

Managing safety in outsourced relationships

Report submitted to the IOSH Research Committee

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Abstract

Managing organisational safety performance in outsourced relationships is challenging, in part because of the diversity of contractor characteristics. Focusing on the outsourced task and building on existing research, this study differentiates contractors according to the strategic significance to the client of the outsourced task and its complexity, providing a 2x2 matrix applicable to both firms and individuals.

This study seeks to answer the following question: “What safety processes and practices are found at the lead firm–supplier interface following outsourcing?”

It does this in two ways. First, a systematic review of relevant empirical investigations indicates that most studies investigate the risks and safety management practices associated with routine tasks. Following Quinlan’s framing of outsourcing risks, we identify that risks are mainly related to economic pressures or disorganisation. Safety management practices emphasise the ‘do’ and ‘check’ elements of the PDCA cycle. Little attention is paid to the ‘act’ element.

Second, we conducted seven case studies of outsourced relationships between international organisations in the engineering, pharmaceutical and logistics sectors and contractor organisations. Several of these cases related to the outsourcing of facilities management. Data was captured through 60 semi-structured interviews, with respondents from both organisations where possible. Consistent patterns of safety management emerged from the case studies, revealing five essential clusters of practices: employing, deploying, engaging, assuring and learning (EDEAL). Typically, learning, which included reporting and reviewing, was poorly done.

Executive summary

Outsourcing is one of the most significant and enduring organisational change initiatives of the modern era, occurring not only in private companies but also in public sector organisations across the globe. However, it introduces safety risks to the organisation. The aim of this project was to understand how to sustain and enhance safety performance in a client firm following the decision to outsource activities to a contractor.

Outsourcing relationships occur between firms and between firms and individuals, and therefore are not all the same. To accommodate these differences and allow comparison, a 2x2 conceptual framework was developed to differentiate outsourced activities according to (i) their contribution to the strategic goals of the firm (core, peripheral) and (ii) the nature of the task (routine, complex). This was used to categorise each of the 44 empirical studies identified through a systematic review of the literature. These outsourced activities were predominantly routine in nature and core, rather than peripheral, to the firm's strategic goals. This review showed that safety risk factors associated with outsourcing were attributed either to economic and reward pressures (characterised by job insecurity, working at pace and time pressure) or to disorganisation (comprising limited training and supervision, poor communication, and inadequate safety management systems). It showed that safety management practices were more fully described for outsourcing relationships between firms than for those between firms and individuals. Moreover, safety management practices clustered around the 'do' and 'check' stages of the PDCA cycle, emphasising either control, communication and competence, or monitoring. There was little or no information about 'act', suggesting that learning in outsourced relationships is weak.

A series of seven embedded case studies in three global organisations from three different sectors (engineering, pharmaceuticals and logistics) formed the basis of the empirical investigation. Employees from both the client and the contractor company were interviewed and provided details of the safety management practices and how they have changed, the nature of the working relationship between the companies, and the contribution of the contractor to improving safety performance in the client firm.

The safety management practices identified in each of the cases were broadly similar, following a common five-cluster, 13-practice framework. The five clusters are employing, deploying, engaging, assuring and learning. In each case, considerable attention was paid to the employing (selection and recruitment) and deploying (inductions, RAMS and permits to work) stages. The practices of engaging were variable across the cases; written communications were rare in some circumstances. Assuring (including monitoring, inspecting and auditing) was rigorously executed, but limited attention was paid to either reporting or reviewing. Learning was therefore inhibited and improvements to safety performance limited. It's suggested that institutional pressures significantly contribute to the convergence of safety management practices across different sectors.

In addition to helping to develop the five-cluster, 13-practice framework for managing safety in outsourced relationships, each case revealed specific issues associated with outsourcing. These have been developed into a series of short case studies and associated learnings and are provided in the summary report.

INTRODUCTION

Organisations universally operate within a set of relationships wherein one organisation influences the activities of another. The management of organisational safety, however, is more often considered from the perspective of a single focal organisation rather than through a relational lens, and without regard for the influence of another organisation on the safety management practices of the focal organisation. In an increasingly competitive and interconnected world, this is an unfortunate oversight, especially because safety-related incidents are commonly associated with failings at the interface between organisations.

Outsourcing is one regularly occurring example of the creation of organisational interfaces in the pursuit of competitive advantage. Moreover, it's an activity that holds considerable interest from a safety perspective. Activities that are outsourced to contractors can be a source of accidents or near-miss incidents for the focal firm. Contractors often take on the riskier tasks that are outsourced by the focal organisation (Hintikka, 2011). Furthermore, there is considerable evidence that contingent workers, including contractors, are more prone to accidents and illnesses (Mayhew and Quinlan, 1997; Alali et al., 2016) than permanent full-time employees of the focal organisation. Outsourcing has significant safety implications, and its effective management demands our attention.

Accident and injury reports attest to the challenges to effective safety management created by the practice of outsourcing activities to contractors. High-profile cases of serious incidents in the UK involving contractors and outsourced activities are common. These include, for example, the explosion and fire at the Buncefield oil depot in December 2005, where the design and operations procedures were not communicated adequately from contractor to client (HSE, 2011a); the derailment at Hatfield in October 2000, where Railtrack failed to adequately monitor Balfour Beatty's track maintenance schedule (Office of Rail Regulation, 2006); and the exposure of the public and staff to asbestos during refurbishment at Marks and Spencer stores in 2006 and 2007, where the client imposed constraints on contractor operations (BBC News, 2011). In many of these cases, there was a failure to adequately identify and manage the safety risks inherent in the situation, and more particularly the safety risk factors introduced by outsourcing. This project systematically investigates how safety is managed in tasks or activities that are outsourced either to other companies or to individuals.

The report comprises two main sections: a literature review and an empirical case study. These two sections are preceded by a shorter section below. This:

- i. provides a definition of outsourcing
- ii. identifies some of the safety risk factors associated with outsourcing, drawing particularly on the various studies conducted by Quinlan and his colleagues in Australia
- iii. indicates a set of practices and procedures that follow the PDCA cycle that the UK's Health and Safety Executive suggests can be used to manage health and safety.

Together, these provide the foundation for a structured investigation of how processes, practices and personal relationships can contribute either positively or negatively to a firm's safety performance following the outsourcing of organisational activities.

The literature review followed the steps of a systematic review and adopted a framework synthesis methodology. The 2x2 conceptual framework was derived from studies in human resource management and supply chain management that permitted the synthesis of information from both firm-to-firm and firm-to-individual outsourcing relationships. The purpose of the framework was to permit a differentiation between different types of outsourcing; not all outsourcing relationships are the same. Data from the selected studies revealed the safety risk factors and safety management practices in different types of relationships. It also identified the limits to current knowledge.

The empirical case studies report current safety management practices in outsourcing relationships in three different global companies operating in three different sectors (engineering, pharmaceuticals and logistics). These companies outsourced a variety of tasks, including facilities management, construction and specialist activities. Where possible, interviews were conducted with informants from both companies. The data from the case studies showed considerable agreement with recommended guidelines, and a common five-stage, 13-step process for managing safety in outsourced relationships was developed.

Outsourcing

Outsourcing is one of the most significant and enduring organisational change initiatives of the modern era (Belcourt, 2006; Hätönen and Eriksson, 2009), occurring not only in private companies but also in public sector organisations. It's found in many different industrial sectors, including both manufacturing and service industries, across the globe. However, outsourcing has been described as an umbrella term (Sanders et al., 2007) and consequently risks a loss of transparency of meaning (Hirsch and Levin, 1999). Harland et al. (2005) identified a wide variety of definitions of outsourcing available in the literature at that time, which differ according to (i) the level of analysis and (ii) the wide variety of working relationships between firms, which have different consequences. Nevertheless, Davis-Blake and Broschak (2009, p. 322) defined outsourcing as “the act of obtaining goods or services from individuals or organizations outside of a firm's boundaries when these goods or services could be created internally by a firm's own employees and managers”. This definition highlights two important characteristics. First, a firm makes a choice to access goods or services from beyond the firm boundary, when it has the capability to create them internally; where the firm doesn't possess the capability, it can purchase these goods or services, but this is not outsourcing. Second, outsourcing demands some form of inter-firm relationship between a lead firm, which purchases the goods or services, and another firm, which supplies these goods or services.

Arrangements for the outsourcing of goods or services take three forms (Davis-Blake and Broschak, 2009). The first arrangement is to situate the whole process or function beyond the boundary of the lead firm. By externalising these peripheral services, the lead firm can focus on core competencies or leverage limited resources and reduce risk. A second arrangement involves locating parts of the process outside of the firm. These may be the more mundane or routine tasks, or conversely tasks that require specialist expertise. A third type of arrangement involves the procurement of contingent workers – that is, individuals or groups of individuals with identifiable skills. Contingent workers may be procured through employment agencies or search firms. However, they may also be self-employed individuals, who are ‘freelance’ or independent contractors, ‘direct hires’, and seasonal workers. ‘Direct hires’ are individuals hired directly by the lead firm, who have at least an implicit expectation that the employment relationship will be ongoing, even if the actual working arrangements are irregular, for example zero-hour contracts. These arrangements indicate clearly that outsourcing may occur either between two firms or organisations, where processes are outsourced, or directly between a firm and an individual, where staffing is outsourced (Davis-Blake and Broschak, 2009). We adopt this distinction between outsourcing of staff and outsourcing of processes to differentiate between a firm's engagement with an individual and its engagement with another firm.

Although there has been little research on the impact on organisations of the outsourcing of processes (Davis-Blake and Broschak, 2009), outsourcing staffing has been shown to adversely affect interpersonal relationships (including attitudes, work-group dynamics and supervisor–subordinate relationships), and these are known to negatively affect organisational safety performance (Clarke, 2003). Outsourcing inevitably requires a reallocation of tasks. Employees in the lead firm may retain more complex tasks, and more mundane tasks may be outsourced. The reverse is also possible.

Specialist tasks may be outsourced, and lead-firm employees maintain the basic tasks. Outsourcing may also require lead-firm employees to coordinate the activities, and monitor the performance, of non-lead-firm workers, thus adding to their workload. These additional responsibilities demand new skills. Such changes can lead to tensions between lead-firm employees and outsourced workers (Clarke, 2003). In addition, supervisor–subordinate relationships are also negatively affected by outsourcing. This has deleterious consequences for work-group dynamics. Moreover, outsourcing affects not only the composition of work groups but also work processes. Such changes can adversely affect the management of safety.

