ABSTRACT
There is a concerning paucity of Post-decision Project Evaluation (PdPE) of public private partnership (PPP) projects, given how significant this model of public infrastructure delivery has become. Drawing from previous academic and policy proposals, we explore the evidence of PdPE in the planning practice of UK PPP projects. Our findings suggest the planned practice for PdPE is under-developed and ambiguous.

IMPACT
Although the UK is no longer developing new PPP projects there are over 700 existing projects entering their mature operation stage. However, we know very little about how to evaluate whether these projects are still delivering expected outcomes. This paper provides policymakers and managers with an overview of how PdPE was represented at the planning stage of projects, as a basis for developing future PdPE frameworks.

Keywords: Post-decision Project Evaluation (PdPE), Project Evaluation, Public Private Partnerships (PPP), Public Infrastructure, UK.

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1. Introduction

There is a global deficit of public infrastructure; an estimated $3.7 trillion needs to be spent annually (McKinsey, 2017) with Public Private Partnerships (PPPs) seen as an important delivery mechanism. In the UK the Private Finance Initiative (PFI) was introduced in the early 1990s – later re-branded as PPPs – as a significant innovation in public infrastructure modernization (Shaoul, 2005a). PPPs' introduction and subsequent promotion were underpinned by several assumptions concerning relieving pressure on public capital budgets, Value for Money (VfM), risk allocation and the development of management expertise (Broadbent and Laughlin, 1999; Shaoul et al., 2007; Wall and Connolly, 2009). However, it is unclear if the anticipated and promised outcomes have actually occurred. To date, analyses of PPP performance are scarce (Hodge and Greve, 2017; Hodge et al., 2018). One of the reasons for this is the lack of comprehensive ex-post evaluation (Stafford and Stapleton, 2017) guidance and frameworks in academic, policy and practice arenas.

Evaluation of mature, operational PPP projects is important for public policy and management, given the large amounts of taxpayers' money committed over the coming decades. According to HM Treasury (2019), by March 2018 PPP projects in the UK totaled 704, with a combined capital value of £57 billion. It is estimated that up to 2050, the aggregate expenditure for all 704 projects is £188.35 billion (including inflation). It is concerning, in the extreme, that with such a large sum of public money committed to PPPs, we still have no clear data or approach to evaluate their performance after 25 years of the policy's implementation (NAO, 2009). As the National Audit Office observed: "We have also reported [in 2011] that we have been unable to identify a robust evaluation of the actual performance of private finance at a project or programme level. This is still the case …" (NAO, 2018, p. 18).

This paucity of ex-post evaluations reminds us that an important research agenda, outlined by Broadbent and Laughlin (2004), has not developed in any significant manner (see Hodge and Greve, 2018). Further, the need for a form of ex-post evaluation has been constantly indicated in studies addressing different problems in PPP's – for example, the difficulty in achieving cost reductions (Edwards et al., 2004; Shaoul et al., 2006, 2008; NAO, 2018); questionable operational efficiency, higher maintenance spending and inflexibilities (NAO, 2009, 2018); excessive returns gained by private investors through a variety of mechanisms (Vecchi et al., 2013; Smyth and Whitfield, 2017).

Reflecting on the above, this paper explores the lack of ex-post evaluation, specifically in the form of Post-decision Project Evaluation (PdPE), through investigating the planning practice of UK-based PPP projects. Hodge and Greve (2017) point out that PPP projects involve wide-ranging performance dimensions. Prior evaluation efforts have tended to focus on specific performance dimensions, often using ex-ante project appraisal data (cf. Froud and Shaoul, 2001; Shaoul, 2005a; Vecchi et al., 2013; Hellowell et al., 2015), or, when investigating ex-

post performance, using data that is mainly financial in nature (see Shaoul et al., 2006, 2008, 2011).

This paper analyzes the planning practice of PPP projects, exploring how ex-post evaluation was understood and designed at the planning stage. While ex-post evaluation can take different forms, our specific focus is on Post-decision Project Evaluation (PdPE). This form of evaluation occurs at the project level, and is concerned with a range of project outcomes, both financial and non-financial. PdPE seeks to address the questions – whether the project has delivered on the objectives established in the initial (pre-decision) project planning, and, what can be learnt to improve project delivery and strengthen future decision-making (NHS, 1994; DoH, 2002; HM Treasury, 2018a). This link between pre-decision project objectives and post-decision evaluation encouraged us to research the PdPE activities as formulated in the project planning documents (e.g. business cases), with the intention that this work will act a stepping point for future research into the actual practice of carrying out PdPE.

