. Accessible methods of political economy analysis (referred to here as PEA) have evolved in the last two decades in the field of international development, arising from the need to understand gaps between policy intent and outcome. This paper describes how a PEA approach has been derived from such sources and adapted for use in policy analysis within construction management research (CMR).

The paper is arranged as follows. First, we explore the meaning of policy in the context of change affecting the construction industry, drawing mainly on sources in political science. We revisit the nature of the problem being investigated, namely the phenomenon of the gap between intent and impact. We then include a brief review of what a political economy approach to policy offers including certain themes which are already shared with existing research on construction innovation and change, followed by an explanation of how a PEA framework and methodology was derived for application to the problem of the policy gap. The choice of research methodology is introduced, arguing that the centrality of language, meaning and context to the problem supports selection of an interpretive approach. The way theory is used abductively alongside the data, with political economy analysis as the starting point, and subject to an iterative process of reflection at all stages, is described. Next, the methods used to collect and analyze data are presented, including recruitment of participants, the use of semi-structured interviews and documentary sources. The use of theory and development of a PEA approach in understanding policy and change is the priority of the present paper, in that the findings represent a snapshot in time (and context) and most will require further research and validation, whereas the findings regarding the PEA framework are more likely to endure. The more significant findings concerning both policy and the PEA framework itself are included, but the two parts work together, one aspect illustrating and illuminating the other in a recursive way. Finally, the significance of the research is discussed, including an overview of the potential for future research.

What do we mean by “policy”?

First, it is necessary to clarify the meaning of two words frequently used in the context of policy. For “institutions” we use the meaning proposed by North: “... the humanly devised constraints that structure

political, economic and social interaction...” (North 1991, p. 97). The word “structure,” as a noun, is used to refer to deep-rooted features, which influence institutions and behaviour and which are difficult or impossible to change (Harris 2013, p. 6; Whaites 2017, p. 5). Such meanings and their sources are discussed in Andreas (2019, p. 117, 200).

Klein and Marmor (in Moran *et al.* 2006, p. 892) observe that policy “is what governments do and neglect to do”. We would go further and argue that policy should be understood as not just that which is formalized or written down or intended, but that it includes what actually happens in practice. One result of doing so is that all phases of policy formation become relevant, from the so-called agenda-setting stage through to implementation and review. Gale, for example, sought to dispel the “...false dichotomies between issues of policy production and implementation” (Gale 1999, p. 396, 405; see also Gale 2003 p. 54). Because our definition of policy includes the policy’s ultimate effect (or lack of effect), we are obliged to consider the wider pre-existing political, social and economic context which influences behaviour including structural and institutional constraints on agency. A parallel position was put forward by Taylor and Levitt (2007) and particularly Sheffer and Levitt (2010), who chose to concentrate on the relatively neglected implementation phase of innovation (as an instance of policy) and in doing so were able to identify several influential features of industry “structure”. Similarly Dubois and Gadde (2002b) argued that the context of institutions – including policy interventions – has the capability to increase efficiency of working in the loosely-coupled sector of construction but, as such institutions become embedded, they may come to retard the rate of new learning and innovation. Hence, there is an overlap in concern with the structural and institutional context within which both policy and innovation take place. Next, we consider some of the characteristics of policy and the extent to which notions of rationality are relevant.

Cairney (2012) observes that policymakers typically operate in a context of information complexity, with competing policy demands – and that when policymakers “...focus on one issue they have to ignore at least 99 others” (2012, p. 11 and see also pp. 182 and 193). Some theories of the policy process recognize, therefore, an apparent randomness in how a specific policy might be ignored or progressed, as in the “garbage can” theory of policymaking (initiated by Cohen *et al.* 1972) or its more recent form in Kingdon’s Multiple Streams Analysis (described by

Jann and Wegrich in Fischer *et al.* 2007, p. 47). Simon (1972) describes decision making within a context of considerable uncertainty, where information about alternatives is incomplete and there is complexity, as being a situation where rationality is necessarily limited or bounded. Therefore, to address one problem, other aspects of context may be suppressed. The challenges, for policymaking and its implementation, are amplified by the influence of competing, diverse interests, differences in knowledge possessed by each of the actors involved, and the different meanings which they attach to language. A tendency to depend on instrumental rationality in such a context was criticized by Andrews in Fischer *et al.* (2007, p. 169), as ignoring other forms of rationality which emphasize communication, participation and “practical reason”. Similar criticisms about the negative results of instrumental rationality in policymaking have also been reflected in construction management research literature, for example Green (2001) and Cairns (2008). The response in political science has been the increased use of an interpretive approach to understanding policy, where meaning and context are emphasized, of which Yanow (2007) is an example. Adopting such a position carries implications for research design which will be discussed in the Methodology and Methods sections.

In summary, “policy” needs to be seen as more than just what is written down or even expressed as intention. Policymaking is not just a complex technical problem but one where the contrasting beliefs, interests and knowledge of participants, and the meanings they attach to the language of policy, must be taken into account. These considerations point towards the experience of the individual actor, working within the context of a nexus of institutions, as being the focus of attention if progress is to be made in understanding how policy processes for construction fail or succeed. These observations about policy have implications for methodology and method.

Describing the research problem

The sense of misfiring policy for the UK construction industry was described earlier. The association of the industry, internationally, with a problem of apparent reluctance to change and innovate, and the way in which policy (despite a prior mixed record of effectiveness) might be used to address this, is a long-standing one and was the subject of empirical research covering 15 countries by Seaden and Manseau (2001). More recently Barbosa *et al.* (2017) have argued that there is a “productivity problem” in the sector globally,

linked to low levels of innovation compared to other sectors, and they make generic proposals for policy change, which would imply that any progress made in understanding policy processes in the UK would have relevance elsewhere too. Summarizing, those arguing for transformation argue for the place of policy in supporting change, yet they simultaneously challenge, whether explicitly or implicitly, the effectiveness of past attempts at change through policy.

The extent of the problem of policy, which does not deliver on the apparent intentions of policy-makers, has been recognized in the literature with the consequence that Green (2011) and others have called for the deployment of wider perspectives on policy for construction than has commonly been the case when sector policy is formed (Fernie *et al.* 2006, Bresnen 2007, Smiley *et al.* 2014). Dainty *et al.* (2017) argued that an excess of “technocratic optimism,” without a more critical analysis, can undermine policy for implementation of BIM – and the more recent policy for off-site construction might suffer from the same deficit, according to an assessment of the Farmer Review by Green (2016).

There are individual examples of the use of theory to generate understanding of construction policy. Schweber *et al.* (2015) analyzed how the framing of evidence affected policy for zero carbon homes through the use of a new policy venue. Janda and Topouzi (2015) argued for the use of a narrative approach to engagement and energy policy for buildings. Both of these papers were included in the set of 9 reflections on policy implementation to which Foxell and Cooper’s (2015) editorial refers. Their review concluded that increased engagement with policy by the sector is needed. Müller (2016, p. 340) called for a greater use of theory in understanding policy, partly in order to catalyze learning between different countries. Smiley (2016) used an interpretive approach to analyzing discourse in formal policy documents such as Construction 2025 (HM Government 2013). Sergeeva and Winch (2020) used empirical research to understand the differences in innovation narratives between government and industry. A limited number of papers have claimed to apply political economy to the built environment, but such papers do not include an explanation of the theory being deployed: for example housing is addressed by both Coelho *et al.* (2017) and Christophers (2013); infrastructure is examined by Coelho (2014). The present paper seeks to make a contribution to the relatively limited work carried out to date on construction policy by importing theory from another field and testing its relevance.

Hence the research problem can be summarized as one of finding a way of understanding the persistent pattern of a gap between policy intention and outcome, by attempting a deeper understanding of policy processes and context, in order to contribute towards more desirable policy outcomes for construction. Such a summary implies also a search for theory which can be applied to policy in multiple contexts, in a systemic and holistic way, not just for the resolution of individual policy scenarios. The next section draws attention to one such approach.

Sources of theory and a way forward

Political economy

Political economy is concerned with the structural and institutional features of a country or region and how these interact with politics and economics, in almost any context (Edelmann 2009 summarizes the range of meanings of the term). Calvo and Coulter (2020), for example, applied a political economy approach to industrial policy in comparing the performance of the UK, France, Germany and Spain after the 2007/8 economic crisis. At its most obvious, political economy is to do with the positioning of the boundary between the state and different parts of society, of which the firm or business is but one element. It is therefore highly relevant to a consideration of the many interests which span the boundary including (in the case of policy for industry) innovation, knowledge generation and skills.