Outsourcing and safety risks

Under the Health and Safety at Work etc Act (1974), organisations in the UK are legally obliged to control safety risks and reduce hazards, and thereby improve safety performance. Outsourcing, however, introduces risks to the organisation. While there has been limited research on the impact of outsourcing of processes on a firm's safety performance, the outsourcing of staffing (that is, firm-to-individual outsourcing) is known to adversely affect interpersonal relationships. In particular, attitudes, work-group dynamics and supervisor–subordinate relationships are all negatively affected by outsourcing (for a review, see Clarke (2003)), and each of these is a vital contributor to both individual and organisational safety performance.

Quinlan and colleagues have conducted a number of empirical studies investigating the impact of outsourcing of staff on the occupational safety and health performance of the individuals involved (Mayhew and Quinlan, 1997, 1999, 2006; Mayhew et al., 1997; Quinlan et al., 2013, 2015). Through these studies and several comprehensive literature reviews (Quinlan et al., 2001; Quinlan and Bohle, 2008), they have developed the Pressures, Disorganisation and Regulatory Failures (PDR) model, which groups factors explaining the poorer health and safety performance of individual contract workers into three separate categories (see Table 1).

Economic and reward pressures identify risks that contribute to income insecurity, which encourages unsafe working practices. Insecure jobs encourage workers to accept hazardous tasks or work when injured. Irregular payments or payments contingent on performance promote corner-cutting and risk-taking. Long or irregular hours may be associated with work intensification and fast-paced work. Economic pressures may also encourage multiple jobholding, as alone none may be sufficient to provide a living wage. This increases the risk of fatigue.

Disorganisation reflects an organisation's lack of commitment to contractors. Individual recruits are often underqualified, undertrained and inexperienced. They experience poor induction and minimal training and supervision. Safety policies and procedures may be absent or ineffectively implemented, and a transient workforce ensures that these are not embedded or sustained.

Regulatory failure is more likely to be experienced by contractors who either have little or no knowledge of their legal entitlements or are compromised by their position in the labour market. Enforcement processes are hampered, for example, by identifying those with legal responsibility on sites with multiple employers. Gaps in employment protection may also appear as the relationship develops.

While these safety risk factors have been identified from work with individual contractors, it's likely that they may also apply to outsourcing relationships between firms, although this hasn't been documented. Anecdotally, however, we know that economic and reward pressures encourage firms to underbid on contracts or to cut corners to save costs. Stringent contractual arrangements with tight deadlines may demand long hours and high-tempo work. Communication between firms in an outsourcing relationship may not be clear and unambiguous. Similarly, clarity over the procedures and work practices to be

adopted on-site is often lacking. This may be exacerbated by inexperience or lack of training. These risk factors contribute to disorganisation. When accidents or fatalities occur in outsourced activities, responsibility is often disputed, suggesting that regulatory failures may also occur in outsourced relationships between firms.

Table 1. Specification of the elements of the PDR model of safety risk factors (developed from Underhill and Quinlan, 2011; Mayhew and Quinlan, 1999)

Economic and reward pressures	Disorganisation	Regulatory failure
A. Insecure jobs - Working when injured - Accepting hazardous tasks - Offloading high-risk activities B. Contingent, irregular payment - Income insecurity - Task work/payment by results - Competition/underbidding of tenders - Cutting corners C. Long or irregular work hours - Long hours - Pace - Work intensification - Lack of resources D. Multiple job-holding	A. Short tenure, inexperience - Underqualified, under-trained, inexperienced workers B. Poor induction, training and supervision - More complicated lines of management control C. Ineffective procedures and communication - Intergroup/inter-worker communication - Ambiguity in rules, work practices and procedures D. Ineffective OHSMS/inability to organise - Splintering of OHS management system - Inability of outsourced workers to organise/protect themselves	A. Poor knowledge of legal rights, obligations B. Limited access to OHS, workers' compensation rights C. Fractured or disputed legal obligations - Multi-party sites D. Non-compliance and regulatory oversight - Weak monitoring and reporting systems

PDCA cycle

In its publication *Managing for Health and Safety* (HSE, 2013), the UK's Health and Safety Executive advocates the use of the plan–do–check–act (PDCA) cycle. This resonates with the four stages of Kolb's experiential learning cycle (Kolb, 1984), namely, active experimentation (plan), concrete experience (do), reflective observation (check) and abstract conceptualisation (act). All four stages are required for successful learning, and each stage is characterised by different practices. The PDCA cycle balances systemic and behavioural approaches to safety management and incorporates them into general management. Each of the four stages is underpinned by a set of practices (see Table 2). When combined, they provide an effective safety management system. In brief, effective planning identifies clear roles and responsibilities; develops appropriate policies around, for example, training and

investigation; and establishes suitable risk control systems and workplace precautions. The 'do' stage incorporates the assessment of risk, establishes appropriate controls, encourages cooperation and communication, and ensures competence through selection, training and coaching. In the 'check' stage, performance is monitored against the plan, and accidents and incidents are investigated. Finally, the 'act' stage encourages a review of performance to highlight successes or failures and support organisational learning to improve current practices.

Table 2. Specification of the safety management practices associated with the different stages of the PDCA approach (HSE, 2013)

PLAN	DO	CHECK	ACT
1. Develop policy • Content • Writing • Consulting on it	1. Profiling an organisation's H&S risk • Assessing risk • Health surveillance	1. Measure performance • Monitoring (routine inspections, periodic testing) • Auditing	1. Reviewing performance • Revise plans and policies
2. Planning to implement • Ensure legal compliance • Procedures for emergency • Developing risk control systems • Designing workplace precautions (rules)	2. Organising for H&S a. Controls (supervision, rewards and sanctions, standards, instruction, induction) b. Cooperation (consultation, coordination, emergency services) c. Communication (behaviours, written materials, face-to-face discussion) d. Competence (recruitment, selection, training, coaching)	2. Investigating accidents, incidents and near misses • Investigation • Reporting	2. Learning lessons
	3. Implementing your plan • Protective and preventive measures (PPE, housekeeping) • Provide equipment • Maintain equipment		

Although this approach is targeted at a single organisation, the HSE (2013) suggests that it can also be applied to tasks and activities that are outsourced, giving the specific example of the management of contractors. The HSE advocates a similar approach to the management of contractors by SMEs in the chemical industry (HSE, 2011b). Application of the four-stage PDCA cycle and its attendant safety management practices could therefore contribute to improvements in safety performance in any particular outsourced activity. However, this hasn't been investigated as far as we're aware, even though a failing in one or more of these four stages is evident in many accident reports involving outsourced work. For example, in the case of the Buncefield explosion noted above, there were obvious omissions in the 'do' stage (HSE, 2011a): risks hadn't been identified; clear processes, which were to be executed by identified and qualified personnel, hadn't been developed; and checking by those in authority was poor. In his report on the Ladbroke Grove rail accident, Lord Cullen noted that contractors were neither rigorously trained in the tasks required of them nor monitored effectively in relation to their performance (HSE, 2001). This suggests that the 'do' and 'check' stages of the PDCA cycle weren't executed satisfactorily by Railtrack. Moreover, in the inquiry into the Southall rail accident, Professor Uff noted "a serious lack of contractual clarity between Railtrack and Amey Rail as to their respective maintenance responsibility" (HSE, 2000, p. 78), suggesting a failure in the 'plan' stage of the PDCA cycle. Similar failings in the 'plan' and 'act' stages can be found in the crash of the stunt plane at the Shoreham air show in 2015 (AAIB, 2017). It's possible therefore that different outsourcing relationships may emphasise (or neglect) some practices relative to others, privileging particular stages of the PDCA cycle but not attending to all four as anticipated.

LITERATURE REVIEW

The literature review seeks to answer the following questions:

- (i) What safety risk factors are there in outsourced activities?
- (ii) How do these safety risk factors align with the three elements of the PDR model?
- (iii) What safety management practices are deployed in an outsourced activity?
- (iv) How do these practices align with the four stages of the PDCA cycle?
- (v) What (if any) are the differences in practices between different types of outsourced relationships?
- (vi) What (if any) are the differences in safety risk factors between different types of outsourced relationships?

This is achieved through a systematic literature review, which reports empirical evidence of safety management practices found in outsourcing relationships operating at both firm-to-firm and firm-to-individual levels of analysis. We employ a novel three-stage process, as follows:

(1) Developing a framework for reviewing safety in outsourcing

Outsourcing takes many forms and occurs at different levels – that is, between a firm and another firm and between a firm and an individual – which can't be analysed in the same way. To legitimately compare empirical data across these levels, it's necessary to develop a unifying framework in which the constructs at both levels are conceptually equivalent (Whetten et al., 2009). Drawing on models from strategic human resource management (individuals) and supply chain management (firms), we developed a synthesised framework that permitted a legitimate comparison by juxtaposing the strategic importance to the client firm of the outsourced task with the complexity of the task and therefore the skill requirements of the contractor. This new 2x2 framework allowed not only the comparison of data across levels but also the differentiation of outsourcing relationships. Different safety management practices found in the four different outsourcing relationships could be more easily identified."

(2) Systematic review of safety and outsourcing

To capture more comprehensively the available empirical evidence, we conducted a systematic literature review (Tranfield et al., 2003). This focused on identifying the different safety management practices in different forms of outsourcing.

(3) Framework synthesis

Adopting a framework synthesis methodology for our systematic review (Barnett-Page and Thomas, 2009; Dixon-Woods, 2011) allowed us to exploit the conceptual framework developed in Stage 1. This enabled the empirical studies to be categorised into different quadrants and allowed the specific safety risk factors and safety management practices to be more effectively identified with the particular characteristics of the outsourced tasks described by the framework.

The literature review found that there is little empirical evidence of safety risk factors associated with the outsourcing of complex tasks; much more is known about the risk factors inherent in outsourced routine tasks. Safety risk factors arising from economic and reward pressures (P) – for example, long work hours and job insecurity – are more common in firm-to-individual outsourcing relationships than in firm-to-firm relationships. Conversely, safety risk factors arising from disorganisation (D) – for example, poor induction and training and ineffective procedures and communication – are more common in firm-to-firm than in firm-to-individual relationships. These two categories of safety risk factors are more frequently identified in both sets of relationships than the third category in the PDR model: regulatory failure (R).

The literature review also revealed that most empirical studies have examined safety management of the outsourcing of routine activities only. The review suggested that there is a heavy emphasis on practices associated with the 'do' stage of the PDCA approach to managing safety advocated by the HSE (2013) and that the 'act' stage, during which performance is reviewed, is neglected entirely.

Stage 1: Developing a framework for reviewing safety in outsourcing

Outsourcing staffing: the relationship between a firm and individuals

It's increasingly common for organisations to adopt a range of employment modes to service their requirements. Employees on full-time contracts are complemented by those on a range of other employment contract arrangements, such as fixed-term contracts and zero-hour contracts, or by part-time workers. Therefore, there's an increasing variety and use of contingent workers in organisations. As a consequence, it's unlikely that a single combination of HRM practices will accommodate the needs of these very different employee groups, and so differences in HRM practices are likely to be found in organisations.