Hodge and Greve (2007) recognize at least five PPP 'families' or arrangements: institutional cooperation for joint production and risk sharing; long-term infrastructure contracts (LTICs); public policy networks where loose stakeholder relationships are emphasized; partnerships for civil society and community development; and, urban renewal and downtown economic development. Our focus is on the second family, where PPP is seen in terms of long-term infrastructure contracts, exemplified by the UK's PFI. Our investigation is based on data drawn from UK PPP projects signed between 1997 and 2016.

We identified several representations of PdPE in the data, suggesting that concept lacks clarity and is under-developed. In analyzing these representations, we utilize the PdPE design characteristics proposed by Broadbent et al. (2003). The National Audit Office (2006) developed a matrix framework for evaluating PPP projects throughout the whole of a project's lifecycle. There have also been other attempts at suggesting ex-post evaluation activities (see English et al., 2010; Shaoul et al., 2007). However, we have adopted Broadbent et al.'s (2003) design characteristics as they provide the basis for a holistic evaluation of PPP projects, are focused on the organizational/project level and specified for the UK context (from which our data is drawn). Broadbent et al.'s (2003) work includes a focus on the unique elements of PPP projects, being proactive (rather than reactive) and paying equal attention to both financial (e.g. traditional VfM) and non-financial (e.g. community benefits) aspects.

Our analysis highlights discrepancies between the planned practice in the PPP documents and the PdPE approach suggested by Broadbent et al. (2003), highlighting the ambiguous and under-developed nature of PdPE at the planning stages of PPP projects. In the process this paper addresses the research calls raised by Broadbent and Laughlin (2004) and echoed in many subsequent studies (see Andon, 2012; Edwards et al., 2004; English et al., 2010; Hodge and Greve, 2007; Shaoul et al., 2007). We focus on the planned evaluation activities in initial

PPP project documents; the empirical experience of implementing these plans are beyond the scope of this paper. With UK PFI projects being considered a relatively advanced form of PPP, our research also generates implications and issues for PPP planning and implementation in other countries.

The paper is structured as follows: section two reviews research related to PPP ex-post evaluation in both academic and policy-making realms, with particular reference to Broadbent et al.'s (2003) PdPE design characteristics; section three explains how the empirical data was collected and analyzed; section four sets out PdPE-related content/information found in the documents, indicating the three representations of PdPE. The paper concludes with a reflection (including limitations) upon PdPE's under-development and ambiguous nature and makes suggestions for future research.

2. The need for Post-decision Project Evaluation (PdPE)

Ex-ante appraisal and ex-post evaluation together constitute a rational framework for allocating resources free from management preference and political influence (Froud and Shaoul, 2001; HM Treasury, 2018a). However, while a number of attempts have been made by governments and academia to explore the ex-ante appraisal of PFI projects (see Gaffney and Pollock, 1999; NAO, 2000; Pollock et al., 2000; Shaoul, 2002; 2005b), far less attention has been given to ex-post evaluation (Broadbent et al., 2004; Edwards et al., 2004). There are some studies that, if not explicitly focusing on ex-post evaluation, seek to examine the success or outcomes of PFI in financial and/or other terms (NAO, 2006; Shaoul et al., 2007).

In this context, Broadbent and Laughlin (2004, p. 8) initiated a call for ex-post evaluation, noting that, "…having exhaustively explored whether to pursue a PPP, it seems almost irresponsible to fail to analyze whether predicted outcomes actually occur". Accordingly, they ask, "…what procedures and processes are in place to provide a Post(decision) Project Evaluation…in different areas and in different countries?". Our paper is an initial response to this question, investigating how PdPE was understood and designed in PPP planning documents.

Initial relevant research came from Broadbent et al. (2003), who propose PdPE design characteristics after investigating the first 17 NHS PFI projects to reach FBC (Full Business Case) stage. Drawing from the pre-decision VfM analysis and post-decision project objectives of these schemes, Broadbent et al. (2003, pp. 437-8) conclude that the design of a PdPE system should:

1) concentrate on only PFI aspects such as risk allocation, FM [Facilities Management] systems and non-financial aspects;
2) recognize that the post-decision project evaluation will inevitably be proactive in nature, particularly in relation to the financial aspects;

3) include non-financial, culturally-related, operational aspects of the PFI project … [as] … a central part of any post-decision project evaluation design relative to the role these played in the pre-contract stage.