Hence, we argue that policy for construction, at the sector level at least, needs to be considered from a political economy perspective. Political economy is a well-established, and evolving, field of enquiry and a source of methods of analysis (for one survey of its historical roots and modern day relevance see Besley 2007). Yet it has only rarely been used explicitly in the context of construction policy. Some of its concepts have nevertheless quietly influenced construction research, as will be illustrated in what follows.

The central proposition in Dobbin (1994) of deep, self-perpetuating, roots of national industrial policy was later captured in the influential Varieties of Capitalism (VoC) categorization of different types of economy by Hall and Soskice (2001), more recent developments of which were discussed in Thelen (2012). A VoC model was used by Calvo and Coulter (2020) in their comparison of national political economies and industrial policies. By contrast, Taylor and Levitt (2007) explored institutional differences in the diffusion of “3D CAD” between the “co-ordinated

market economy” of Finland and the “liberal market economy” of the USA, acknowledging these as VoC concepts originating with Hall and Soskice (2001), but without acknowledging their source in political economy. Similarly, Sheffer and Levitt (2010) referred to differences between economies, when diagnosing “market failure” to deliver integral innovation, as a result of four specific “structural barriers”: a significant part of their argument can be seen as essentially one of political economy, though again they only acknowledged the VoC element.

Other construction innovation literature acknowledges the effect of political economy themes on the industry in the form of business systems, not unlike the VoC framework, though again without explicitly acknowledging the source of such theory – namely, political economy. Such literature includes:

- Winch (1998) examined different national “innovation systems”, and how they were influenced by contrasting national approaches to regulation.
- Winch (2000) explored the idea of national business systems, how they have influenced the construction industry in different countries, and their historical roots.
- The idea of differing national institutional systems, and hence their effect on construction sector systems, was also developed by Carassus (2004). Carassus used, not the VoC approach, but the alternative “Regulation Theory” of Boyer (2005).

One of the themes in Winch (2000) is the influence of behaviour on the formation of institutions and vice-versa. Such ideas are not the exclusive province of political economy, but they are certainly part of it. More recently they have appeared within literature on innovation such as the concept of mirror-breaking (Hall *et al.* 2020, Zomer *et al.* 2021), where a certain innovation implies the need to form new institutions for it to succeed. In summary, we argue that, whereas past work within CMR literature on policy and innovation has indeed made use of themes and theory shared with political economy (such as structure, institutions, mutual interaction between institution and agency, systems, interests etc.), there is a potentially greater benefit to be gained from a more explicit use of theory and method associated with the field of political economy.

John, as a political scientist, observes that popular models of policy analysis such as

... multiple streams, policy advocacy coalitions, and the punctuated equilibrium model... .. tend to suffer from a familiar problem of using description

rather than explanation to understand change in complex decision-making environments. (2018, p. 11)

and that therefore policy analysis would benefit from integration with a political economy approach, as a source of theory. We argue that, especially in the early stages of contributing to the limited literature on policy for construction, the more systemic and holistic approach to policy analysis enabled by political economy is likely to be beneficial, whereas the conventional tools of political science, which John (2018) refers to, might be useful at a later stage of research (see Andreas 2019, pp. 204-207 for further description of such tools). In the next section we discuss one such approach, namely political economy analysis.

Political economy analysis – a framework

Political economy analysis (PEA) has developed as a tool for use by practitioners in the field of economic development who need to address pressing policy challenges and who seek better pathways for change – and hence is relevant to the construction policy gap. The literature on PEA is extensive ranging from more academic surveys and syntheses such as Edelmann (2009) and Mcloughlin (2014), critiques such as Hudson and Leftwich (2014) through to those which emphasize the practitioner’s viewpoint such as Booth *et al.* (2009) and Whaites (2017). Mcloughlin (2014) reviews numerous PEA studies at both country level and at sector level, such as water and sanitation, the extractives industry, roads reform, health, and disaster risk management.

Two key sources were identified and compared in order to generate a PEA format relevant to the present research. The first of these sources, Poole (2011), explains in detail how PEA can be used whether at country, sector or more specific level and offers a visual model of a “problem-driven” process leading in 4 phases from evidence for the problem, through an analysis of institutions, incentives and legacies through to options for change. A contrasting alternative is Harris (2013) who addresses a problem-driven approach only and, unlike Poole, emphasizes the role of structure which is therefore reflected more clearly in the visual model (Harris 2013, p. 5). Both sources stress the interaction between institution and agency (though this is better expressed in the model by Harris) and in other respects too they follow the main themes of political economy and PEA. A visualization of PEA theory was thus developed, by initially using a synthesis from these two sources, and later incorporating learning from the research process (that is, data gathering, analysis and reflection). Its final form is shown in Figure 1, referred to here as the template.

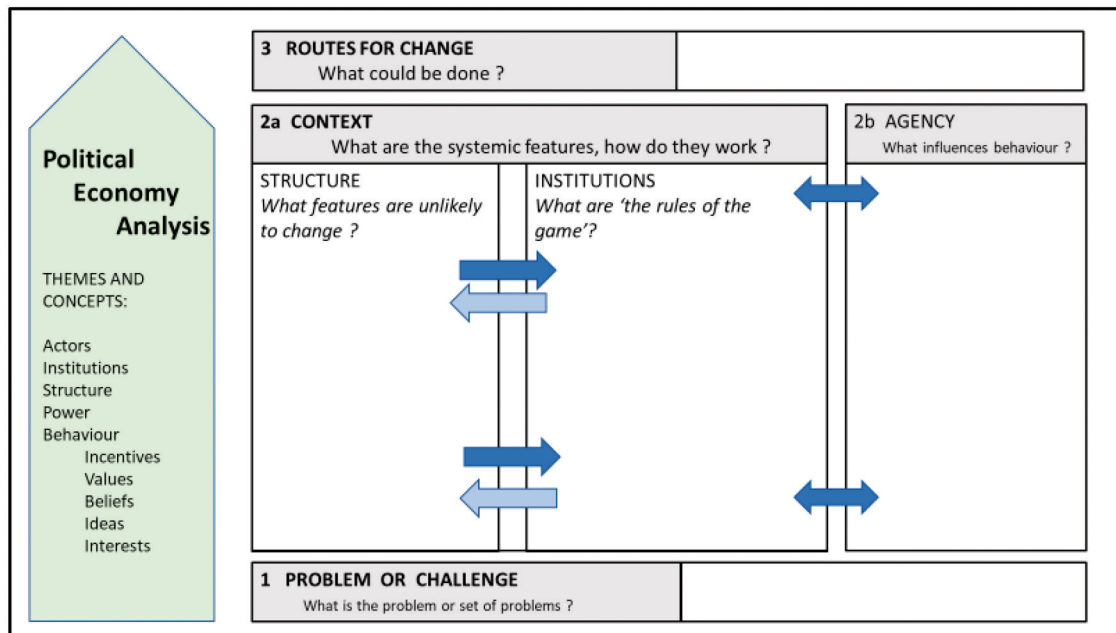


Figure 1. Political economy analysis template. Adapted from Poole 2011, p. 3 and Harris 2013, p. 5.

In terms of substance the main changes introduced by the template (compared to Poole 2011 and Harris 2013) are:

- “structure(s)” is distinguished from “institution(s)” in that the former either cannot change, or are very difficult to change, while the latter are more susceptible to change
- the emphasis, using the horizontal arrows, on a dynamic and iterative interaction between structure, institution and agency (that is, for example, agency is influenced by institution but can also itself affect the evolution of future institutions; structure influences institution but it is less likely to be *influenced* by institution)
- the template follows Harris 2013 in placing questions of agency and behaviour separately – to the right-hand side of the Figure 1

PEA sources do not insist on the use of any single underlying research philosophy. For the present research we have already argued for the use of an interpretive approach and in the next section we show how this has been combined with PEA methods.

Methodology

Research philosophy

The roles of people, the multiple realities which they experience, and the meanings which they attach to their experience in relation to policy are central to this

research rather than, say, the engineering limitations of a single policy. In such a context, Yanow (2007) argues for the use of an interpretive approach to policy analysis. An interpretivist position would also be consistent with the sense, explored earlier, that the use of “instrumental rationality” has been insufficient as a means towards either analyzing or creating policy in general, and policy for construction in particular. The use of an interpretive approach to policy leads to an emphasis on questions related to language, values and belief, policy as argument, complexity, and a recognition of the place of the researcher as an actor within the policy process, rather than as an external, always objective, observer.

There is a risk, while using an interpretive approach, that subjectivity on the part of the researcher dominates the process of data accumulation and analysis, and weakens the value of research for others. To guard against this Schweber (2015, p. 845) proposes the use of “reflexivity” by the researcher, in the sense of a systematic, iterative process of reflection upon all stages of analysis, but particularly upon how theory has been used and how the researcher’s “own common sense” and “assumptions” might have had an influence. The researcher has sought to follow this approach, as will be illustrated in what follows.