Firms draw on the diverse skills of their employees in order to remain productive and efficient, and thereby sustain their competitive advantage. However, not all skills are equally valuable. Some are more valuable than others, being more precisely aligned to the requirements of the firm. Moreover, not all skills are required all of the time. Lepak and Snell (1999) identified two dimensions of human capital that may be used to determine employment sourcing decisions and HRM practices.

The first dimension is the value-creating potential of the skills, which refers to their potential to improve organisational efficiency and effectiveness, create or exploit opportunities, and mitigate threats. Adopting this asset perspective on employee skills allows them to be classified as either core or peripheral (Barney, 1991). Employees with core skills are likely to be more highly valued by the firm than those with skills that are peripheral to a firm's strategic requirements. Furthermore, it's likely that they will be managed differently.

The second dimension is the uniqueness of the human capital. This refers to the extent to which the skills are valuable, rare, inimitable and non-substitutable (Barney, 1991). Unique, firm-specific skills may be highly prized, while generic and transferrable skills are less highly valued. Again, Lepak and Snell (1999) suggested that employees possessing skills that differ in their uniqueness are likely to be managed differently.

Combining these two dimensions of human capital (strategic value and uniqueness of skills), Lepak and Snell (2002) derived a 2x2 model that begins to differentiate between human capital characteristics and employment modes. As human capital becomes more closely aligned with a particular firm, requiring tacit skills and knowledge, these skills need to be developed internally within the organisation. In contrast, where generic skills and capabilities are required, these may be sourced externally. Therefore, the nature of the requirement for human capital characteristics will directly affect the employment mode.

Outsourcing processes: the relationship between firms

Sanders et al. (2007) developed a typology of outsourcing arrangements between firms based on interviews with 19 executives, who came from both service and manufacturing industries and who each had more than 15 years' experience of outsourcing. The interviewees indicated two key dimensions that differentiate outsourcing arrangements. The first defines the scope of the arrangement, or more particularly the degree of responsibility assigned to the supplier (or, conversely, the loss of control by the lead firm). Four broad categories offering this increasing scope were identified:

- out-tasking
- co-managed services

- managed services
- full outsourcing.

Out-tasking refers to the assignment of responsibility for a specific task to another firm. In co-managed services, the scope of the task is increased but remains under the direct control of the lead firm. While there may be collaborative working, this is typically on strategically less important tasks. The scope increases further in managed services, which often cover a whole process, and the supplier is responsible for all aspects of the task. Finally, full outsourcing occurs when the lead firm assigns full responsibility to the supplier, often including the strategic direction of the function or process.

The second differentiating dimension is criticality. This may be, but is not necessarily, related to scope (Sanders et al., 2007). A single task may be highly critical and a whole process of limited criticality. It's important to note that the criticality of the task does affect the relationship between the lead firm and the supplier. Tasks of low criticality are often managed through contracts and performance monitoring. In these cases, the relationship is transactional. As criticality increases, the relationship between the lead firm and the supplier becomes more relational, and this must be managed appropriately.

Combining these two dimensions (the scope and criticality) provides a framework for categorising and differentiating outsourcing arrangements between firms. Each of the four quadrants represents a different outsourcing relationship.

A refined framework for outsourcing

Integrating these two perspectives from strategic human resource management and supply chain management allows us to create a framework for categorising and differentiating outsourcing arrangements that can be used to describe activities at both a macro level (a relationship between two firms) and a meso level (a relationship between a lead firm and individuals) (House et al., 1995). Both perspectives are heterogeneous, embracing a range of possible types of relationships between the actors. At the extremes, simple routine tasks requiring only generic skills can be contrasted with complex individual tasks that demand highly specialised skills. By combining these two perspectives into a single framework, it's possible to differentiate these relationships along two key dimensions (Figure 1):

- i. the strategic focus or criticality of the task for the organisation (core or peripheral)
- ii. the nature of the task and the skills required to perform the task (routine, generic or complex, or specialist).

This provides four quadrants, each with different characteristics that may be used to differentiate outsourcing arrangements.

Q1: Core and routine. Tasks are designed or stipulated by the client firm. While the performance of the task makes an important contribution to the client firm, there are others that could perform the task. The managerial focus in this quadrant is on delivery and performance. Relationships between actors may be strong and enduring, but communication is often infrequent.

Q2: Core and complex. Tasks are co-created, and there's a high frequency of interaction between actors. The relationship is often enduring and based on skills and competency, and there's a high level of trust and commitment between the actors based on empowerment and discretionary activity. This is typically found where individuals and firms can design their own roles. The lead firm needs to adopt high levels of relationship management.

Q3: Peripheral and routine. Tasks are often standardised and of limited scope, requiring only generic skills to deliver standardised products and services. The relationship between actors is transactional and often short term. The managerial focus in this quadrant is on securing compliance through the enforcement of company rules, regulations or standard operating procedures, and through adherence to the contract, with the lead firm monitoring outsourced activities.

Q4: Peripheral and complex. Tasks are larger in scope and often collaborative. The actors work together, often in partnership, to produce a customised outcome in an ongoing relationship in which information is exchanged. There are moderate levels of communication between the actors. The managerial focus in this quadrant is on knowledge-sharing.

While it's anticipated that all four stages of the PDCA cycle will be present in a relationship found in any of the quadrants, it's possible that each quadrant might emphasise or neglect particular stages. To illustrate, in Q1 infrequent communication may hamper the 'do' stage, while relationships in Q2 run the risk of failing to plan, assuming that each knows what the other is doing. A lack of training and the assumption of a standardised process may discourage adherence to the 'do' and 'check' stages of the cycle in Q3. Finally, outsourcing in Q4 may attend to all four stages.

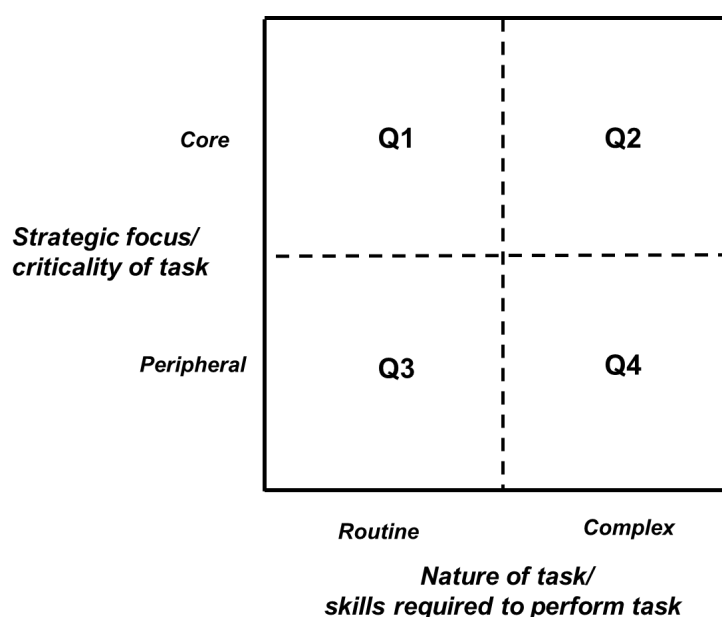


Figure 1. Conceptual framework for differentiating outsourcing arrangements

Stage 2: Systematic review of safety and outsourcing

Following the method prescribed by Tranfield et al. (2003) for conducting a systematic literature review, two review questions were specified:

What are the reported safety risk factors that arise from different outsourcing arrangements?

What are the reported safety practices deployed in different outsourcing arrangements?

The material collated to answer these questions could then be analysed to address each of the six questions identified above.

Searching for relevant articles began with a review of the content of three literature reviews (Quinlan et al., 2001; Quinlan and Bohle, 2008; Milch and Laumann, 2016) (see Table 3). Duplicate articles were

removed. This initial search was accompanied by a selective 'hand search' to identify further relevant papers (Table 3).

As a complement to these ad hoc approaches, conventional database searches were subsequently conducted (Table 3). Important constructs for these two review questions were identified. Lists of keywords associated with these constructs were developed and joined in search strings with the appropriate Boolean operators (see Table 3). These search strings were then used to search two electronic databases (EBSCO and Scopus) known to contain relevant academic peer-reviewed and scholarly articles on both outsourcing and safety. Table 3 indicates the number of items identified from either database for each search string. Screening titles and abstracts for relevance reduced the number significantly.

Further screening of the full text from both ad hoc and database searches revealed a smaller number of relevant articles (Table 3). To be included in this review, papers had to report an empirical study focused on the safety performance and management of safety in a relationship between either a client and a contractor or a principal contractor and a subcontractor, and had to have been published before December 2017. Papers that discussed general safety aspects of contracting relationships (eg Nunes, 2012) were excluded. The remaining articles from all sources were then subject to quality appraisal. A large number of articles (including, for example, Bayer, 2013; Bridger, 2015) were excluded at this point, mainly because of the absence of a clear statement of methods of data capture. Many of these excluded publications captured the reflections of experienced practitioners.

Table 3. Numbers of items reviewed from different sources for a systematic review of the literature on safety risks and practices in outsourcing arrangements

Source (in chronological sequence)	Number of identified responses	Number of relevant results (based on title and abstract)	Number after removal of duplicates	Number of relevant papers after full text screen	Number remaining after quality assessment
Quinlan et al. (2001)	22	22	22	13	12
Quinlan and Bohle (2008)	24	24	10	6	5
Milch and Laumann (2016)	19	19	13	4	4
Hand search	7	7	7	4	3
Firm to individual: (safety) AND (temporary work* OR agency work*)	EBSCO database search 509	21	21	13	11
	Scopus database search 163				
Firm to firm: (safety) AND (outsourc* OR contract* OR contract work*)	EBSCO database search 533	64	57	22	8
	Scopus database search 1,703	26	23	9	1
Totals		183	153	71	44

Information was then extracted from all of those selected papers that had been obtained through either the review of literature reviews or the database search, were deemed relevant, and had passed the quality appraisal threshold. This information included citation details, location of study, sector, details of the type of outsourced relationship and the safety practices identified in the findings and the discussion of the articles.

A wide variety of methods are available for the synthesis of qualitative research (for a review, see Barnett-Page and Thomas (2009)). One of these, framework synthesis (Dixon-Woods, 2011), provides an approach to organising and analysing large volumes of textual data that utilises an a priori 'framework' to extract and synthesise the findings. The rationale for the framework for this study has been outlined above, providing a 2x2 matrix based on two dimensions: the strategic importance of the task to the client firm, and the nature (scope and skill requirement) of the outsourced task (Figure 1).