These characteristics provide an outline of how PPPs could be evaluated ex-post at the project level. The specific ways in which each element will be mobilized in practice depends upon the individual project being evaluated. In addition to these characteristics, Broadbent et al. (2003; 2004) also distinguish between reactive and proactive evaluation activities, with the former "… trying to adopt a more 'arms length' emphasis to the [PdPE] whereas the latter takes the view that this evaluation should be active in trying to ensure that benefits planned are achieved" (Broadbent et al., 2004, p. 53). The above three characteristics and the reactive/proactive distinction are utilized in analyzing the data below and are further discussed in Section 5 below.

English et al. (2010) (from a performance auditing perspective) suggested an ongoing operational evaluation system for all long-term partnerships with the private sector for providing public services, including PPP. While having its own rationale and logics, the English et al. study suggests some overlaps with those of Broadbent et al. (2003). For example, English et al. (2010) uphold that assessments should be based on the three Es (economy, efficiency and effectiveness). For assessing effectiveness, particularly, they emphasize that the role of the auditor/evaluator should move beyond 'critic and nark' to 'coach and mentor', i.e. conducting evaluation for improvement rather than just checking compliance. This is consistent with Broadbent et al.'s (2003) emphasis on being proactive in the evaluation process, highlighting the importance of going beyond a 'watchdog' to proactively ensure future achievements or improvements.

Other studies on evaluating long-term public service projects also overlap with Broadbent et al.'s (2003) characteristics and/or English et al.'s (2010) suggestions. English (2007), explores performance auditing in some Australian regions, arguing that such activity mainly focuses on compliance with pre-contracting procedures but not substantive matters such as the ex-post attainment of PPP project objectives. Similarly, English et al. (2010) hold that internal evaluation is necessary but not sufficient for evaluating the three Es for PPP projects; arguing instead that a more deliberate methodology should be established to ensure public accountability for PPP achievements. Shaoul et al. (2011) also note the absence of ex-post external and independent scrutiny of PPP; suggesting that the lack of transparency of private sector partners hampers such analysis. Earlier, Shaoul et al. (2007) had appealed for a public and independent post-implementation review, going beyond basic costs and benefits of PFI projects to involve broader economic and social issues. These arguments echo Broadbent et al.'s (2003) proposal that ex-post evaluations should incorporate a broader evaluation including non-financial, cultural and operational perspectives.

In the policy-making realm ex-post evaluation also remains under-developed. After PFI's 1992 introduction, an early initiative came in the NHS' *Capital Investment Manual* (CIM) (NHS, 1994). The Manual has a chapter on PdPE, making clear its position that it should be mandatory for projects with costs above £1m. A PdPE chapter was also included in the Department of Health's *Good Practice Guide* (DoH, 2002), without substantial changes or development from the CIM. The only other significant government guidance appears in a *Green Book* chapter: *Guide to developing the Project Business Cas*e (HM Treasury, 2018 a,b), in which PdPE is mentioned in general terms. PdPE is prescribed as a preliminary consideration for the Strategic Outline Case (SOC), and then planning for it should be in the management case at the Outline Business Case (OBC) and Full Business Case (FBC) stages. The Guide defines PdPE's purpose in a twofold manner: "To improve project delivery through lessons learnt during the project delivery phase…often referred to as the Project Implementation Review (PIR); To appraise whether the project has delivered its anticipated outcomes and benefits...often referred to as the Post Evaluation Review (PER)" (HM Treasury, 2018b, p. 83).

The above highlights the calls from both academic literature and government guidance for more attention to the PdPE agenda. However, many of these calls are nearly two decades old, with little advancement on the topic since, leading Andon (2012, pp. 892-893) to observe: "…there is an opportunity here for researchers to take the lead, driving structural, policy and procedural debate to stimulate development in ex-post evaluation practices associated with PPP schemes". We now turn to the data collection and analysis methods employed.

3. Data and method

Our study adopts a document analysis approach. We collected publicly available documents, released by government or local authorities following requests made (by the authors and others) under the Freedom of Information Act 2000. We utilized three types of project document: the FBC, the OBC, the SOC. In total 101 documents were collected covering 86 PPP projects (1997-2016). The vast majority of these were business case documents – with 53 FBCs, 41 OBCs, and 7 SOCs – drawn mainly from the education and health sectors (see Table 1).

Sector	Education	Health	Transport	Waste	Other	Total
Number of documents	41	36	9	8	7	101

Table 1. Number of documents by sector (for some projects both the OBC and FBC was secured).

Our dataset contains a disproportionate number of Scottish projects – around 60% of the documents (56% of the projects) cover Scottish projects. This is due to the differing attitude of the devolved Scottish government who have made a policy choice, in the public interest, to publish some relevant PPP project documents. In England and Wales, we are still reliant

upon individual Freedom of Information requests to secure access to these documents, resulting in a smaller and more ad hoc data pool for projects from these jurisdictions.