The role of theory and abduction

For Dubois and Gadde (Dubois and Gadde 2002a), whose field of research was business organization, theory itself can best be understood by means of

exploring its confrontation with “the empirical world” (2002a, p. 554). They sought to exploit this by means of what they termed a systematic, iterative combining of the two throughout research, which they characterized as an abductive approach, as opposed to either purely induction (the formation of theory from data) or purely deduction (the testing of theory by means of data). An abductive approach has been used by researchers such as Rahmani and Leifels (2018) to overcome some of the perceived weaknesses of interpretive research (namely, too descriptive, not generalizable, etc. – for example see Lin Chih 1998 p. 169).

The concept therefore of initial abduction of a theoretical framework (namely, political economy analysis) from an external source, and its progressive evolution by iteration and reflection, through the interpretation and analysis phases, is an appropriate description of the research process used in the present instance. The overall positioning of the research is interpretive (because of the importance of context and meaning – following Yanow 2003). Theory, data and reflexivity (in the sense of self-awareness and reflection rather than co-production) have been used to challenge “... the researcher’s own common sense” in interpretation, consistent with the recommendations of Schweber (2015, p. 845).

Criteria for the quality of interpretive research

The interpretive researcher acts as a conduit through which data is transformed from its initial form (in this case, language) via interpretation and summary into conceptual form and this raises difficulties regarding how the reader, detached from the data, may evaluate research. Durnová and Weible (2020, p. 583) suggested that the criteria for interpretive policy research should be “... credibility (i.e. is the research plausible and supported through the data) and dependability and confirmability”. However, the criteria are the subject of continuing debate. Pozzebon (2002, p. 290) concluded that while overall principles could be proposed (as attempted later on by Denzin 2009 for example), ultimately the criteria are evolved in the interaction between the research output and the critical reader, and “choosing any list of universal criteria in advance of reading” is false. We have therefore assumed that the principles, by which interpretive research can be judged, can be summarized here as including transparency of research design, implementation and reporting. Following Pozzebon (2002), the critical reader will also add their own criteria.

Summary of research objectives

The research question which was addressed by this research is

To what extent is a political economy approach of value in understanding the misfiring of construction policy and in particular can political economy analysis be adapted for use in addressing such a problem?

The research objectives can be summarized as the development of an analytical framework, capable of forming a foundation for future policy analysis, and also the testing of the framework by means of its application to sector-level policy processes. The two axes of PEA theory and policy gap were dynamically linked, in that by seeking to understand either one, insight was gained into the other, consistent with the abductive processes described earlier.

Method, data gathering and interpretation

Introduction

The method set out here describes the bringing together of interpretive policy analysis with the adaptation of methods of political economy analysis. The PEA framework including the template (Figure 1) was introduced earlier. In terms of implementation, there is no dominant PEA method, though attempts at guidance include Acosta and Pettit (2013), Whaites (2017), Fritz *et al.* (2009) and Edelmann (2009). However, Booth *et al.* (2009) is particularly helpful in comparing different PEA methods and synthesising them. These sources and others have been used to inform what follows.

Sources of data – interviews and documents

Engaging directly with industry actors, through the use of confidential semi-structured interviews under conditions of anonymity, seemed potentially more likely to uncover valuable insights into practice, rather than reliance solely on more formal sources such as documents in the public domain. This is considered important also because approximately 50% of participants could be described as “elite” whose more public utterances can be expected to conform to corporate messaging. Triangulation of observations in interpretive research is more about comparison and exploration of differences rather than a search for unique fact. Natow (2020) offers a differentiation of types of triangulation based on an assessment of 122 peer-reviewed interpretive studies, from different fields of social science, which made use of interviewing of

elites for data collection. The meaning of triangulation used in the present paper refers primarily to the use of multiple data sources: in this case, a cross-section of diverse participants and documentary evidence including on-line sources, such as news media, and reports on policymaking research by the Institute for Government. We follow both Natow (2020) and Love *et al.* (2002), as well as PEA guidance such as Booth *et al.* (2009, p. 21), in adopting triangulation as an important part of the present interpretive research.

Saunders *et al.* (2015) point out the dilemmas of using anonymized sources especially during the reporting phase in that, if a full context for quoted or interpreted remarks were to be provided, then at some point anonymity and confidentiality is at risk. Therefore, to protect participant confidentiality, various tactics are used in this paper to disguise sources, while retaining the maximum degree of relevant context and hence value. For example, the same participant may be referred to by their job role, or by their industry sector.

Recruitment and selection of participants

While Pettigrew (1997) advocated the value of processual analysis involving a longitudinal study for research associated with social science, especially to capture the effect of context on agency and changing behaviour, the opportunity available to the researcher was limited to the conduct of a single phase of research and a single interview with any one participant. Triangulation, in the terms discussed in the preceding section, was achieved by means of a cross-sectional research design in order to reflect, as far as possible, a diversity of outlook and experience across the industry (Bryman 2012, p. 76 and Gorard 2010 p. 241 refer to cross-sectional design).

In terms of a definition of the sector, the history of attempts at strategy-making indicates that a wide view is taken by policymakers in that context (see for example HM Government 2013, p. 26; and HM Government 2018, p. 6). The sector is therefore assumed to include not just narrow construction (those activities directly related to construction and included in the UK's official statistics for the sector) but also includes the supply chain and the supporting professional services such as architecture. However, how the industry is conceptualized by participants is an aspect which potentially influences the framing of policy problems and options for change, and was itself therefore explored in interviews as will be discussed.

In terms of recruitment of participants, a cross section was sought which would provide as high a level of contrast of perspectives as possible within a limited number of people. Different sub-sectors, job roles and parts of the supply chain were approached. No single method dominated in terms of successful recruitment, each contributed to some extent. Routes of recruitment included personal contacts, the snowball method (where one participant recommends others for interview), and cold-calling of potential recruits. A total of 40 people were directly approached and invited to participate, and many others were approached via social media. Most participants had in the course of their careers worked in several roles and sub-sectors of the industry and were therefore able to reflect on insight gained from more than one role or organization. Four participants were either past or present members of the Construction Leadership Council (CLC) or its predecessor organization (the Construction Industrial Strategy Advisory Council). Others included were contractors, trade associations, manufacturers, policy makers, advisors to the industry, union official, architect and engineers. Further details of participants and recruitment can be found in Andreas (2019, pp. 77,78). Interviews took place between May 2017 and June 2019.

In terms of the number of participants and the effect on analysis and findings, 20 is not a large number. On the other hand, Yanow (2003, p. 10) pointed out that "it is a fallacy that small-n studies entail a small number of observations". Research by Guest *et al.* (2006) indicated that saturation could be reached at 12 interviewees provided they were sufficiently diverse, though there is no universal prescription. In the present case, additional triangulation was carried out by the use of documentary sources. On balance, the data set collected is considered rich enough for the purpose of responding to the research objective of testing the relevance of PEA for the analysis of policy for construction.

Design of interviews

The PEA literature, already referred to, and especially Booth *et al.* (2009, p. 12), was used to support the initial design of interview guide. All interviews were informal, semi-structured, and conversational in style. This is consistent with the experience of Yanow (2007, p. 113) who argued that interpretive policy research, where "contextualized meanings" are to be accessed, will tend to use a conversational (or "in depth") approach. Each interview lasted between 50 and

90 minutes depending on the time made available by the participant. Where possible, the location of the interview was at the participant's own workplace (for 50% of interviews). Interview topics included the following (from Andreas 2019, pp. 209-212):

- What are the top 3 or 4 challenges in the sector?
- How are policy topics prioritized?
- What are the legacies from the past which affect the industry today?
- What are the most important beliefs and values in the sector?
- What is the potential for reform?

Data analysis and interpretation

All interviews were recorded and transcribed by the first author, in order to avoid loss of available detail. Taking some of the topics from the interview guide as a preliminary starting point, themes emerging from the transcripts were coded with the aid of Nvivo12 text analysis software (see Andreas 2019, pp. 209-214). The initial coding was useful for familiarization with the data. However, a dilemma was then reached on how to proceed. Each participant was expressing a network of ideas which was at risk of being decomposed, during any further coding, into a large number of text elements to be sorted, mixed and aggregated. Hence alongside Nvivo12 a combined pdf (i.e. an Acrobat portable document format) of all interviews, which could still be searched by word or phrase, was found to be more useful in the later stages of interpretation. This experience, of the limitations of the use of computer-aided methods such as Nvivo, is consistent with the conclusions of Blismas and Dainty (2003) that "Paradoxically, computer-aided approaches often restrict rather than aid the analytical process." (p. 455).