The nature of the outsourcing arrangement was often inferred from the vocabulary used in the text to allow the relationship to be positioned on the 2x2 framework. In many cases, it was deemed that the outsourced activity was strategically core to the client firm's business. For example, maintenance and repair of plant are integral to the petrochemical industry (Hery et al., 1996; Kochan et al., 1994), and specialist trades such as electricians and bricklayers are integral to construction. In other cases, notably in Nenonen and colleagues' studies of manufacturing (Nenonen and Vasara, 2013; Nenonen, 2011; Nenonen et al., 2015), the outsourced activities were deemed peripheral to the client firm's business. With few exceptions, the outsourced tasks were deemed to be routine and generic, rather than complex and specialist, because the reported tasks were not so specialised that other organisations or individuals couldn't also undertake them. For example, there are often many companies that can provide building skills for construction, or vehicles and drivers in logistics. In a few cases, the unique context suggested that the tasks were complex and specialist (Garner, 2006).

Each of the studies identified a wide variety of safety risk factors. These were classified using the PDR model's three main elements: pressures, disorganisation and regulatory failures (Underhill and Quinlan, 2011). Within each of the three main elements of the PDR model, there are four subcategories of risk factors (Table 1).

Each of the studies identified and reported a number of safety management practices. The plan–do–check–act (PDCA) approach (HSE, 2013) has been used to categorise safety management practices. Each of the elements of the PDCA approach has a number of components, which each have further sub-dimensions (Table 2). These allow for a comprehensive identification and categorisation of safety management practices associated with outsourcing.

Descriptive summary of literature review findings

A total of 15 studies reported outsourcing relationships principally between a firm and an individual, some of whom were employed through an agency (eg Hopkins, 2017; Håkansson and Isidorsson, 2016) (Tables 4 and 6). A further 29 studies reported outsourcing relationships principally between firms (Tables 5 and 7). Some of the 44 papers combined data from both levels. For example, Mayhew and Quinlan (2006) studied outsourcing relationships in the logistics sector in Australia, which included both single operators (ie individuals) and small and large companies (ie firms). Sole traders and SMEs were also surveyed together in their earlier study of clothing manufacturers (Mayhew and Quinlan, 1999). Studies of safety in the construction of Denver International Airport (Glazner et al., 1998; Lowery et al., 1998) similarly included both individual- and firm-level data. Papers that combined data from different levels were allocated either to the firm-to-individual category or to the firm-to-firm category according to the dominant level in the study.

Geographically, the studies were widely distributed. Studies of firm-to-individual outsourcing relationships came mainly from Australia (7) and Europe (4) (Tables 4 to 7). Studies of firm-to-firm outsourcing relationships (Tables 4 to 7) came from the US (12), Australia and New Zealand (3), Scandinavia (8), and other European countries, including the UK (7).

Sectors of study were similarly diverse. Approximately half of the studies of firm-to-individual outsourcing arrangements were investigated in multiple sectors (Tables 4 and 6). Commonly studied sectors included construction, healthcare, logistics and manufacturing. Outsourcing arrangements between firms were investigated in a wide range of sectors (Tables 5 and 7), although nine were found in petrochemicals or related activities, six in construction and four in manufacturing.

Stage 3: Framework synthesis

Interpreting the context of the empirical studies in the reviewed literature, it was possible to locate most studies in a particular quadrant of the conceptual framework that describes outsourcing arrangements at both firm-to-firm and firm-to-individual levels (Figure 1). Approximately half of the studies (n=14) of firm-to-firm outsourcing arrangements were positioned solely in the quadrant (Q1) indicating an outsourced activity that is strategically core to the client's business and routine in its operation (Table 4). Approximately one-fifth (n=6) of the studies of firm-to-firm outsourcing arrangements were positioned as peripheral and routine (Q3) (Table 4). Some studies could only be identified by a single dimension as routine or core or peripheral. Firm-to-individual arrangements similarly emphasised this core/routine quadrant (Q1) (Table 3). A small number (n=3) of studies of firm-to-individual outsourcing arrangements could not be successfully placed. Data in these studies were collected typically through surveys across sectors.

As a consequence of the dominance of the core/routine quadrant (Q1), we will report safety risk factors and safety management practices for this quadrant first, before describing any deviations from this for the other three quadrants where data are available.

Safety risk factors and safety management practices for delivering safety can differ in contracts between firms from those in contracts between firms and individuals.

Firm-to-individual safety risk factors (Table 4)

Most of the safety risks (regardless of quadrant) relate to either economic and reward pressures or disorganisation rather than regulatory failure. Individuals contracted by a client firm to engage in routine tasks that are core to the client's business experience insecure jobs and work long and irregular hours, which are unsustainable. Belle et al. (2013) reported on understaffing in the seasonal tourist trade and the expectation that individuals will work the whole season without time off. Similarly, individuals are often expected to work at pace. These pressures increase stress and the possibility of injuries and accidents. Disorganisation in this quadrant is characterised by three safety risks: poor training and supervision, ineffective communication, and inadequate safety management systems. Training is often considered to be the responsibility of the individual rather than the client firm, and therefore is neglected (Hopkins, 2017). Consequently, competence levels may diminish over time. Similarly, induction to the site is often minimal, and contractors work unsupervised or with less supervision than permanent employees (Quinlan et al., 2015). Contractors often lack support from full-time workers, meaning that access to advice and information is reduced. This can result in a lack of clarity over roles and responsibilities. There may also be less assessment of risk. This is particularly important, because

contractors often take on the more hazardous tasks in an organisation, with for example increased exposure to hazardous substances (Mehta and Theodore, 2006). They may also operate alone or in noisy or confined spaces. In addition, they could also experience both physical and verbal abuse from permanent employees of the firm (Mayhew and Quinlan, 1999, 2006).

Those studies reporting safety risk factors for individuals in the routine/peripheral quadrant emphasised economic and reward pressures rather than job disorganisation. In particular, they drew attention to job insecurity, the pressure to accept short-term contracts both to gain and sustain employment (Hall, 2016), and the need to undertake hazardous tasks and work long hours (Williamson et al., 2009). These individuals also experienced pressures to reduce costs and to cut corners. Conversely, those studies that could not be categorised emphasised disorganisation rather than economic and reward pressures.

We found no papers that reported the safety risks faced by individual workers contracted by the firm to conduct complex tasks.

Firm-to-firm safety risk factors (Table 5)

Failures of regulation were rarely reported except where activities that were core to the business were outsourced. In outsourcing relationships where firms were offering a routine service to another firm, safety risk factors fell into both the economic reward pressures and the disorganisation categories.

Safety risk factors occurring in the routine/core quadrant arise from the nature of the contracted task and differ from the safety risk factors of permanent employees' tasks (Blank et al., 1995). Tasks are often higher risk and often require execution at pace, increasing work pressure and adding stress (Baugher and Roberts, 1999). Unfamiliarity with the site or the changing nature of the site (Spangenberg et al., 2002) suggests that accidents are more likely for contractors. This is compounded by a lack of induction or limited training (Gregson et al., 2015; Lamare et al., 2015). Communication between the client firm and contractors is often poor (Manu et al., 2013), leaving contractors isolated (Lingard et al., 2010), and this is particularly so when there is a difference in organisational culture (Drupsteen et al., 2015).

The safety risk factors identified in the routine/core quadrant are magnified in the routine/peripheral quadrant. Information-sharing between client and contractor is often poor (Nenonen, 2011; Schubert and Dijkstra, 2009), which means that work instructions may not be clear (Nenonen et al., 2015). This may be accounted for by differences in organisational safety culture (Nenonen and Vasara, 2013). These differences may result in a lack of clarity over responsibilities, for example for providing PPE or training (Nenonen and Vasara, 2013; Schubert and Dijkstra, 2009). Under-reporting of incidents is a characteristic of contracts in this quadrant (Nenonen, 2011), often because they are short term and require frequent renewal (Kongsvik et al., 2012).

Contractual arrangements for routine tasks, especially those that are financially incentivised, encourage under-reporting of incidents (Collinson, 1999). This is possibly because contract workers often perform different tasks to permanent employees (Rebitzer, 1995) and don't receive organisational safety information (Salminen et al., 1993).

A different communication challenge that creates safety risk factors occurs in complex/core contractual arrangements (Garner, 2006). Here, organisations are often so closely aligned that there is no effective safety monitoring, and appropriate and effective communications are simply assumed to occur. A lack of clarity over legal obligations appears to be characteristic of outsourcing arrangements for activities that are core to the organisation's business.

Table 4. Safety risks identified in papers considering firm-to-individual contracting (see Table 1 for category labels)

Author	Location of study	Sector	Economic and reward pressures				Disorganisation				Regulatory failure			
			A	B	C	D	A	B	C	D	A	B	C	D
<i>Routine/core</i>														
Alamgir et al.	Canada	Healthcare						X						
Belle et al.	Italy	Catering/tourism	X		X			X			X			
Mayhew and Quinlan (1997)	Australia/UK	Construction		X	X				X	X				
Mayhew and Quinlan (1999)	Australia	Clothing manufacture	X		X		X							
Mayhew and Quinlan (2006)	Australia	Logistics	X		X					X				
Quinlan et al. (2015)	Australia	Healthcare			X			X	X	X				
<i>Routine/peripheral</i>														
Hall	Canada	Multiple (incl. healthcare, manufacturing, logistics, construction and food)	X				X	X						
Mayhew et al.	Australia	Childcare, hospitality, logistics and construction		X	X									
Williamson et al.	Australia	Logistics		X	X									
<i>Routine</i>														
Hopkins	UK	Food manufacturing			X		X							
Mehta and Theodore	US	Construction	X		X			X						
Underhill and Quinlan	Australia	Multiple	X					X	X					X
<i>Uncertain</i>														
Fabiano et al.	Italy	Multiple (especially manufacturing)					X	X						
Håkansson and Isidorsson	Sweden	Multiple (incl. manufacturing and logistics)	X					X						
Sakurai et al.	Japan	Multiple	X											

Table 5. Safety risks identified in papers considering firm-to-firm contracting (see Table 1 for details of labelling)