For large procurement projects in the UK, the government advocates developing the business case through three stages: SOC, OBC and FBC. The SOC is a brief preliminary document introducing the basic project concept and containing enough detail to support an informed decision on whether to proceed to an OBC. The OBC requires a much more comprehensive analysis covering strategic fit, costs, benefits, risks, funding and necessary management arrangements for successful scheme delivery. The FBC is composed prior to financial close and the contract award. It provides all the information required to support a decision to award a contract. It puts in place detailed management arrangements for successful delivery, monitoring and evaluation (HM Treasury, 2018b).

Using Nvivo 12 software to analyze the documents, we applied a qualitative content analysis approach. Altheide and Schneider (1996) outlined this approach, calling it ethnographic content analysis (ECA). In ECA, the researcher's role, in constructing meaning, typically entails applying predefined categories to empirical data but allows greater potential to refine the categories and generate new ones. The researcher constantly revises themes or categories when examining documents (Bryman and Bell, 2014). This approach allowed us to make sense of the collected documents which lacked clear, standard structures or wordings.

Our ECA analysis involved two stages. In the first stage, we read through documents one by one from beginning to end. This step allowed us to develop a comprehensive understanding of the projects regarding their background, objectives and impacts. We also became familiar with the structure, layout and key components of the documents. While reading the whole document, we identified content that was related to PdPE. We also drew from a few pre-defined categories, summarized from the literature, to see if they were included. In doing so, we were able to set up our codebook with relevant codes such as 'Post-Decision Project Evaluation', 'benefits realization plan', 'benefits register', 'project monitoring', 'post-implementation reviews', 'payment mechanism', 'performance monitoring', 'investment objectives', 'contract management', 'post award contract management', 'Gateway Review'. Among all these codes, the most relevant and frequent ones were 'Post-Decision Project Evaluation', 'benefits realization plan' and 'performance/project monitoring'. In the second stage, we focused on this PdPE-related content, going back and forth, continuously comparing and refining them. We found that limited content was evident concerning how PdPE should be designed and undertaken. Finally, we organized the data into three emergent representations of PdPE – 1) PdPE as benefit realization; 2) Conducting PdPE and 3) Detailed planning and learning. The next section sets out our findings across these three representations.

4. Various representations of PdPE

Overall, we found that information on PdPE is limited in the documents. Specifically, in SOCs, there is no substantial inclusion with only two documents mentioning PdPE. Fifty percent of FBCs (26 out of 53) included PdPE, while for OBCs the proportion was thirty percent (12 out of 41). In general, these project documents were not systematically or uniformly structured. No common or uniform PdPE processes were evident. Project documents from different periods and sectors describe PdPE with different wordings, perspectives and logics, representing divergent understandings of PdPE. Below we present the three emergent representations of PdPE in these documents.

4.1 The first representation – PdPE as benefit realization

The first representation is from a group of four projects in the late 1990s and the early 2000s, covering three school projects and an office building. As mentioned earlier, PdPE has often been compounded with other cognate concepts and this is evident in these projects. These FBCs regarded PdPE as simply the same as benefits realization, with both under the umbrella of the general performance monitoring plan:

> "The subject of performance monitoring requires to be split into two separate elements:
> 1) *Post project evaluation* ***or*** *benefits realisation* to assess on a continuing basis whether the Council has met its strategic policy objectives;
> 2) Performance monitoring to assess the quality and standard of delivery of the services being provided by the Project Company throughout the life of the project" (From the Chapter *Benefits Assessment, Project Evaluation Plan and Performance Monitoring* of Aberdeenshire Council Oldmeldrum and Banff School PPP FBC; East Renfrewshire Council School PPP1 FBC; Midlothian Council School PPP1 FBC; Perth & Kinross Council Office Accommodation PPP FBC).

PdPE is limited to benefits realization which is assumed to have already taken place:

> "…the Council's objectives in undertaking the Project are outlined earlier and summarised in the form of benefits attributable to the project. *Most of these benefits have been realised through the procurement process itself* and the monitoring arrangements will further support the benefits realisation" (Aberdeenshire Council Oldmeldrum and Banff School PPP FBC; East Renfrewshire Council School PPP1 FBC; Midlothian Council School PPP FBC).