The PEA theory and framework (Figure 1) were employed to challenge emerging observations (e.g. about the degree to which a feature was fixed or vulnerable to change), and to help identify the relationships and degree of influence between features. The use of the theory in this way led to iterative cycles of interpretation of data/analysis/reinterpretation/analysis and so on. Again, this is consistent with the abductive approach described earlier and the observation by Yanow (2007, p. 118) that "... circular sensemaking characterizes the interpretive policy process itself".

The following sections set out some of the observations made and how they have been interpreted. To do so within the confines of a paper requires a degree of selectivity of material at all stages, including the

spoken words of participants, their possible meaning and the use of the framework. The selection here has been made in order to meet the twin research objectives of exploring both policy and framework, and to relate them to the theme of transformation.

Observations and analysis

The following description begins with policy-related material, and then considers the use and development of the PEA model.

Observations on policy for construction (sector-level construction industrial policy)

The extent of the capacity of government in relation to the making and implementation of policy is central to the idea of the policy gap with which this paper started, and hence it is a useful starting point for discussion of observations. A typical comment (in this case from an industry leader who had also worked as a policymaker) was:

... Government is the biggest client of the industry, government directly and indirectly is client for something like 40 per cent of the industry and as such it has whether it likes it or not has a massive role on the industry. So it's appropriate for it to influence it as a client. The construction industry employs about 10 per cent of the UK workforce so from a jobs point of view government needs to influence the construction industry I think.

And later, when asked how change happens, the same person remarked:

.... I think if government says this is what we want but industry sees no benefit ... Green Deal is probably a good example Then it doesn't happen. But I think if industry sees the benefit but government doesn't push for it then it doesn't really happen or if it happens it happens very slowly. You kind of need both.

On the other hand, from the leader of a specialized contracting business, active nationally, the view of government influence on the industry was:

The interesting thing about the government is it doesn't really use its buying power to move the industry because it buys in such an odd way in that every project has to be individually calculated, the frameworks it gets into are still bid, it doesn't look cross-regionally, it divides itself up

And from the same person when speaking of the Sector Deal (HM Government 2018):

... there are loads and loads (of) initiatives, loads and loads of reports, loads and loads of things that go on,

but it don't get down to the people... And it doesn't **mean** anything because the whole tender and procurement process remains the same

(participant's emphasis in **bold**)

The sense, that what happens closer to the construction site is at sharp odds with the apparent intention of government, was confirmed by a senior policymaker within government, even for projects supposedly under the more direct influence of government. This participant stressed that government is "not as monolithic as people think" and also remarked:

...and then we have the people in government whose responsibility it is for deregulation who tend to suck their teeth about these things and say "oh bureaucracy and red tape" ...

Remarks made by participants demonstrate that it is usual for stakeholders to assume that they *should* be able to rely on a primary route for change which lies through central government. By reflection on the words of participants, the basis of the argument rests on several related ideas or beliefs:

- first, that government has the capacity to legislate, or to threaten to legislate or pursue other forms of policy, which drive change
- second, that legislation and other policy are or should be effective in changing behaviour
- third, that it is feasible to organize opinion and practice, across not just industry but also across government, into workable consensus to both identify needed change and to implement it
- fourth that, especially for the construction industry, "government" is the major client and accounts for around "40%" of the industry's output and so possesses "commissioning power" with which to drive change – all these phrases were used by participants. (The same sense is also repeated in public discourse e.g. by Harral 2019: "As financier of 40% of all UK construction work, government could choose to do this and may be the only client with enough mass to drive real change in industry business models".)

Each of the four stated beliefs can be challenged. Taking the four beliefs in order:

"Government has the capacity to legislate and make policy which drives change"

Under Conservative-led UK governments since 2010, legislation as such has been out of favour as a first choice with which to change behaviour. For example, participants referred to the deregulation agenda

typified by the criterion of "one in two out" (BIS 2016) – that is, any new legislation must be balanced by withdrawal of twice as much existing legislation, weighted according to cost to business. Participants observed that this process was active alongside a hollowing out of resources in those parts of the economy, such as building control, which might have had an interest or obligation in respect of enforcement of existing regulation. Hackitt (2018), in the report on the tragic Grenfell Tower fire of 2017, drew attention to weakened resources within both enforcing bodies and also within the industry itself. Participants drew attention to the adverse effects of hollowing out of retained knowledge both within the sector, and within client organizations, so harming performance and quality. (Regarding hollowing out see also Green 2011.)

An experienced policymaker remarked;

...the civil service is very focussed on ministerial announcements and being able to get the minister to announce that something's happening, and that's what they do ...

This remark is close in sense to evidence discussed in Hallsworth *et al.* (2011, p. 43) including a quotation from a civil servant:

... if you've designed the policy you've done your bit, you're perhaps moving on, you're not there to then be held accountable for whether it was well delivered or not.

The evidence therefore suggests that there is a dominant and enduring style of UK government action which values the announcement of policy over its implementation. This feature may itself be an institution with its deep roots in structure (in PEA terms) associated with the majoritarian, first-past-the-post electoral system of the UK. A policymaker remarked that:

Government's good at policy ... it's (expletive deleted) at implementation it really is ... so there's no mechanism for measurement and follow-up and holding to account

Participants remarked that policy churn undermines policy intent and that it seems to be a particular feature for UK government because it is related to churn in ministers, policymakers and policies arising from the electoral cycle:

... I lose track.... But how many housing ministers we've had in the last three years.... It's quite farcical ...

said a participant working on industry standards. Significantly, not only is churn a problem for policy in general, but industrial policy itself is particularly prone

to it (Norris and Adam 2017, p. 16), which would therefore also undermine construction policy. An example of such churn is the setting up of the Industrial Strategy Council, (HM Government 2018, p. 5), and its abandonment after only 30 months. (Morales 2021).

“Legislation and other policy are, or should be, effective in changing behaviour”

Several participants (contractor, trade union official, and a contractor’s health and safety specialist) reflected on the instability caused by the project and place-based nature of construction. The cyclical formation and dissolution of supply networks, and teams of workers on any specific site, exacerbates the difficulty in passing on both knowledge and practice (institutions). The project and place-based nature of construction therefore amounts to a structural feature which tends to work against the formation of new institutions. Policy churn, and a weak commitment to both legislation and to enforcement, observed in (1), further undermine the implementation phases of policy.

“It is feasible to organize opinion into a workable consensus”

The third belief relates to representation of certain groups of actors or stakeholders and the nature of policy networks, both within and outside government. One participant, the senior policymaker within government already referred to, pointed out that, while government is obliged to present itself externally as “monolithic” (illustrated by the so-called *write-round* process to achieve cross-departmental approval of new policy), in practice there are multiple conflicting and competing interests within central government, as well as across the wider public sector (including local government and executive agencies such as the Highways Agency). Even within central government, responsibility for the sector is itself dispersed between departments. There is no hierarchy of authority with regards to say enforcing procurement policy within executive branches. Hence some commentators (Gruneberg, 2018) have called for a Ministry for Construction, though such a demand may be less a viable solution and more symptomatic of an inevitable structural feature (dispersal of power) in the UK. The situation of dispersed power is compounded by trends towards devolution (e.g. responsibility for building regulations has been devolved for several years), and by the localization agenda associated with the rise of city mayors and regional centres (the northern powerhouse, midlands engine etc. – HM Treasury 2015).

Problems regarding representation and consensus formation also exist within the industry itself. One participant, who advises many different parts of the

industry, expressed this situation colourfully in terms of there being many different “tribes” within the sector (hence, by implication, contrasting language, culture, information, priorities – and institutions). Several participants referred to the lack of a single voice for the industry when speaking to government. Furthermore, participants tended to take the view that some important voices were missing or largely absent: including those of the smaller firm, the self-employed, and building users. A participant, from a trade union, pointed to the casualization of the construction workforce, and weakened employment links to larger contractors, as playing a role in patchy workforce representation. The same participant also pointed out that Conservative-led governments deliberately avoid engaging with trade unions (as a proxy for workforce views) leading to disengagement of unions with any kind of sector-level policy except through a parliamentary route, currently. One participant, a policymaker, recognized the absence of such detached voices (e.g. the self-employed and sole traders) but defended the situation on grounds of sheer difficulty in integrating them into what is already a complex and politically challenging process of engagement.

The point here goes beyond fairness in representation (an issue in itself) and instead suggests that missing voices might influence the validity and viability of policy. In PEA terms the institutions needed for consensus-forming and effective policy in the sector are weak and to some degree the fragmentation of the industry may have structural roots (e.g. in the diversity and size of the industry) as well as institutional causes (hollowing-out; business model etc.). In summary, the third belief, regarding feasibility of policy networks performing adequately to generate meaningful consensus, is not well founded.