Author	Location of study	Sector	Economic and reward pressures				Disorganisation				Regulatory failure			
			A	B	C	D	A	B	C	D	A	B	C	D
<i>Routine/core</i>														
Baughner and Timmons Roberts	US	Petrochemicals	X		X		X							
Blank et al.	Sweden	Mining												
Drupsteen et al.	The Netherlands	Logistics							X	X				
Glazner et al. (1998)	US	Construction						X	X					
Glazner et al. (1999)	US	Construction							X					
Gregson et al.	Australia	Airline maintenance	X		X		X	X						
Hasle	Denmark	Public transport			X		X			X				
Hery et al.	France	Petrochemicals												
Lamare et al.	New Zealand	Coal mining					X	X		X				
Lingard et al.	Australia	Construction	X		X				X				X	
Lowery et al.	US	Construction					X	X	X					
Manu et al.	UK	Construction					X		X	X				
Spangenberg et al.	Denmark	Construction												
<i>Routine/peripheral</i>														
Kongsvik et al.	Norway	Offshore service vessels in support of petroleum companies			X									
Nenonen	Finland	Manufacturing						X	X	X				
Nenonen and Vasara	Finland	Manufacturing – with multiple employers on-site	?		?		X	?	X					
Nenonen et al.	Finland	Manufacturing					X	X	X					
O'Brien	US	Manufacturing												
Schubert and Dijkstra	The Netherlands	Process industries (agro, gas and chemicals)			X		X		X					
<i>Routine</i>														
Collinson	UK	Oil		X	X									
Rebitzer	US	Petrochemicals					X	X						
Rousseau and Libuser	US	Petrochemicals/mining		X	X		X		X	X				
Salminen et al.	Finland	Multiple (including construction and manufacturing)					X		X					

Core														
Gochfeld and Mohr	US	Nuclear and chemical waste management												
Kochan et al.	US	Petrochemicals						X					X	
Quinlan et al. (2013)	US	Aircraft maintenance	X	X	X		X	X				X	X	
Peripheral														
Gomes et al.	Brazil	Helicopter transportation to oilfields			X				X					
Vassie and Fuller	UK	Oil exploration												
Complex/core														
Garner	US	Space							X					

Safety practices in firm-to-individual relationships (Table 6)

The safety management practices provided to support individuals who are contracted by firms to perform different routine tasks are not well documented. Those relating to complex tasks are not reported at all. The main focus of the safety management practices is in the 'do' section of the PDCA cycle, specifically around organising for health and safety. A principal consideration is assuring the competence of the individual recruited to complete the task (Alamgir et al., 2008; Hopkins, 2017). Other considerations include effective communication and the provision of PPE (Hopkins, 2017).

Safety practices in firm-to-firm relationships (Table 7)

Mapping the observed safety practices onto the PDCA approach advocated by the UK HSE (HSE, 2013) shows that safety practices in firm-to-firm contracting relationships focus on the 'do' and 'check' steps in the cycle and, within these two steps, on organising for health and safety and measuring performance, respectively. Activities associated with the 'plan' stage are not apparent in core activities, and with one exception there is no mention of activities associated with the 'act' stage (reviewing performance and learning lessons).

Where firms are contracted to complete core and routine activities, it's important that the senior management team of the client company signals the importance of safe working to the contractor (Lingard et al., 2010; Glazner et al., 1998, 1999) not only in terms of role-modelling safe working but also in monitoring safe performance (Spangenberg et al., 2002; Hasle, 2007). It's especially important to monitor minor injuries in order to reduce major ones (Lowery et al., 1998). Communication was essential for effective safety management, including giving feedback. Manu et al. (2013) suggested that the most effective method for ensuring this is the presence of non-working foremen on-site, who can role-model safe working behaviours. They provide the necessary control of outsourced activities. Lowery et al. (1998) also recommended that control could be better effected by focusing on inexperienced workers or those new to a site, or concentrating on time-constrained projects where there is often pressure to cut corners (Glazner et al., 1998, 1999).

Outsourcing arrangements that meet peripheral and routine requirements of the lead firm adopt many of the practices noted above. Training is a vital safety practice in this quadrant. Particular emphasis seems to be placed on frequent regular communication (Nenonen and Vasara, 2013; Nenonen et al., 2015; Schubert and Dijkstra, 2009) through team meetings and briefings to ensure information is adequately shared and safety performance is monitored, especially in view of the dynamic hazard environment in the workplace (Nenonen et al., 2015; Schubert and Dijkstra, 2009). Regular communication allows the opportunity to frequently raise awareness of the dynamic hazard environment. Use of appropriate warning signs and PPE is also recognised as good practice.

Ensuring contractors were competent was an important consideration in this quadrant. This was achieved through training, including effective induction. However, O'Brien (1999) and Schubert and Dijkstra (2009) both suggested that contractors should be selected based on their safety record and that enduring relationships should be developed with those contractors with good safety performance records.

Where routine tasks were being undertaken by contractors that could be either core or peripheral to the strategic goals of the business, communication was critical (Collinson, 1999). Often, this was to make up for the contractor's inexperience or unfamiliarity with the site.

Contractors engaged by firms to perform core activities should be competent. Particular attention should be paid to their selection, which should include consideration being given to safety records and

performance, perhaps with on-site visits to other clients (Kochan et al., 1994). Orientation to the site should be offered so that contractors are aware of hazards (Kochan et al., 1994). Subsequently, safety performance should be monitored regularly (Gochfeld and Mohr, 2007; Kochan et al., 1994) and data shared at meetings between companies.

Table 6. Safety management practices reported in papers considering firm-to-individual contracting (see Table 1 for details of labelling)

Author	Location	Sector	Plan		Do			Check		Act		Not determined
			1	2	1	2	3	1	2	1	2	
<i>Routine/core</i>												
Alamgir et al.	Canada	Healthcare				d						
Belle et al.	Italy	Catering/tourism										X
Mayhew and Quinlan (1997)	Australia/UK	Construction										X
Mayhew and Quinlan (1999)	Australia	Clothing manufacture										X
Mayhew and Quinlan (2006)	Australia	Logistics										X
Quinlan et al. (2015)	Australia	Healthcare										X
<i>Routine/peripheral</i>												
Hall	Canada	Multiple (incl. healthcare, manufacturing, logistics, construction and food)				X			X			
Mayhew et al. (1997)	Australia	Childcare, hospitality, logistics and construction										X
Williamson et al.	Australia	Logistics										X
<i>Routine</i>												
Hopkins	UK	Food manufacturing				c, d	X					
Mehta and Theodore	US	Construction										X
Underhill and Quinlan	Australia	Multiple										X
<i>Uncertain</i>												
Fabiano et al.	Italy	Multiple (especially manufacturing)										X
Håkansson and Isidorsson	Sweden	Multiple (incl. manufacturing and logistics)										X
Sakurai et al.	Japan	Multiple										X

Table 7. Safety management practices discussed in papers considering firm-to-firm contracting (see Table 1 for details of labelling)

Author	Location	Sector	Plan		Do			Check		Act		Not determined
			1	2	1	2	3	1	2	1	2	
<i>Routine/core</i>												
Baughner and Timmons Roberts	US	Petrochemicals				a, c						
Blank et al.	Sweden	Mining										X
Drupsteen et al.	The Netherlands	Logistics										X
Glazner et al. (1998)	US	Construction	X	X	X	c		X	X			
Glazner et al. (1999)	US	Construction	X		X	a, c		X	X			
Gregson et al.	Australia	Airline maintenance										X
Hasle	Denmark	Public transport	X			c		X				
Hery et al.	France	Petrochemicals	X									
Lamare et al.	New Zealand	Coal mining										X
Lingard et al.	Australia	Construction				c, d						
Lowery et al.	US	Construction				c		X				
Manu et al.	UK	Construction		X	X	a, b, d						
Spangenberg et al.	Denmark	Construction				a, c		X				
<i>Routine/peripheral</i>												
Kongsvik et al.	Norway	Offshore – support vessels				c						
Nenonen	Finland	Manufacturing		X	X	a	X	X				
Nenonen and Vasara	Finland	Manufacturing		X		b, d		X	X			
Nenonen et al.	Finland	Manufacturing		X	X	a, c, d	X		X			
O'Brien	US	Manufacturing				d		X				
Schubert and Dijkstra	The Netherlands	Process industries	X			a, b, c		X				
<i>Routine</i>												

Collinson	UK	Oil				c		X				
Rebitzer	US	Petrochemicals				c						
Rousseau and Libuser	US	Mining and petrochemicals			X	a, b, d	X	X				
Salminen et al.	Finland	Multiple										X
Core/complex												
Garner	US	Space						X				
Core												
Gochfeld and Mohr	US	Nuclear and chemical waste management				d		X	X			
Kochan et al.	US	Petrochemicals				a, c, d		X				
Quinlan et al. (2013)	US	Aircraft maintenance										X
Peripheral												
Gomes et al.	Brazil	Helicopters			X						X	
Vassie and Fuller	UK	Oil				a, c, d						

Discussion of literature review

Outsourcing is a common strategy used by organisations in the private and public sectors to focus on their core business. Belcourt (2006) suggested that it's driven by financial savings, strategic focus, access to advanced technology, improved service levels, access to specialised expertise and organisational politics. Subsequently, Sanders et al. (2007) simplified these into three primary reasons: financial, resource based and strategic. The focus of financial reasons is the reduction of costs through lower employment costs or reductions in costs of production. Often, however, this approach is reactive, occurring in response to short-term financial indicators. Resource-based objectives seek to compensate for a lack of assets, which may be both technical skills and physical infrastructure. Finally, strategic objectives aim to develop firm competences that will enable competitive differentiation. Most often, the decision to outsource is intended to allow the firm to concentrate on exploiting its core competencies to maximise competitive advantage.

Outsourcing may take a variety of forms, as relationships are established with other organisations or with individuals, who may be hired directly or indirectly through an agency (Davis-Blake and Broschak, 2009; Connelly and Gallagher, 2004). Furthermore, it's not constrained to a particular industry or sector. Outsourcing occurs in high-hazard industries such as petrochemicals and construction as well as in the service sector, for example telecommunications. The practices for managing such a diversity of contexts may vary considerably. This makes direct cross-sector comparisons or comparisons between different organisations or across levels of analysis (that is, outsourcing between firms or between firms and individuals) based on empirical studies difficult unless an alternative framing of the activities and tasks can be provided. The proposed framework (Figure 1) provides this, permitting the effective structuring and organising of empirical studies based on two characteristics of the outsourced task, namely its strategic significance to the client company and the relative complexity of the task. Arranging the available empirical evidence in this way reveals how these task-related dimensions of outsourcing differentially affect both the profile of safety risk factors and the nature of the safety management practices associated with different types of outsourced activities.

Clearly, outsourcing is driven by a variety of needs, and each introduces different risks to the client organisation. A primary risk of outsourcing for any organisation is therefore the initial decision to outsource an activity. Understanding the potential business risk precedes subsequent considerations of safety risk from the specific outsourced activity. Nevertheless, once the decision to outsource has been made, there are three categories of safety risk factors: economic and reward pressures, disorganisation, and regulatory failure (Underhill and Quinlan, 2011). Much of the available evidence of the effects of outsourcing on safety risks reports on routine tasks. There is very little available empirical evidence for the safety risks associated with complex tasks. Routine tasks are those that typically have a common and widely recognised process or procedure and for which there are alternative providers, while complex tasks are often specialist and bespoke to the particular organisation. It's perhaps more likely that routine tasks will be outsourced and that the weight of empirical evidence simply reflects this imbalance.