An initial point to note is that the same exact wording was found in multiple FBCs, indicating that public sector partners may have developed standard wording for such PPP project documents. The quote, highlighting that most benefits have already been realized through the procurement process, raises two relevant points. Firstly, it is not difficult to see why PdPE has not been developed through any subsequent planning as it was assumed that most anticipated benefits would be realized through the procurement process.

Secondly, benefits attributable to the project are based on the Council's strategic objectives in undertaking the project. The councils' strategic objectives/project benefits are presented in Table 2 below:

School site and facilities' benefits	*Scope for further expansion*: ensure campus capable of expansion; *Access*: co-ordinate "safe routes to school" proposal; *Flexible use of accommodation*: modern building techniques to ensure accommodation adaptable to changing curricula; *Security*: integrated security measures will be provided.
Educational benefits	*Classroom facilities*: bright, well-lit and well ventilated rooms; *Expansion of curricular activities*: allow joint senior classes; *Sports facilities*: achieve wider range of sport activities; *Special need*: provide state of the art facilities for pupils who are less able.
Community benefits	Allow third party and wider community use of sport facilities and classrooms: E.g. specialist classroom facilities like language laboratories.

Table 2. Benefits identification of school PFIs. (Source: Aberdeenshire Council Oldmeldrum and Banff Schools PFI FBC, 1998; East Renfrewshire School PPP1 FBC, 2000)

Looking at these benefits, we can see that a certain level of realization can be attributed to the design of the new buildings and facilities, achievable through the project appraisal process by choosing the preferred (New-Build) option. However, it is also clear that, in line with Broadbent et al.'s (2003) characteristics, there are non-financial benefits among the Council's strategic objectives (e.g. community benefits). Realizing such benefits requires not just construction but a number of years of operation, the setting of appropriate evaluation criteria and then an evaluation exercise. Therefore, the procurement process alone cannot deliver on all elements of benefits realization. By extension, a PdPE system is required to address the non-financial aspects of the PPP projects.

Further, the data also makes plain that monitoring arrangements are limited to a focus on deductions in the unitary payment. The FBCs summarized the proposed key performance monitoring arrangements as follows:

> "The Council has incorporated a performance monitoring system. This system will ensure that there is a sufficient incentive on the Service Provider to ensure that the required level of service is provided throughout the life of the contract. *The principal mechanism is the payment mechanism*. Through this mechanism the Service Provider will suffer deductions from payment if there is a service shortfall or unavailability" (The chapter *Benefits Assessment, Project Evaluation Plan and Performance Monitoring* Aberdeenshire Council Oldmeldrum and Banff School PPP FBC; East Renfrewshire Council School PPP1 FBC; Midlothian Council School PPP FBC).

Broadbent et al. (2004) identify such deductions as one part of their first design characteristic of a PdPE system, specifically dealing with financial aspects and risk allocation. However, a holistic PdPE process covers much more than just performance monitoring for payment calculation.

4.2 The second representation – Conducting PdPE

The second PdPE representation is present in a dozen projects over the early to mid-2000s. The data indicates some positive developments in planning for PdPE, with evidence of evaluation structures and proactive approaches being proposed.

One example is found in the FBC of Stirling Council's Balfron School PPP. Instead of explicitly clarifying the PdPE plan, the FBC introduced a 'project steering group' that would "…evaluate the evidence regarding project performance under the following headings: Value for Money; Monitoring of Payment Mechanism; Educational Targets; Community Use; Contract Changes". This suggests a holistic understanding of PdPE. The FBC goes on to state that the Council "…intends to reconvene the steering group at regular intervals after the completion of the project". In so doing, the Council will be able to "…evaluate the implementation of the project, thus *ensuring* that the original objectives are being achieved". This suggests the Council has a 'proactive' approach to undertaking PdPE.

Other examples are from the FBC of Birmingham New Hospitals PFI and the OBC of East and North Hertfordshire NHS Combined Heat and Power PFI. In the former, PdPE is seen as mainly three types of review, covering different project phases: Project and Procurement; Construction and Commissioning; and, Operational. In the latter, three similar periodic inspections were indicated at: implementation (building works and installation phase); shortly after the new facility is fully operational; and, once the service is well established. At each stage, relevant evaluations and audits will require a range of reviews and assessments.

In Birmingham New Hospitals PFI FBC, the Operational Review contains the following: "…in the first three years after opening…the new facilities, an operational review should be performed comparing the prevailing activity, performance and service models with those predicated in the FBC". This indicates a move beyond the limited formulation of PdPE being exhausted through the procurement process. However, the FBC makes clear that PdPE would be finalized after three years of operation, which raises the question whether the entire PdPE process is to be ended after the first three years' operation. If so, this would depart from Government guidance's call for on-going continuous evaluation throughout the project's life (DoH, 2002; NAO, 2006; NHS, 1994).