“Government has purchasing power to drive change”

The fourth belief is that “government” is typically responsible as the buyer for “40%” of the output of the sector leading to overwhelming commissioning power. This was frequently expressed by participants and the figure of 40% was only contradicted by one person, who was a policymaker from within government (“somewhere between a quarter and a third”). This belief, which tends to be repeated in the media, is associated with the idea that government as buyer and financier can powerfully drive change by placing obligations on the industry which are enforced by contract (Harral 2019). There are several objections to this position. Most importantly, the figure of 40% is both incorrect and expressed in a misleading way. A more representative figure (pre-Covid) for the proportion of construction activity associated with the *public sector* as a whole and *not just central government* would be in the order of only 24% (Rhodes 2018, p. 10). Secondly, as discussed

earlier, such construction activity is not financed or controlled hierarchically by central government because the contract purchasing decisions are very dispersed across multiple centres of activity in the whole UK public sector. The idea of central government commissioning power may have more significance in certain sub-sectors rather than others – for example central government influence over major infrastructure projects is exerted by the IPA (see Infrastructure and Projects Authority 2016), but sub-sectors such as domestic repair, maintenance and improvement (RMI) are more remote from government. Summarizing, the public sector does not behave consistently as a single client and is anyway typically responsible for a substantially smaller proportion of construction activity than is commonly supposed. The chief policymaker, central government, is directly responsible for even less (much less than 24%). The belief may be a legacy from past decades when the UK public sector was larger (in terms of construction activity), and when devolution and use of executive agencies were in their infancy – resulting in a legacy which it has been convenient not to challenge.

(Other reasons for misfiring policy emerged from analysis of data, including the way in which the sector is unusually severely affected by the boom and bust of economic cycles: the structural influences on this were discussed in Andreas 2019.)

In summary, it is concluded that that the four elements of the argument for an assumption in political discourse regarding the power of government are largely invalid, and therefore cannot support the received narrative that central government has a dominant power to drive change in much of the industry. This might suggest that sector-level policy is likely to be neither adequately designed nor effectively implemented. The implications for policy are explored in the Discussion section below.

From these observations by participants, as a selection from the data, there is a clear sense that each participant has a personalized account of a past history of the industry, of its structure, of the institutions within which they work, and a sense of the connectiveness between all of these elements. Each account often overlaps with those of others (for example, the themes of fragmentation, poor business model, damaging economic cycles, etc. are common). During the iterative process of reflection on the data, the different elements, and their linkages, can be progressively identified and captured on the model (Figure 2). Each aspect, whether an individual element or a linkage between elements, can be challenged by re-examining the data, or, potentially, debated with others.

The model for the sector (Figure 2) also provides the systemic context for the consideration of a corresponding model for innovation. This model is shown in Figure 3, which is simply a direct extract from Figure 2. Neither model is offered as a definitive description but as the basis for debate and development.

Observations concerning the PEA model and method

Challenging assumptions

It was found helpful during analysis to use the concepts in the template (Figure 1) to challenge, and reflect on, any emerging classification of observations and their interactions (so, for example “is policy churn structural or institutional?”). Precision in placing a single feature on the model or map is less important than understanding how it is related to the rest of the landscape or system of influences. The framework provides only a starting point but the context itself, and its meaning, is built up by those making use of the model, who could include policymakers, stakeholders and industry practitioners, as individuals or groups. Hence the model, for any specific policy task, needs to be adapted from the more general case (Figure 2) for any more specific application (such as that offered for innovation, in Figure 3). This proposition is developed more fully in Andreas (2019, pp. 151,152)

It is argued that use of the PEA approach allows assumptions to be exposed and to be interrogated, and that this is important to the building of consensus around any potential for change and the means by which change might be achieved. The use of PEA in this way, not merely to diagnose past policy failure, is claimed by Whaites (2017, p. 11) as the purpose of the use of the PEA by practitioners in the field. Edelman (2009, p. 73) and Buse (2008, p. 214) refer to it as “prospective policy analysis”. The PEA literature supports the idea that the approach is one of shared discovery (and therefore collaboration), and is an ongoing process amongst those engaged in policy rather than a one-off technical exercise (summarized in Andreas 2019, p. 117; and Mcloughlin 2014, p. 3). The PEA literature does not, however, refer to the use of a visualization (such as Figure 2) to support this process, but undoubtedly it was found helpful to use the model and populate it, thus forming the visual model, from an early stage in the process of interpretation. The way in which visualization assists in this way is the subject of the next section.

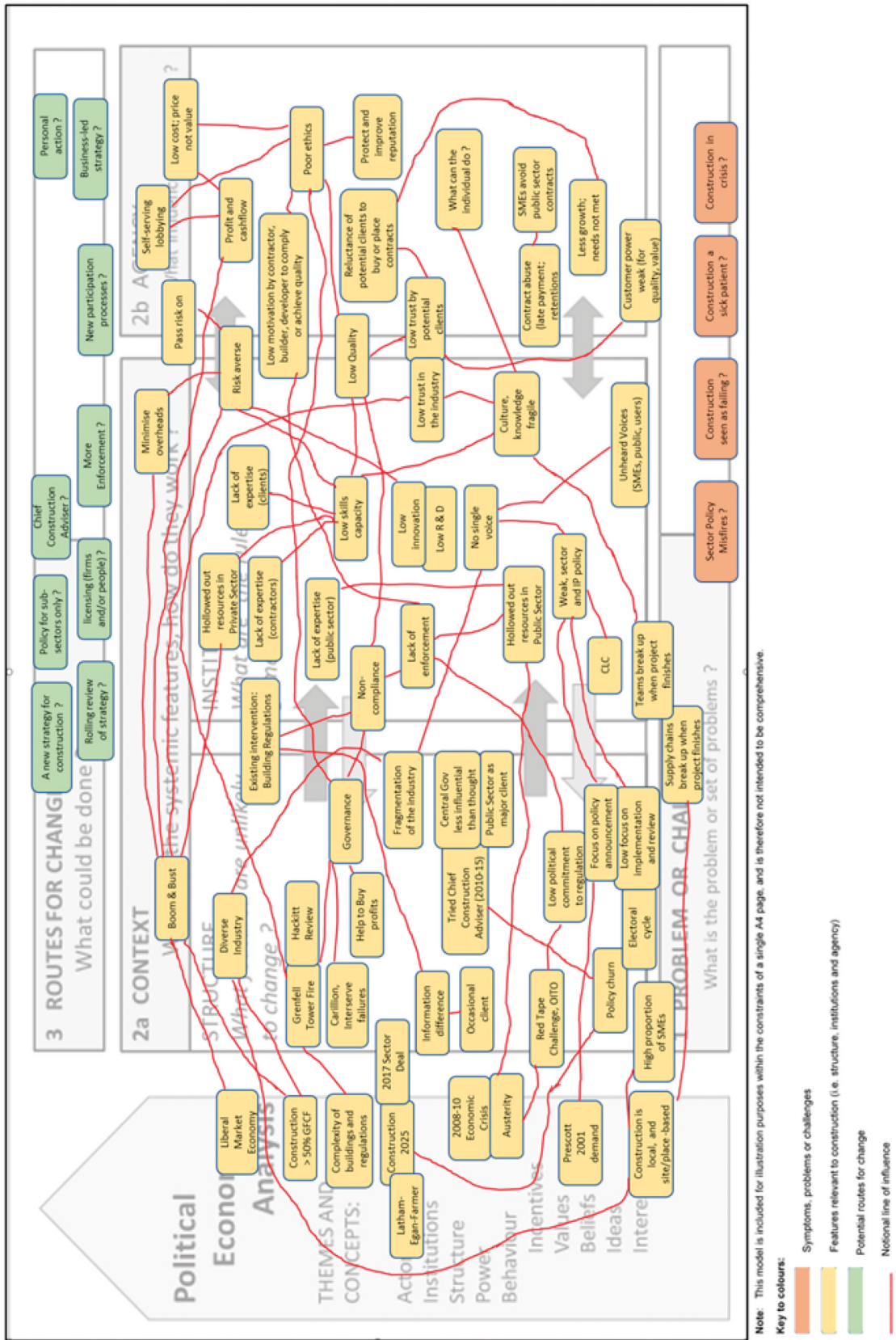


Figure 2. Model for construction policy at sector level, in outline.