Many of the safety risk factors reported in the foregoing literature review arise from underqualified and inexperienced workers and from ineffective communication between the firm and the contractor around the nature of the hazards and the clarity of the work practices and procedures that are to be adopted. While particular elements of the economic and reward pressures and disorganisation are common to outsourcing of routine/core activities at both firm-to-firm and firm-to-individual levels, there appears to be a difference across levels in safety risks found in outsourced routine/peripheral tasks. Where such tasks are outsourced between firms, the risks are more commonly associated with disorganisation rather than economic and reward pressures, and in particular with ineffective procedures and communication, and short tenure and inexperience. In contrast, where the activities are outsourced between a firm and an individual, the risks are more likely to be a result of economic and reward

pressures – including long work hours and fast-paced work, the pressure to cut corners, and concerns over job security – and not disorganisation.

On balance, safety risks of outsourcing between firms appear to relate to disorganisation, while those associated with firm-to-individual outsourcing arrangements emphasise economic and reward pressures. This distinction may relate to the likely occurrence of these different relationship types at different points in the supply chain. Firm-to-individual outsourcing relationships are typically found at the end of the chain, where considerations of utilisation of resources, time pressures and cost are prominent. Safety risk factors associated with economic and reward pressures may be more evident here. Conversely, firm-to-firm outsourcing relationships may occur throughout the supply chain where client firms can transfer their economic risks to their contractors and subcontractors. Safety risk factors associated with the coordination of these tasks cannot be transferred, so risks associated with disorganisation remain at each link in the chain.

Of course, the safety risk factors reported in these studies are those that we identified. Others may be present but remain hidden or overlooked. Failure to provide adequate control for these identified economic and reward pressures or disorganisation risks can have a variety of immediate and longer-term consequences. Hazardous tasks that aren't properly managed can result in injury or ill health for those involved and other employees. Work intensification and long hours cause fatigue. This may result in poor concentration and subsequently possible damage either to physical assets, including equipment and products, or to relationships through unsatisfactory service delivery. Disorganisation risks include inexperience, lack of training and poor communication. Each of these may also result in damage to assets or injury to staff. This category of risks also bears heavy costs in terms of the time and resources required to rectify resulting problems. Both categories of safety risk factors can lead to reputational damage in the longer term, making it more difficult to find firms or individuals to work with. When poorly controlled, these risks may also lead to enforcement actions, including improvement and prohibition notices, or even to prosecutions, which if successful result in fines and even custodial sentences, along with adverse publicity.

Safety management practices for outsourced activities are well documented for routine tasks outsourced between firms, but there is a dearth of information regarding safety management practices where individuals are hired by a firm to perform routine tasks, the exceptions being Hall (2016), Hopkins (2017) and Alamgir et al. (2008). These studies focus almost exclusively on the 'do' section of the PDCA approach (HSE, 2013), paying particular attention to the competence of the recruits. While safety management practices in outsourcing arrangements between firms focus heavily on the 'do' section, they also embrace the 'plan' and 'check' sections. In the latter case, they pay particular attention to the monitoring and auditing of performance. Within the 'do' section, a wider range of activities – including control, cooperation and communication – are covered. In all of the studies of outsourcing arrangements, there was no mention of reviewing performance and learning lessons to improve subsequent performance. This failure to close the learning cycle implicit in the PDCA approach perhaps contributes to the observation that contractors have more fatalities and higher accident and injury rates than full-time permanent employees (Blank et al., 1995; Mayhew and Quinlan, 1999). Organisational learning is a vital part of the response to organisational crises to ensure that the event or incident does not recur (Denyer and Pilbeam, 2015).

Populating the proposed framework with existing studies assumes that outsourcing arrangements are static rather than dynamic and changing over time. It's unclear from the available evidence whether and how outsourcing arrangements change over time and how this change might affect the safety management practices. Such changes may occur in one of two ways. Within any one quadrant, there may be different stages of safety culture maturity (Parker et al., 2006) between the firm and the contractor, with the culture evolving over time as the relationship endures. Alternatively, outsourcing arrangements may change over time so that the relationship is classified initially in one quadrant, but shifts to another quadrant as the relationship matures. In the first scenario, safety management

practices mature, becoming more comprehensive and sophisticated, whereas in the second scenario, there is the risk of simple accumulation of practice, some of which may be redundant because the tasks have changed.

The task-based orientation of the framework fails to emphasise the relational nature of safety performance. Safety outcomes according to the Safety-II model (Hollnagel, 2014) are achieved by the real-time interaction of individuals. This relational element is implicit in the temporality noted above. It's unclear how the longevity of relationships between firms and between firms and individuals alters the awareness and application of safety management practices. Short-term relationships are acknowledged to create risk (Underhill and Quinlan, 2011), and many organisations seek to establish long-term relationships or partnership arrangements both to mitigate the safety risks associated with novelty and to establish greater clarity over roles and responsibilities and shared understanding of processes and procedures.

A dominant characteristic of the empirical studies on safety in outsourcing is the focus on dyadic relationships. With a few exceptions (Nenonen and Vasara, 2013; Hasle, 2007), they investigate the relationships between a contractor and a client firm and neglect more complex configurations, including relationships between client firms and contractors and subcontractors. Such configurations, however, are increasingly common in practice due to multi-employer worksites. This increases safety risks, as individuals and organisations become increasingly unaware of who is working where and performing which tasks, and how this dynamically affects the hazard profile of the work environment. Moreover, roles and responsibilities for safety become increasingly blurred in these webs of inter-firm relationships. This may lead to deviation from standard operating procedures as individual contractors adapt to local circumstances, improvising to ensure their own personal safety (Collinson, 1999).

Study limitations

This review has four obvious limitations. First, it integrates material from many different legal jurisdictions, making the assumption that expectations for safety management practices are universally the same. This may be incorrect. Similarly, no account is taken of the date of the study. Practices, and identifiable risks, may change over time as legislation and regulatory frameworks develop and become more stringent. For example, changes to the UK CDM Regulations in 2015 (HSE, 2015) specify the role of the principal contractor more explicitly. Similarly, the introduction of the BS 11000 standard on collaboration and partnership may affect the nature of the client–contractor relationship. Such changes will influence the nature of the engagement of a client with a contractor and so affect what is reported in subsequent empirical studies. This will inevitably shape the conclusions of the review. Therefore, risks identified in different situations (countries and years) may vary, with earlier studies perhaps failing to report risks that would be reported in more recent studies. While this may affect the detail of the study, introducing more risks in newer studies, it's unlikely to substantially change the dominant conclusions.

Second, the framework used in the review also introduces a further limitation, in addition to these contextual and chronological differences in the constituent studies. The framework encourages a task-based view of the interaction between a client and a contractor. While this is entirely consistent with the underpinning frameworks (Lepak and Snell, 1999; Sanders et al., 2007), it encourages a transactional and atomistic view of the relationship between client and contractor and neglects other forms of relationship, such as joint ventures, where the boundaries between participating organisations are less distinct.

Third, the studies in this review mainly report simple dyadic relationships between client and contractor and fail to account for more complex configurations of contracting relationships, such as those found on multi-party work sites. These complex collaborations increase safety risks as overall awareness of who is performing what task and where diminishes, and as the risk profile becomes more dynamic and more opaque with no one having complete oversight.

Finally, many of the studies reported here were conducted in high-risk environments, including construction and petrochemicals. Many people in developed countries work in service organisations, which are typically less hazardous and have different risk profiles.

Future research

This literature review suggests a number of avenues for future empirical research. The first is an exploration of the management practices associated with outsourcing in a broader range of environments. Much of the reviewed literature is focused on the construction or process industries. However, contractors are used in many other sectors, for instance IT and the media. An examination of the safety risks and frequently used practices for managing health and safety in these settings is warranted. Similarly, there is an opportunity for investigating the outsourcing of back-office functions, such as HR and payroll. It's likely that the safety risks in these circumstances will differ from those in higher-risk and higher-hazard environments, and therefore management practices will differ. An examination of similarities and differences will offer the opportunity to provide more bespoke guidelines for managing H&S in outsourced business relationships.

A second avenue for empirical investigation lies in the difference in outsourcing practices between the private and public sectors. This important contextual difference alters the nature of the contract and how it's operated, with implications for the management of safety. A third avenue addresses the temporal dimension to the framework. The relationship between the contractor and the client will develop over time. As this relationship evolves, it's unclear currently whether and how the salience of different safety issues changes. It's also unclear whether additional safety management practices are simply added incrementally to the initial set of practices instigated at the beginning of the relationship or whether these are reviewed periodically and adapted as the relationship develops and changes. The failure to engage with the 'act' element of the PDCA cycle suggests that this review doesn't occur, and so practices accumulate. Moreover, as the safety maturity of both parties increases over time, how does this influence the types of issues encountered, and the practices used to manage them? A further complication to this temporal dimension arises if, during the development of the relationship between client and contractor, the positioning or basis of the relationship shifts between quadrants. How such a change influences the experienced issues and the management practices is also unknown.

These limitations suggest opportunities for future research. In addition, the changing world of work may also create new and unforeseen safety risks. For example, client organisations are now seeking to bypass tier 1 contractors and deal directly with tier 2 contractors. This introduces risks associated both with capability and competence to manage and with the adequacy of the assurance processes. Safety risk profiles in public sector organisations may differ from those in private sector companies, which were the dominant form in this review. This warrants investigation. This review also featured hierarchical organisations, but organisations with flatter structures or teamworking are increasingly common. How these changes in organisational form affect the safety risk profile is not known. Finally, the impact of digitalisation, artificial intelligence and the internet of things on safety risks is unknown. As Industry 4.0 gathers momentum, this requires urgent examination.

EMPIRICAL CASE STUDIES

Methods

Research question

The proposal identified the following research question:

“What safety processes and practices are found at the lead firm–supplier interface following outsourcing?”

Two further questions arose from the conceptual differentiation of outsourcing relationships suggested in the proposal and refined in the process of conducting the literature review (noted above – Figure 1). These were:

“How do these processes and practices vary according to the strategic business focus of the outsourced task and its complexity (that is, by the position of the outsourced relationship on the 2x2 matrix)?”

“How are these processes and practices managed in order to sustain the OSH performance of client and contractor in each of the four types of outsourced relationship?”