4.3 The third representation – Detailed planning and learning

The third representation emerges from relatively recent projects (contracted since 2007), and is, in the main, present among NHS projects. It involves a more detailed approach to PdPE and has three substantive features.

Firstly, this representation identifies four key stages of PdPE, largely influenced by the NHS guidance. The NHS' CIM introduced a three-stage PdPE process, which was extended to a four-stage process by the Department of Health's (DoH) 2002 *Good Practice Guidance,* as set out in Table 3.

Stage 1	At the initial project stage, the work scope and cost will be set out.
Stage 2	Progress will be monitored and evaluation of project outputs will be carried out on completion of the facility.
Stage 3	PdPE of the service outcomes, 6 months after the facility is commissioned.
Stage 4	Follow-up PdPE to assess longer-term service outcomes two years after the facility has been commissioned.

Table 3. The four-stage PdPE process. (Source: *Good Practice Guidance: Learning Lessons from Post-Project Evaluation* (DoH, 2002), and, some FBCs, Modernising Health Services in Wakefield District and North Kirklees OBC; Eastwood Health Centre OBC; Maryhill Health Centre OBC; New Radiotherapy Service at Great Western Hospital Swindon FBC**)**

This four-stage process specifies PdPE as an evaluating activity running throughout the project's main stages from planning (in the business case) through design, management, implementation and operation. Although, again, evaluation appears to be limited to the first two years of operation.

Secondly, this PdPE representation refers back to the original investment objectives, and a benefits realization plan. For Broadbent at al. (2003, 2004), a benefits realization plan was seen as a 'proactive' PdPE strategy. Here we find business cases often giving mixed messaging by blurring boundaries between PdPE and benefits realization, leaving ambiguity that hinders the clear development of PdPE processes.

To illustrate, the NHS' CIM proposed that projects use a logical framework (termed a project framework) to build up a PdPE plan at FBC stage. It is a 4x4 matrix, with 'Objectives', 'Performance Indicators', 'Method of Measurement' and 'Assumptions and Risks' as the headings for the four columns, 'Policy/Business Aims', 'Project Objective', 'Outputs' and 'Input' as the headings for the four rows. This framework links the original project objectives to corresponding measurements and makes plain the connections between the inputs and outputs. However, we found that only three projects had applied this framework (the healthcare projects in Argyll, Glasgow and Swindon). Instead, most of the recent NHS PPP projects included a benefits realization plan.

As with the projects mentioned in the first representation above, these projects' identified benefits are tightly linked to the investment objectives. These included relative value (high/medium), relative timescale (long/medium/short term) and financial effect (cash-

releasing/non cash-releasing) (quantitative/qualitative/both). Table 4 contains an example of benefits identification with the criteria of financial effect included.

Objective Type	Example	Related Benefit	Financial Effect
Economy (doing things more cheaply)	Lower unit cleaning costs	£Cost/m^2	Cash Releasing
Efficiency (doing more with the same)	Reduced need for portering	Numbers of portering staff	Cash and Non-Cash Releasing
Effectiveness (doing things better)	Improved clinical adjacencies	Reductions in ALOS	Typically Non-Cash Releasing
Quality	Improved "patient environment"	Reduced complaints	Typically Non-Cash Releasing

Table 4. PPP Investment objectives/benefits and performance criteria (Source: Redevelopment of Salford Royal Foundation Trust site PFI FBC)

A benefits realization plan was then developed including criteria such as, 'Baseline Measure', 'Measured By or Reviewing Method', 'Improvement (Results or Targets)', and 'Delivered by/Responsibility for Delivery'. Despite these detailed developments most projects simply moved their regular monitoring arrangements/activities to measuring benefits realization. A holistic approach to PdPE was not evident in any of the documents.

Overall, we found an intention to use existing performance monitoring systems as much as possible in measuring the benefits realization of the projects, which in turn is assumed to satisfy any need to carry out PdPE.

Lastly, the third feature of this representation concerns the *learning* process/function of PdPE. This function has been constantly addressed in related policy guidance (DoH, 2002; HM Treasury, 2018 a,b; NAO, 2006; NHS, 1994) and is now appearing in more recent business case documents:

> "The key objective of Post Project Evaluation is the review of all phases of the project to ascertain whether any learning can be taken by the organisation from its implementation to take forward into future development" (Redevelopment of Salford Royal Foundation Trust site PFI FBC).

The learning function is a notable, recent development in PdPE planning practice.