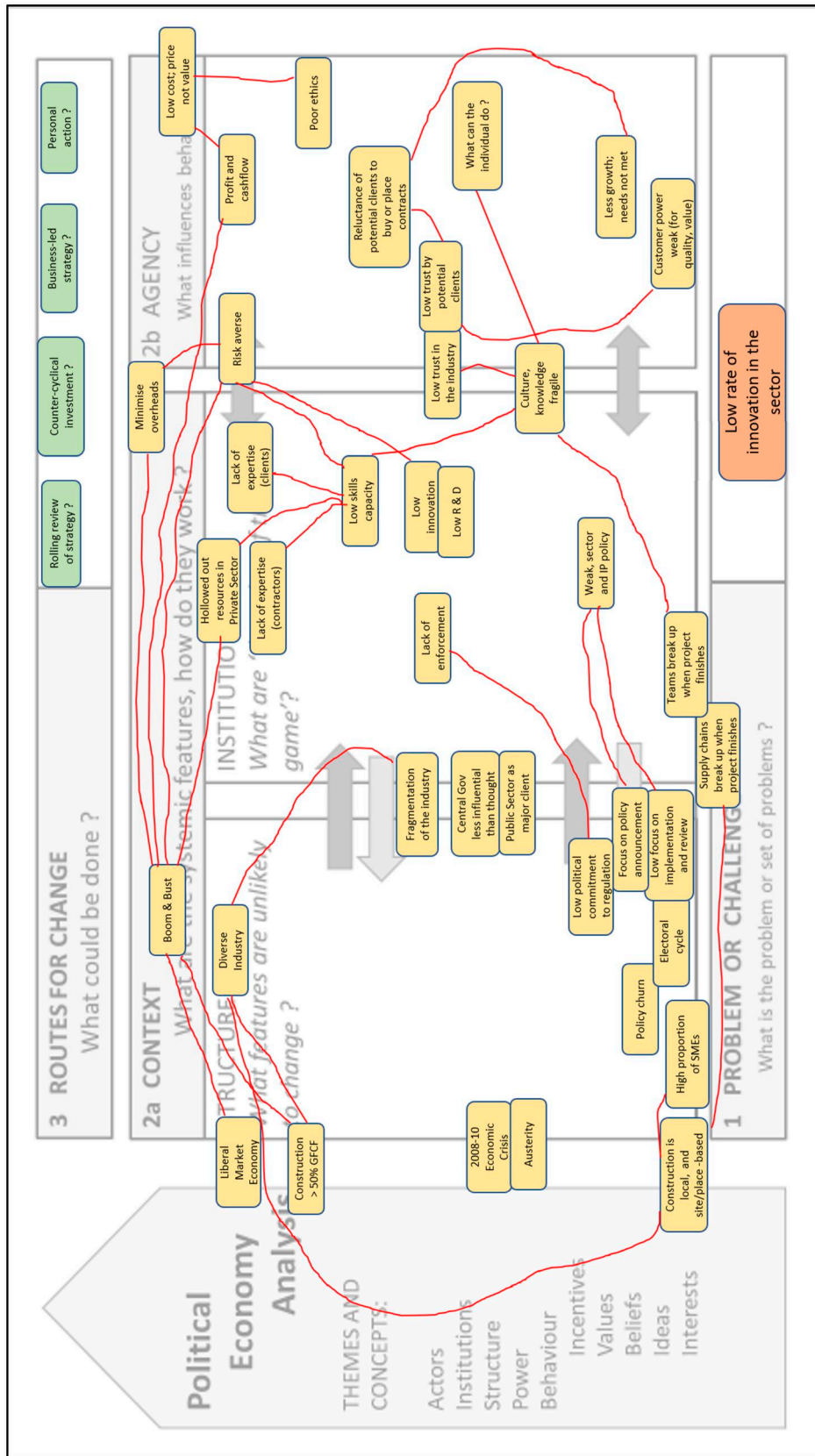


Figure 3. Model for innovation policy (an extract from sector model).

The value and limitations of visualization

Neither word nor image carries any meaning of itself. However, the advantage of using visualization alongside text was found to be substantial in terms of enabling a progressively systemic view in the mind of the researcher during iterative cycles – that is, enabling a simultaneous overview of multiple features, influences and a helicopter or holistic perspective. This was an unanticipated result. The images of the PEA process presented by Poole (2011) and Harris (2013) (discussed earlier) had been expected only to be relevant to the initial explanation of the concepts, whereas an active use of the visualization in PEA seems to be a novel if obvious step.

Yet visualization has been found to be important in other fields where both systemic thinking and collaboration are important. Examples include environmental systems where Pocock *et al.* (2016) reported on the value and methods of the visualization of complex environmental networks for multiple purposes including public advocacy. In technology road-mapping Kerr *et al.* (2012) examined the “psychosocial” processes involved in the use of visualization and recommended that active facilitation is required, allowing expression of competing views while enabling a consensus to take shape. In summary, the PEA template itself (Figure 1) was redesigned during the later stages of analysis, consistent with the abductive process, not just as an illustration of theory and technique as in the PEA literature, but also deliberately both as an aid to reflection by the individual researcher and as a collaborative tool.

Discussion and findings

Findings regarding policy

The analysis at sector level indicated that central government (in the UK) has far less capacity to drive change than most stakeholders publicly or privately admit. The corollary of this is that other stakeholders might have more agency, relative to central government, than they might typically assume. Hence industry is likely to be best served by being aware of central government’s limited power to drive change both within and outside the public sector, especially in a consistent and long-term sense. The implications which flow from this observation seem to include the need for industry to be more prepared to take ownership of their own view of policy objectives and means, and to be more prepared to argue for such view. For example, the CLC, unlike its equivalent the Automotive Council, is not independent of

government and this might compromise its capacity to challenge government, and also leave it vulnerable to loss of interest by government in organized industrial strategy.

The sense that there is also an opportunity for individual firms and practitioners to exercise more agency emerges from this analysis. Indeed, one of the participants, working for a manufacturer of modular housing, saw this as a part of deliberate corporate strategy of a disruptive new business model, while simultaneously engaging with government for new policy (which might support the new business model). In other words, amongst the systemic barriers to change requiring policy intervention, some opportunities meanwhile exist for an individual firm or actor to act entrepreneurially. This point was also made by Sheffer and Levitt (2010, p. 4) in their research into barriers to innovation in the sector:

We conclude by suggesting that these market failures constitute significant opportunities for government actions to address the failures and corporate strategy to gain competitive advantage through successful adoption of integral innovations.

Use of the PEA framework

Use of the PEA framework was found to stimulate a system-wide approach which supports the identification of structural and institutional features, and networks of influence on agency and behaviour. The goal is not to achieve perfect classification, but to foster understanding about how one feature influences another, and about the depth of transformation required for any desired change in policy outcome. The framework allows a visualization of interactions between features to be generated, thus forming a vehicle for communication and challenge which enables a collaborative style of working. The visualization was designed and evolved so that it would be capable of acting as a catalyst both for individual reflection and for collaboration. While the testing of the potential for collaboration was not within the scope of the research as initially conceived, nevertheless, based on the use of visualization in other contexts, we argue that the framework does enable collaboration in this way. Further research to test this proposition would be helpful.

Relevance to other policy within the sector and in other countries

There are two ways in which the PEA model will retain relevance for any future work on policy for the

industry. First, the template itself (Figure 1) is designed to act as a generic template relevant to any discussion of policy (and hence change) for the industry. Second, the observations about features and system added to the template, which contribute to the sector model (Figure 2), could be used as a point of reference both for any new appraisal of the sector level policy and also for any new appraisal of policy (or change) at any level of industry sub-sector or specific topic. Furthermore, some features of structure (e.g. construction is “project-based” and “always happens at a certain place”, etc.) are likely to be universally relevant and hence their consequences (unstable supply chains, risk of loss of task knowledge etc.) are potentially relevant to any country. It follows that use of PEA with policy for construction, and the accumulation over time of both observation and understanding enabled by application in different contexts, is expected to support in a comprehensive way the evolution of policy and change anywhere in the sector.

Potential users of the framework

The framework presented here can be used for retrospective policy analysis, which is the nature of much academic work on policy. It is also particularly relevant to prospective policy analysis – and hence to non-academic audiences. Hence, it is envisaged that there will be a variety of potential users of the framework including:

- academic researchers working in CMR, both in policy processes generically and in any specific area of research where there is a policy implication (such as where existing policy is adverse)
- policymakers, whether national or more local
- any stakeholder affected by construction and construction policy
- it can be used by an individual but the evidence suggests more will be gained if used in collaborative work – including potentially co-production of policy

Summarizing, the PEA approach lends itself to a variety of uses in multiple policy and national contexts, including a variety of users. While the visualization techniques described here are especially suitable for use by non-specialists and industry actors, they also are a vehicle for communication and collaboration between professionals of different disciplines. Clearly, an academic or policy specialist may adopt different emphases on certain aspects such as the use of data

sources, but the real value lies in the platform for evolution of shared understanding between diverse actors as a prelude for change.