Research design

A case study approach was adopted because we wished “to study contemporary phenomena in a real-life setting” (Gibbert and Ruigrok, 2010, p. 712). However, there are many forms of case study, creating “a definitional morass” (Gerring, 2004). Ridder (2017) identified and compared four different case study research designs (championed respectively by Eisenhardt, Yin, Stake and Burawoy) and their respective potential contributions to theory.

The phenomenon identified in the primary research question was the management of safety at the client–contractor interface in an outsourced relationship, and in particular the practices and processes by which this was achieved. Adopting an approach to case study research advocated by Eisenhardt (Eisenhardt, 1989; Eisenhardt and Graebner, 2007), we sought to capture rich descriptions of this phenomenon through interviews with respondents from both client and contractor organisations who were familiar with the management of OSH in and between their respective organisations.

Each client–contractor relationship constituted a specific case. Contracted relationships between a client organisation and each of its several contracted partners offered the opportunity to investigate within-client-company differences. It was anticipated that the practices and processes within a single client organisation would be relatively uniform and consistently applied to all contracted relationships, although, of course, there may be some variations that are particular to specific contracts. Collecting data from a number of client organisations, each with several activities outsourced to different providers, permitted cross-company comparisons. In seeking multiple cases, and through the identification of patterns of similarity and difference in the data from each case, we aimed to validate our findings by replication. Unusually, our research design allowed us to corroborate our case findings at two levels: (i) within a company, and (ii) between companies in different sectors. Of course, this replication was not seeking statistical generalisability to a larger population of all outsourcing relationships, but rather heuristic generalisation in the absence of existing theory on what processes and practices are adopted for safety management in outsourced relationships (Tsoukas, 2009). This would allow the identification of relevant concepts that may have widespread applicability and constitute the building blocks for further theory development (Ridder, 2017).

In an extension to this basic design, the specific cases investigated in each client organisation were positioned on our conceptual framework (see the literature review) after consultation with company sponsors and discussion with Industrial Advisory Group members. This framework, which juxtaposes the nature of the outsourced task with its significance to the client organisation, enabled an alternative way of combining the data from individual cases. A comparison of patterns of similarities and differences in the data between quadrants in our framework allowed the development of tentative explanations for our two subsidiary research questions. These were framed as ‘how’ questions, which, according to both Eisenhardt (Eisenhardt and Graebner, 2007) and Yin (2014), makes them suitable for investigation by case study research designs.

Research sites

Contact was made with a number of large organisations (including Aviva, Bovis Homes, BP, BT Group, Debenhams, Network Rail and Travis Perkins) prior to and during a project launch event held at Cranfield University in February 2017.

A division or department from each of three global companies from three different industry sectors (engineering, pharmaceuticals and logistics) finally agreed to participate. These companies have been designated as EngCo, PharmaCo and LogisticsCo in the remainder of the report. The decision to exclude public sector organisations had been made at the proposal stage. Outsourcing practices differ substantially between the private and public sectors in the UK. To allow greater comparability of data between research sites, it was decided to focus solely on the private sector. Within each company, there was a sponsor who facilitated access to the company and its contractors. These were members of the EH&S teams, who varied in their level of seniority and consequently the levels and degree of access they could create.

Table 8 indicates the number of outsourcing relationships that each of the three main global companies gave access to, as well as providing a brief description of the nature of the activity they outsourced together with the provider of that particular activity (identified by an anonymised name). Most of these supplier firms were national or international companies, offering mainly facilities management and construction services. PharmaCo always engaged with other companies (ConstructionManCo, FMCo and LabServiceCo). EngCo mostly engaged with other companies (FMCo, SpecialistCo). However, for one activity, it engaged with an employment agency (AgencyCo) to access a pool of skilled labour to service a particular task on behalf of another client organisation. This relationship was then between the company (EngCo) and the individual worker. Ordinarily, LogisticsCo outsourced the facilities management of its warehouses to a facilities management company (FMCo). Unusually, and at the request of a retailing client, LogisticsCo provided facilities management for warehouses operated by this UK retailer. It should be noted that these three global companies contracted three different FMCo.

Data collection

Semi-structured interviews were arranged with participants who had a variety of roles in each of these outsourced relationships. Roles in the client companies included EHS managers or advisers, procurement managers, and project managers. In the contracted company, participants had a range of roles, including training manager, EHS adviser, site engineer and function manager.

In EngCo and PharmaCo, it was possible to interview individuals from both client and contractor firms (Table 8), while in LogisticsCo, interviews were possible mainly with client firm staff (Table 8). Interviews were indicated to last 30 minutes, although the actual duration ranged from 16 to 55 minutes. All interviews at PharmaCo and LogisticsCo were conducted face to face on-site. Some of the EngCo interviews were conducted by telephone because of the mobility of a particular cadre of employees.

The questions in the interview covered the following topic areas:

- safety practices for managing the outsourced activity (including a discussion of where these do or don't work well)
- safety performance of the activity and the site
- the history and nature of the relationship between client and contractor, and any notable challenges, including how these affect safety
- ways in which contractors contribute to improving the safety performance of the client organisation
- ways in which changes are made to improve the practice of maintaining safety in the client organisation.

Participants' consent was obtained either in writing or verbally at the start of the interview. The purpose of the interview was also explained, and the participants were reminded of their right to withdraw at any time. Anonymity and confidentiality were assured.

Table 8. Details of contractor relationships with three different main firms (including the sources of interview data)

Company	Contractor	Contractor activity	Number of interviews	
			Company	Contractor
LogisticsCo	FMCo	FMCo provides facilities management for some of LogisticsCo's warehouses	-	1
		LogisticsCo provides facilities management to warehouses owned by RetailCo	4	-
EngCo	AgencyCo	AgencyCo employs individual contractors to fit smart meters on behalf of EngCo	5	2
	FMCo	FMCo provides facilities management services across EngCo's portfolio of UK sites	5	3
	SpecialistCo	SpecialistCo provides technical services to support the engineering activities at one of EngCo's established sites	6	5
PharmaCo	FMCo	FMCo provides facilities management to PharmaCo's UK R&D sites	9	2
	ConstructionManCo	ConstructionManCo manages the construction projects occurring on PharmaCo's UK R&D sites		3
	LabServiceCo	LabServiceCo services the laboratories at PharmaCo's UK R&D sites		1

Table 8 indicates the number of interviews conducted in each outsourced relationship and analysed in this report. In a few cases, there was only a single participant, but normally there were more. A total of 60 interviews were conducted. Each was digitally recorded and transcribed verbatim, giving a total of more than 33.5 hours of recorded data. A further 18 face-to-face interviews were conducted in EngCo with procurement and project management professionals. These were not focused on any particular

relationship and were general in nature. The data from these interviews have not been included in this report.

Data analysis

Each manuscript was read at least three times to gain familiarity with the data. Summary notes were written documenting key themes evident at each geographic location where interviews were conducted. The data from each interview transcript were coded initially in NVivo 11, but this was found to be unhelpful for managing and interrogating the data within each case. A simpler coding approach was developed subsequently using Excel, with a separate spreadsheet for each outsourcing relationship.

Table 9. Data coding structure for safety management practices in outsourcing relationships

First-order codes of activities	Second-order grouping of practices	Clusters of practices
Details of procurement processes Statements indicating relational nature of employment	Selection	Employing
	Recruitment	
Descriptions of induction processes	Induction	Deploying
Statements about developing RAMS	Risk assessment – methods statements	
Statements about permitting processes	Permits to work	
Indications of occurrence of safety discussions	Verbal communication	Engaging
Indications of dissemination of safety information	Written communication	
Descriptions of monitoring processes	Monitor	Assuring
Statements indicating safety walkabouts	Safety walkabout	
Discussions of safety inspection processes	Inspect	
Statements indicating that contractors were audited	Audit	
Details of reporting procedures, including accidents, incidents and near misses	Report	Learning
Statements concerning end-of-contract review practices	Review	

Our data analysis followed procedures recommended by Strauss and Corbin (1998) and Miles and Huberman (1994). Initial readings of the transcripts tentatively suggested the existence of a common set of practices adopted by these organisations to manage safety in outsourced relationships. Data from each interview within a specific outsourced relationship were compared, promoting the inductive generation of a list of first-order codes that relied on informant-centric terms (Gioia et al., 2012) (see Table 9). We were attuned to possible processes and procedures for managing OSH in outsourced relationships through our prior reading of the literature, in particular two guidelines on contractor management produced by HSE (2011) and Indicator (2011). These sources allowed us to generate a coding of practices using research-centric concepts and dimensions in order to create a data structure from the initial codes that had emerged from our data (Gioia et al., 2012). The guidelines helped to validate the practices we identified and simultaneously encouraged further reading of the transcripts to seek potentially missing practices. These second-order codes were then aggregated into five clusters of practices for managing safety in outsourcing relationships that are also represented in our data structure (Table 9).

In addition to these practices for managing safety in outsourced relationships, a number of pertinent issues affecting the management of safety in outsourced relationships were identified from the transcripts within particular cases, and these are elaborated on briefly in the findings section. Moreover, they formed the basis of a series of short practitioner case studies (these are included in the summary report submitted separately from this report). These have been developed and refined through an iterative process of consultation with members of the project's Industrial Advisory Group to sharpen their practitioner relevance and provide key insights into the management of these issues, which are common to outsourcing relationships. They have been agreed in consultation with the sponsor from the appropriate participating organisation.

Data reporting

The process and practices for managing safety in outsourced relationships are categorised into five clusters developed inductively from the data encompassing 13 practices that align with practices suggested from several practitioner sources (see above).

Each case is described against this framework. The cases within each company are then compared to each other to show within-company similarities and differences in the safety management practices in their outsourced relationships. Finally, the cases are compared between companies to reveal similarities and differences between companies in different sectors.

Following discussion (see above), each case was aligned with the 2x2 conceptual framework developed in the literature review (Figure 2). The safety practices from cases found in each quadrant are aggregated, and similarities and differences between quadrants are compared.