4.4 Findings summary

In summary, the first type of representation expresses a conflicting logic. It equates PdPE with benefits realization and situates both as integral to performance monitoring but indicates that performance monitoring facilitates benefits realization. More surprisingly, it asserts that most project benefits will be realized through the procurement process itself. Monitoring or

measurement systems based on such thinking clearly do not comply with neither Broadbent et al.'s (2003) PdPE design characteristics nor the early guidance on post-decision performance evaluation from government departments. There is an overemphasis on procurement related outcomes, in terms of financial and physical benefits and an overlooking of non-financial benefits (for example, community use of facilities). The second representation further obfuscates and limits processes of PdPE. There is a common misunderstanding that regards PdPE as a one-off evaluation to be done during the project's early operation (i.e. the first three years). The third representation sees PdPE in more detailed and specific aspects such as defining different evaluation stages, expanding benefits realization approaches and incorporating a learning emphasis. However, a common issue is that when it comes to actual PdPE arrangements, most attention is given to a benefits realization plan rather than a specific PdPE plan. And again there is limitation on the time horizon to the first few years of the project's operation.

Overall, benefits realization emerged as the focus and is seen as central to PdPE. Some FBCs even assert that PdPE is an adjunct to the benefits realization plan. However, we agree with Broadbent et al. (2003; 2004), who understand benefits realization as forming part of, but not exhausting, PdPE. The third representation goes beyond the first two types, and points towards the development of holistic PdPE processes; however, it is still substantially under-developed. Much of the content is directly transferred from the CIM (NHS, 1994) or the Good Practice Guidance (DoH, 2002) without being blended into the actual circumstances of individual projects. Moreover, it is limited to the health sector as there is no specific guidance on PdPE for other sectors (such as roads or schools). A commonality of the three representations is simply that they portray PdPE as evaluation against financial investment objectives, set out initially for the project. Again, Broadbent et al. (2003; 2004) warn against such financial reductionism and argue in favor of including non-financial evaluation criteria as well.

The three types of representations present a confused picture on PdPE and related project management arrangements. Without giving any clear and meaningful definition of PdPE, the data highlights the blurring between PdPE, benefits realization and performance monitoring in the FBCs. Overall, PdPE is shown to be under-developed and ambiguous.

5. Discussion and Conclusion

This paper reports on PdPE as contained in PPP planning practice. Analyzing 101 PFI project documents, we encountered different conceptions of PdPE, varying over time and between sectors. There was not a unified/standard definition of PdPE, instead we found ambiguous and under-developed (if not absent) PdPE plans.

It has been more than 15 years since Broadbent et al. (2003; 2004) made an initial attempt at proposing design characteristics for PdPE, focused at the project level and specified for UK

PFI projects. Our findings indicate the usefulness of these design characteristics for understanding, assessing and prescribing PdPE processes, while also indicating the limited and patchy progress that has been made, over the past 15 years.

For Broadbent et al. (2003), PdPE should focus on the unique PFI elements, which they see as risk management, facilities management and non-financial benefits analysis. We found that it is only in NHS projects that risk management sometimes appears as part of PdPE. Regarding non-financial benefits analysis, there was very limited evidence of evaluation criteria being developed and it was mainly present in recent NHS projects.

Broadbent et al. (2003) stress that PdPE should be proactive and identify 'a benefits realization plan' as indicative of this characteristic. While we found significant evidence of such plans in the data, our findings indicate that benefits realization is a confusing construct with an ambiguous, sometimes conflicting, relationship to PdPE. Benefits realization has been regarded either as equivalent to, subordinate to or even broader than, while also including, PdPE. It is invariably based on monitoring arrangements, seen in terms of a reactive performance management.

Broadbent et al. (2003) also hold that evaluations used at pre-contract decision stage should be translated into PdPE and contribute to proactive evaluation. We found little evidence of such planned activity. Most efforts concerning financial evaluations are tied into the payment mechanism that reflect performance failures or related problems. While such activity can contribute to the first of Broadbent et al.'s (2003) PbPE elements, it does not constitute a developed holistic evaluation process that is both proactive and reactive, covering financial and non-financial benefits. Although not the focus of this paper, we also note that empirical studies have found penalty deductions for under-performance difficult to establish and implement in practice (Broadbent et al. 2004; Edwards and Shaoul, 2003).

For Broadbent et al. (2003), PdPE should also recognize the importance of non-financial aspects such as project design, stakeholder relationships, and more broad-scope culturally-related aspects. We found very few (mainly NHS) projects that included plans to seek stakeholder opinions, in their PdPE outlines. Some of these instances were just taken from the *CIM* verbatim. Wider stakeholder or community benefits were rarely mentioned.