Conclusions

Policy for the sector should be understood as integral with the wider societal phenomenon of industrial policy, and as a product of the political economy context.

In the UK, central government has far less agency regarding policy implementation for the sector than is commonly supposed, especially over the longer term. The corollary is that other actors potentially have relatively more agency, compared to government. As a consequence, stakeholders should be prepared to be less passive in relation to policy especially with respect to long-term change. While systemic conditions can act as a brake on change, simultaneously they create conditions for entrepreneurial action by individual actors to anticipate future change.

The contribution to knowledge made by this research is the adaptation of a theoretical framework from political economy for use in construction management research when addressing construction policy and change. For any potential user whether academic, policymaker or stakeholder, the framework acts as a means of challenging any emerging interpretation during analysis. Its use yields a rich understanding of the nature, limitations, and potential of policy for construction whatever the level of policy granularity.

The interpretive approach to policy for the sector, combined with the political economy analysis model itself, allowed exploration of different meanings held by different actors, and of the consequences of such differences. The approach acts as an alternative to the more instrumentally rational approach to policy more usually adopted by policymakers. An interpretive, abductive, methodology was appropriate for the research reported here, which is relatively exploratory in nature. The use of abduction, reflexivity, and iteration of interpretation are all consistent also with pragmatism. Hence, we argue that future research, especially that involving potential co-production with practitioners, might find use of a more deliberately pragmatic philosophy worthwhile and productive.

Many of the emerging insights, especially regarding the systemic effects of structural features, potentially form the basis of an accumulating body of knowledge about policy for the sector. Both aspects – PEA framework and insight into context – are relevant also to policy for construction in any country, and at any level of policy or sub-division of the industry, providing

fertile ground for future research. Such research, using a political economy analysis framework, might include:

- international comparison of construction sectors
- comparison with other sectors of industry
- comparison between sub-sectors within construction
- the political economy of innovation and transformation in construction
- and use of the framework with almost any policy area seen as requiring change.

Finally, the research has developed a new approach to visualization in the use of the framework which supports reflection, debate and collaborative working for future policy, which is also worthy of further research, making use of the existing literature on the potential of visualization.

Ethical approval

Ethical approval for the research described here was obtained through the host institution in 2017, reference 17/03-06. Written consent to participate was obtained from each participant before interview.

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ORCID

Brian Andreas  <http://orcid.org/0000-0002-0118-6324>
 Scott Fernie  <http://orcid.org/0000-0002-3000-0998>
 Andrew Dainty  <http://orcid.org/0000-0002-9317-1356>

References

- Acosta, A. M., and Pettit, J., 2013. *Practice guide: A combined approach to political economy and power analysis - Discussion Note prepared for the Swiss Development Cooperation*. Institute of Development Studies. Retrieved from <https://www.ids.ac.uk/download.php?files/dmfile/ACombinedApproachtoPEandPAAMEjiaAcostaandJPettit2013.pdf>
- Andreas, B., 2019. A Framework for Understanding the Policy Process for Construction. Loughborough University. Retrieved from https://repository.lboro.ac.uk/articles/A_framework_for_understanding_the_policy_process_for_construction_/12302432
- Andreoni, A., and Chang, H.J., 2019. The political economy of industrial policy: structural interdependencies, policy alignment and conflict management. *Structural change and economic dynamics*, 48, 136–150.
- Barbosa, F., et al., 2017. *Reinventing construction: a route to higher productivity*. McKinsey Global Institute. Retrieved from <https://www.mckinsey.com/~media/mckinsey/businessfunctions/operations/ourinsights/reinventingconstruction-throughaproductivityrevolution/mgi-reinventing-construction-a-route-to-higher-productivity-full-report.pdf>
- Bartram, D., 2010. The normative foundations of “policy implications”: reflections on international labour migration. *Work, employment and society*, 24 (2), 355–365.
- Besley, T., 2007. The new political economy. *The economic journal*, 117 (524), F570–F587.
- BIS. (2016). *Government going further to cut red tape by £10 billion*. Retrieved August 3, 2016, from <https://www.gov.uk/government/news/government-going-further-to-cut-red-tape-by-10-billion>.
- Blismas, N.G., and Dainty, A.R.J., 2003. Computer-aided qualitative data analysis: panacea or paradox? *Building research and information*, 31 (6), 455–463.
- Booth, D., et al., 2009. *Political economy analysis how to note. A DFID practice paper*. London: DFID.
- Boyer, R., 2005. How and why capitalisms differ. *Economy and society*, 34 (4), 509–557.
- Bresnen, M., 2007. Deconstructing partnering in project-based organisation: seven pillars, seven paradoxes and seven deadly sins. *International journal of project management*, 25 (4), 365–374.
- Bresnen, M., Goussevskaia, A., and Swan, J., 2005. Implementing change in construction project organizations: exploring the interplay between structure and agency. *Building research and information*, 33 (6), 547–560.
- Bryman, A., 2012. *Social research methods*. (4th ed.). Oxford: Oxford University Press.
- Buse, K., 2008. Addressing the theoretical, practical and ethical challenges inherent in prospective health policy analysis. *Health policy and planning*, 23 (5), 351–360.
- Cairney, P., 2012. *Understanding public policy: theories and issues*. Basingstoke: Palgrave Macmillan.
- Cairns, G., 2008. Advocating an ambivalent approach to theorizing the built environment. *Building research and information*, 36 (3), 280–289.
- Calvo, A.G., and Coulter, S., 2020. Crisis, what crisis? Industrial strategies and path dependencies in four European countries after the crash. *Journal of economic*

- policy reform, Retrieved from <https://doi.org/10.1080/17487870.2020.1785297>
- Carassus, J., 2004. From the construction industry to the construction sector system. In: Jean Carassus, ed. *The construction sector system approach: an international framework*. Rotterdam: CIB, 5–18.
- Christophers, B., 2013. A monstrous hybrid: the political economy of housing in early twenty-first century Sweden. *New political economy*, 18 (6), 885–911.
- Coelho, M., Dellepiane-Avellaneda, S., and Ratnoo, V., 2017. The political economy of housing in England. *New Political Economy*, 22 (1), 31–60.
- Coelho, M.C., Ratnoo, V., and Dellepiane, S., 2014. *The political economy of infrastructure in the UK*. London: Institute for Government.
- Cohen, M.D., March, J.G., and Olsen, J.P., 1972. A garbage can model of organizational choice. *Administrative science quarterly*, 17 (1), 1–25.
- Dainty, A., et al., 2017. BIM and the small construction firm: a critical perspective. *Building research and information*, 45 (6), 696–709.
- Denzin, N.K., 2009. The elephant in the living room: or extending the conversation about the politics of evidence. *Qualitative research*, 9 (2), 139–160.
- Dobbin, F., 1994. Understanding industrial policy choices: a constructivist approach. *Research on Democracy And Society*, 2, 351–379.
- Dubois, A., and Gadde, L.E., 2002a. Systematic combining: an abductive approach to case research. *Journal of business research*, 55 (7), 553–560.
- Dubois, A., and Gadde, L.E., 2002b. The construction industry as a loosely coupled system: implications for productivity and innovation. *Construction management and economics*, 20 (7), 621–631.
- Durnová, A.P., and Weible, C.M., 2020. Tempest in a teapot? Toward new collaborations between mainstream policy process studies and interpretive policy studies. *Policy sciences*, 53 (3), 571–588.
- Edelmann, D., 2009. *Analysing and managing the political dynamics of sector reforms: a sourcebook on sector-level political economy approaches*. London: ODI.
- Egan, J., 1998. *Rethinking construction: the report of the Construction Task Force*. London: Department of Trade and Industry.
- Fernie, S., Leiringer, R., and Thorpe, T., 2006. Rethinking change in construction: a critical perspective. *Building research and information*, 34 (2), 91–103.
- Fischer, F., Miller, G. J., and Sidney, M. S. eds., 2007. *Handbook of public policy analysis*. London: CRC Press.
- Foxell, S., and Cooper, I., 2015. Closing the policy gaps. *Building Research and Information*, 43 (4), 399–406. doi:10.1080/09613218.2015.1041298
- Fritz, V., Kaiser, K., and Levy, B., 2009. *Problem-driven governance and political economy analysis: good practice framework*. Washington: The World Bank, 75.
- Gale, T., 1999. Policy trajectories: treading the discursive path of policy analysis. *Discourse: studies in the cultural politics of education*, 20 (3), 393–407.
- Gale, T., 2003. Realising policy: the who and how of policy production. *Discourse: studies in the cultural politics of education*, 24 (1), 51–65.
- Gorard, S., 2010. Research design, as independent of methods. In: C. Teddie and A. Tashakkori, Eds., *SAGE handbook of mixed methods*, 2nd ed. London: Sage Publications Ltd.
- Green, S., 2011. *Making sense of construction improvement*. Oxford: Wiley Blackwell.
- Green, S., 2016. Modernise ... or not. *Construction research and innovation*, 7 (4), 24–27.
- Green, S.D., 2001. Towards a critical research agenda in construction management. *CIB World Building Congress*, April 2001. Retrieved from <https://irbnet.de/daten/iconda/CIB3060.pdf>.
- Gruneberg, S., 2018. *A strategic approach to the UK construction industry*. Abingdon: Routledge.
- Guba, E.G., 1984. The effect of definitions of “policy” on the nature and outcomes of policy analysis. *Educational Leadership*, 42 (2), 63–70.
- Guest, G., Bunce, A., and Johnson, L., 2006. How many interviews are enough?: an experiment with data saturation and variability. *Field Methods*, 18 (1), 59–82.
- Hackitt, J., 2018. *Building a safer future: final report*. London: Ministry for Housing, Communities and Local Government.
- Hall, P., and Soskice, D., 2001. An introduction to varieties of capitalism. In: P.A. Hall and D. Soskice, eds. *Varieties of capitalism: the institutional foundations of comparative advantage*. Oxford: Oxford University Press.
- Hall, D.M., Whyte, J.K., and Lessing, J., 2020. Mirror-breaking strategies to enable digital manufacturing in Silicon Valley construction firms: a comparative case study. *Construction management and economics*, 38 (4), 322–339.
- Hallsworth, M., Parker, S., and Rutter, J., 2011. *Policy making in the real world*. London: Institute for Government.
- Harral, R. 2019. *Construction needs to change. But change must be client led*. Available September 17, 2019, from Futurebuild website: <https://www.futurebuild.co.uk/blogs-insights/>.
- Harris, D., 2013. *Applied political economy analysis: a problem-driven framework*. London: Overseas Development Institute.
- HM Government. 2013. *Construction 2025*. Available from: <https://www.gov.uk/government/publications/construction-2025-strategy>.
- HM Government. 2018. *Industrial strategy – construction sector deal*. Available from <https://doi.org/10.1049/ir:19930092>.
- HM Treasury. 2015. *Fixing the foundations: creating a more prosperous nation*. Available from: <https://doi.org/10.1017/S0008197300099359>.
- Hudson, D., and Leftwich, A., 2014. *From political economy to political analysis*. Birmingham: Developmental Leadership Programme (Birmingham University).
- Infrastructure and Projects Authority. (2016). *National infrastructure delivery plan 2016–2021*. Available from: <https://www.gov.uk/government/publications/national-infrastructure-delivery-plan-2016-to-2021>.
- Janda, K.B., and Topouzi, M., 2015. Telling tales: using stories to remake energy policy. *Building research and information*, 43 (4), 516–533.
- John, P., 2018. Theories of policy change and variation reconsidered: a prospectus for the political economy of public policy. *Policy sciences*, 51 (1), 1–16.
- Kerr, C., Phaal, R., and Probert, D., 2012. Cogitate, articulate, communicate: the psychosocial reality of technology