Overall, Broadbent et al.'s (2003) design characteristics are still substantively absent from all but a few NHS projects. Nor is it the case that projects were adopting an NAO (2006) inspired evaluation framework. More than two thirds of our collected project documents were produced after 2003, and PdPE planning has not notably progressed in terms of the Broadbent et al. proposals over this period; despite the evidence of a little development when comparing earlier and later projects. The most advanced and detailed PdPE arrangements still make explicit reference to the NHS's CIM and the *Good Practice Guidance* which were both issued early in the PPP era, and for the health sector. It is evident that PdPE-related planning remains under-developed.

This position has significant implications for policy and practice in the UK and lessons for other jurisdictions. While in the UK development of new PPP projects has ceased, private finance remains an important source for future infrastructure investment. According to the *National Infrastructure Pipeline* issued by the Conservative government, the infrastructure market was underpinned by £411 billion investment, with more than half the funding expected to be from private finance (HM Treasury, 2015); indicating that future policy will need to be attractive to private investors (Panayiotou and Medda, 2014; Hellowell et al., 2015). This suggests the need for more research into PPP ex-post evaluation and related areas. In addition to helping establish the appropriateness of investing public money through PPPs, such a holistic, clear and robust evaluation framework is more likely to be attractive to private investors.

While this paper has focused on the planning of PdPE, we are acutely aware that the practice may be considerably different. Therefore, we recognize the need for more research into actual PdPE practice: research that examines whether and to what extent evaluation is happening in PPPs; if there has been PdPE activity going beyond the limited arrangements indicated in project planning documents; whether any commonly accepted PdPE approaches are emergent through operational practice. There is also a need to inquire into the interpretive aspects of PPP ex-post evaluations, including how people understand PdPE, whether lack of PdPE in either planning or operating projects is recognized, and how people from different sectors view the role of, and need for, PdPE. This work should also explore the standardization of wording we found in the PPP project documents, and what the parties preparing such documents understood of the sections covering PdPE.

Further, the absence of a comprehensive PdPE policy reflects a deficiency in PPP governance mechanisms (Stafford and Stapleton, 2017); in regulation of hybrid organizations, including PPP projects (Hodge and Greve, 2018); in information availability, transparency and accountability for public money (Shaoul et al., 2012). As noted by Andon (2012), the lack of inquiry into the operation of PPPs post-financial closure highlights a substantial gap in our knowledge. This gap includes potential theoretical developments; for example, assessing if Broadbent et al.'s (2003) design characteristics remain appropriate as a basis on which to design a PdPE process. We hope our paper will generate a new interest in seeking to understand both the theory and actual practice of post-decision project performance.

Lastly, we call for more PdPE policy guidance. It is frustrating that over three decades, the only external reference point for PdPE remains the 1994 *CIM* and the 2002 *Good Practice Guidance* from the NHS. Though PdPE has been mentioned in more general government guidance, such as the *Green Book*, the way this was done seems to be just scratching the surface. The Government makes clear the importance of long-term consistent PdPE practice at a project level: otherwise there will continue to be insufficient evidence to enable the conduct of programme reviews and lesson-learning (NAO, 2018).

Our study also has limitations. This paper draws on just one data source – project planning documents. This may lead to a partial analysis of the issues. For example, we found little data

on the non-financial aspects (e.g. community benefits) within PdPE planning practice but such "softer" aspects might be given more emphasis in actual practice. Moreover, our data is limited to O/FBC documents which are the earliest informative documentation of a PPP project. As PPP policy and practice has developed, there might be changes in actual project evaluation practice. Considering this, future research should focus on contemporary project data, in the forms of operational review documents/reports and interviews. The former includes annual performance reporting, benchmarking or market-testing documentation, stakeholder communication and relevant auditing reports (e.g. Gateway reviews). The latter covers public sector officers such as PFI representatives from councils or trusts; private sector managers from the PPP company and sub-contracting providers; service users such as head-teacher, business managers, staff and parents in PFI schools, senior management, staff and patient representative groups in NHS trusts.

Finally, our data set comprises documents covering approximately one-eighth of the operating PPP projects in the UK. This is a reflection of the continued lack of transparency involved with the whole PPP policy, especially in England, where project documents remain confidential to the project partners and not available for public scrutiny (Hodge and Greve, 2018). We echo the call by other PPP researchers (Shaoul et al., 2012) for more PPP project related documents to be published, to aid transparency and accountability processes for the policy as a whole.

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