- roadmapping and roadmaps. *R and D management*, 42 (1), 1–13.
- Lin Chih, A., 1998. Bridging positivist and interpretivist approaches to qualitative methods. *Policy studies journal*, 26 (1), 162–180.
- Love, P.E.D., Holt, G.D., and Li, H., 2002. Triangulation in construction management research. *Engineering, construction and architectural management*, 9 (4), 294–303.
- McLoughlin, C. 2014. *Political economy analysis topic guide* (2nd ed.). Available from: <http://www.gsdr.org/wp-content/uploads/2015/07/PEA.pdf>
- Morales, A. 2021. *U. K. scraps big-name business panel led by bank of England's Haldane*. Available June 8, 2021, from Bloomberg website: <https://www.bloomberg.com/news/articles/2021-03-04/u-k-scraps-big-name-business-panel-led-by-boe-s-haldane>.
- Moran, M., Rein, M., and Goodin, R.E., eds., 2006. *The Oxford handbook of public policy*. Oxford: Oxford University Press.
- Müller, B., 2016. Policy gaps: future challenges for research. *Building research and information*, 44 (3), 338–341.
- Murray, M., and Langford, D. A., 2003. *Construction reports 1944–1998*. Oxford: Blackwell Science.
- Natow, R.S., 2020. The use of triangulation in qualitative studies employing elite interviews. *Qualitative research*, 20 (2), 160–173.
- Norris, E., and Adam, R. 2017. *All change and what can be done about it*. Available from: https://www.instituteforgovernment.org.uk/sites/default/files/publications/lfg_All_change_report_FINAL.pdf.
- North, D., 1991. Institutions. *Journal of economic perspectives*, 5 (1), 97–112.
- Pettigrew, A.M., 1997. What is processual analysis? *Scandinavian journal of management*, 13 (4), 337–348.
- Pocock, M. J. O., et al., 2016. The visualisation of ecological networks, and their use as a tool for engagement, advocacy and management. Vol. 54. In: G. Woodward and D.A. Bohan, eds., *Advances in ecological research*. Oxford: Elsevier, 41–85.
- Poole, A., 2011. *Political economy assessments at sector and project levels*. Washington DC: World Bank.
- Pozzebon, M., 2002. Critical interpretive research: examining criteria as a key component in building a research tradition. In: J.I. DeGross, Kaplan B., D.P. Truexill, D. Wastell, A.T. Wood-Harper, ed., *Information systems research: vol. IFIP inter*. Boston, MA.: Springer, 276–292.
- Rahmani, F., and Leifels, K., 2018. Abductive grounded theory: a worked example of a study in construction management. *Construction management and economics*, 36(10), 565–583.
- Rhodes, C., 2018. *Construction industry: statistics and policy*. London: House of Commons Library.
- Saunders, B., Kitzinger, J., and Kitzinger, C., 2015. Anonymising interview data: challenges and compromise in practice. *Qualitative research*, 15 (5), 616–632.
- Schweber, L., 2015. Putting theory to work: the use of theory in construction research. *Construction Management and Economics*, 33 (10), 1–21.
- Schweber, L., Lees, T., and Torriti, J., 2015. Framing evidence: policy design for the zero-carbon home. *Building research and information*, 3218 (February), 37–41.
- Seaden, G., and Manseau, A., 2001. Public policy and construction innovation. *Building research and information*, 29 (3), 182–196.
- Sergeeva, N., and Winch, G.M., 2020. Narrative interactions: how project-based firms respond to Government narratives of innovation. *International journal of project management*, 38 (6), 379–387.
- Sheffer, D.A., and Levitt, R.E., 2010. *How industry structure retards diffusion of innovations in construction: challenges and opportunities*. Stanford: Collaboratory for Research on Global Projects.
- Simon, H., 1972. Theories of bounded rationality. In: C.B. McGuire and R. Radnor, eds., *Decision and organization*. Amsterdam: North Holland Publishing Company, 161–176.
- Smiley, J.-P., Fernie, S., and Dainty, A., 2014. Understanding construction reform discourses. *Construction management and economics*, 32 (7–8), 804–815.
- Smiley, J.-P., 2016. *Exploring policy discourses in the UK construction sector: an interpretive analysis* (Loughborough University). Available from: <https://dspace.lboro.ac.uk/2134/22913>
- Taylor, J.E., and Levitt, R.E., 2007. Innovation alignment and project network dynamics: an integrative model for change. *Project Management Journal*, 39 (3), 22–35.
- Thelen, K., 2012. Varieties of capitalism: trajectories of liberalization and the new politics of social solidarity. *Annual review of political science*, 15 (1), 137–159.
- Whaites, A., 2017. *The beginner's guide to political economy analysis (PEA)*. Available from: <https://www.gov.uk/government/news/nsqi-publishes-political-economy-analysis-beginners-guide>
- Winch, G., 1998. Zephyrs of creative destruction: understanding the management of innovation in construction. *Building research and information*, 26 (5), 268–279.
- Winch, G., 2000. Construction business systems in the European Union. *Building research and information*, 28 (2), 88–97.
- Wolstenholme, A. (2009). *Never waste a good crisis: a review of progress since rethinking construction and thoughts for our future*. Available from: https://constructingexcellence.org.uk/wolstenholme_report_oct_2009/.
- Yanow, D., 2003. Interpretive empirical political science. *Qualitative methods*, fall, 1978, 9–13.
- Yanow, D., 2007. Interpretation in policy analysis: on methods and practice. *Critical policy studies*, 1 (1), 110–122.
- Zomer, T., et al., 2021. Exploring the influence of socio-historical constructs on BIM implementation: an activity theory perspective. *Construction management and economics*, 39 (1), 1–20.