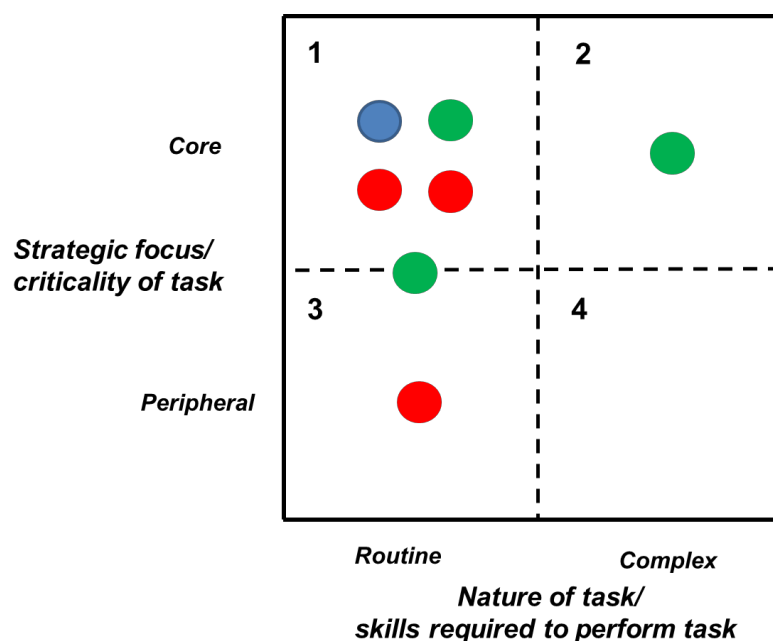


Figure 2. Situating seven different empirical case studies on a conceptual framework (red circles = PharmaCo; green circles = EngCo; blue circle = LogisticsCo)

FINDINGS

LogisticsCo (Table 10)

As FM provider to RetailCo, the procurement function within LogisticsCo managed the selection and appointment of contractors. Unfortunately, this process was difficult to change, and it was challenging to get approval for new suppliers.

To put a new contractor on our procurement system, I have to jump through a lot of hoops. It can take me, if you go through the T&Cs [terms and conditions] with legal, it can take me two to three months.

Nevertheless, induction of the contractors was performed by shift managers on-site in the warehouse. The induction concluded with a test. Individual performance was variable; some contractors failed and had to resit the induction. Inductions were logged and were valid for 12 months, after which they had to be repeated. Although this provided some assurance, the induction process was quickly completed and therefore might not have provided much understanding of the risks found in a warehousing environment. Just as performance in induction varied, so too did the quality of the RAMS. These were required in advance of the work, which created administrative problems for those wishing to complete a point-of-work risk assessment. One view suggested RAMS were simply what contractors could get away with.

I had another example of a roofing company ... [that] ... sent the RAMS over for working on the roof and they were atrocious. I thought, how have they got away with going into business with just this?

They are not the best, and if they can get away with it, they will.

Shift managers were also responsible for signing permits to work. However, it was unclear whether the responsibility this entailed was well understood.

We task them to do the inductions and also to do the basic permits to work. ... But they need to be much more switched on to it. They are taking responsibilities still just because I sit at the top of it. They will still end up in court defending why they signed that permit to say that everything was OK. They don't seem to see that. I think that's the problem.

One tactic to raise awareness was to scare them:

It is the only thing that seems to sink in, is to scare them. We did it with the HV, the high voltage on this site. ... I got some stuff off the internet that showed someone getting frazzled and how easy it is.

Communications about H&S were not common. Indiscretions – for example, failing to wear high-viz jackets in the warehouse – were pointed out immediately. End-of-shift briefings emailed to the manager of the next shift promoted awareness of ongoing activities and any continuing issues. Monitoring of contractor activities (including safe working) was the responsibility of the shift manager, but this was challenging to accomplish, because each has their own duties to perform, and as one shift manager noted, “*Babysitting is time consuming.*” Moreover, the physical layout of the warehouse and the specific location of the task also militated against frequent and regular monitoring of activity. Contractors could be working on the roof, for example. This monitoring was considered vital, because contractors were often ineffective self-monitors.

I don't think they're really that concerned. I think the level of supervision that these contractors put on-site is not good. You find yourself going out and checking on them because that's how we're tasked, and they've not got safety goggles on, they're on the top of his head. The supervisor's stood there and he's not saying anything to him.

The presence of CCTV within the warehouses had been helpful in ensuring adequate monitoring, and surprisingly was not seen as intrusive. A system for reporting near-miss incidents was in place and actively used. There was no mention of reviewing performance.

RetailCo audits LogisticsCo's management of contractor H&S performance. Additionally, an independent audit was conducted annually.

Table 10. Illustrative evidence: LogisticsCo

Clusters of practices	Illustrative quotations of first-order codes
Employing	<i>To put a new contractor on our procurement system, I have to jump through a lot of hoops. It can take me, if you go through the T&Cs with legal as well, it can take me two to three months, sometimes, to get a new supplier on there.</i>
Deploying	<i>It's the same as if we get a contractor come on-site and we can't find an induction in the file. Then we'll do another induction irrespective of whether they say, "I only did one a couple of months ago."</i>
	<i>So it's on the induction side as well. I mean, we had a bloke doing the mats, we had to do an induction for him a little while back. I remember him because he got the hump about having to do it. "Oh, I only get a certain amount of time on-site to do this job and you want me to do an induction." So then he came back again this morning; I couldn't find his induction paperwork, so I made him do another induction. He wasn't happy.</i>
	<i>We're RAMS mad in here now. Everything's RAMS. You've got to have RAMS for everything, and I'm like, yeah, you should. They weren't doing it.</i> <i>Sometimes we will get a contractor coming in and you don't know them from Adam. So that's the one thing where it's probably one of the biggest things, is no RAMS – not booked in, you're not coming in.</i>
Engaging	<i>We task them (shift managers) to do the inductions and also to do the basic, permit to work. I can't sit here all day long doing permit to work.</i>
	<i>They have forms for different things. So, for instance, if you do a hot works on-site, you have a hot-work permit. If you have working at height, you have a working-at-height permit.</i>
	<i>We address it as soon as we can through either a toolbox talk or maybe a team briefing.</i> <i>It's telling them what can happen. It's like, yeah, you can do it for 10 years and nothing happens, but it's that 10 years and one day where it goes wrong and you don't get a second chance.</i>
Assuring	<i>Then you've got handouts, and you can get them to read them as well and then sign to acknowledge to say they they've read them as well.</i>
	<i>I think the level of supervision that these contractors put on-site is not good. You find yourself going out and checking on them because that's how we're tasked, and they've not got safety goggles on, they're on the top of his head. The supervisor's stood there and he's not saying anything.</i> <i>It's a bit like plate-spinning, my job. You start that one off in the morning and you just go round during the day checking on certain stuff.</i>

	<i>For things like audits it's really easy to actually please an auditor now, because they say, "How do you control contractors?" You give them the forms, give them the book, and it's all there and they like it.</i>
Learning	<i>They're trained that if they've had an accident, they need to report it to a manager or a team leader. There then is an accident reporting form that needs to be filled out and that goes onto a system.</i> <i>People report stuff. They do do a near-miss thing here as well.</i>

EngCo

Outsourcing to FMCo (Table 11)

EngCo had approximately 100 operational sites in the UK ranging in size from small depots to large manufacturing hubs. FMCo managed the facilities (including maintenance and subcontracted work) on these sites under contract to EngCo. This was overseen by a small real estate division within EngCo.

FMCo managed the contractors EngCo brought onto their sites, having a managing agent role. These contractors were selected from those available on a preferred supplier list maintained and updated by the procurement function within EngCo. H&S management and performance was part of the evaluation criteria used in the tendering process for the outsourced task. Contractors undertook both EngCo and FMCo inductions under the instruction of the site supervisor.

So our site supervisors would review the risk assessments, methods statements and competencies to ensure suitability to the work and then, as I say, write and issue, and fully induct. So we do fully induct all subcontractors onto site as well.

The production of RAMS was an essential part of FMCo control of contractors. They were reviewed by site supervisors, and this allowed them to check the competency of the contractors coming on-site. Access permits and permits to work were another vital mechanism for controlling contractor activities. While FMCo issued them to those contractors they deployed, EngCo also employed and managed contractors directly. These contractors operated under EngCo's permitting system, and FMCo had no control over them. This created confusion over who had control of contractor activity on-site and specific tasks. EngCo required regular meetings to ensure effective dissemination of H&S messages and for reporting and updating. FMCo used toolbox talks where necessary. Formal communication at meetings was complemented by sharing of H&S information via social media.

EngCo managers were expected to undertake two spot checks and site walk-rounds per month. These checks were against a checklist of criteria.

We've got a form that we used that are for us to check ... We check high-level stuff. ... So it's prescriptive, but obviously if you find something, you just start to dig a little bit deeper. It's just a typical audit document.

This helped to ensure FMCo was compliant with terms of contract.

[The compliance document] is a, you could call it a huge tick list if you will, but [it includes] every piece of compliance under every heading that you can think of, and each of the sites are listed and it's been either passed, failed, done, not done, and what the actions are. ... It's a huge document, absolutely massive documentation, but it's very clever, it's a one-stop shop.

These and standard monitoring reports formed the basis of monthly audits of FMCo performance by EngCo to ensure compliance with the KPIs specified in the contract.

Table 11. Illustrative evidence: EngCo/FMCo

Clusters of practices	Illustrative quotations
Employing	<i>But our procurement team, who work alongside us, ... they will do the tendering on our behalf and go out to tender, and within that there's a whole range of activities, operations, expertise, health and safety, cost analysis.</i>
Deploying	<i>When you arrive on-site you will have a health and safety induction, which then gets refreshed every couple of years – you know, you're logged on the system. If you're actually a contractor on-site, following that induction you then have to go down to the FMCo office and [have] an FMCo induction, which gives you the more particulars of the site.</i>
	<i>But we work very closely with FMCo on the permits to make sure that at least the risk has been identified and covered with their RAMS. It's not just a paper exercise that things are done correctly.</i>
	<i>So the contractors that FMCo manage directly, we're responsible for the review of risk assessments, methods statements, competencies, and then we would issue any permits required. All contractors on-site would receive an access permit from us, and they're obviously determined by the risk.</i>
	<i>Recently we did have an issue with a contractor where I found out that they weren't working with the correct permits, which I then escalated, and they got chucked off-site.</i> <i>Our relationship is purely one of governance, in that we would issue relevant permits to work to ensure the work they're doing is in accordance with a safe system of work.</i>
Engaging	<i>On a monthly basis I have a reporting meeting with FMCo's regional management team, in which we go through things like statutory mandatory compliance and any issues.</i>
	<i>Because the worst-case scenario is we stop communicating and no one talks to each other and an accident does happen.</i>
	<i>EngCo is a big fan of social media ... We set one [group] up where we can post things and tell them what's happening and people can post questions and we can answer it straight away ... rather than getting tied up into a lot of emails.</i>
Assuring	<i>I have two locations managers for my region, and we have a formal monthly meeting where KPIs and SLAs, and compliance and health and safety, and finance is discussed in a presentation which we put together. Also, I have a great deal of informal catch-ups and discussions with EngCo colleagues as well. If not daily, certainly every other day, just about stuff.</i>
	<i>If we are visiting another site for a meeting and it's not our site, try and take the opportunity to walk round, because again you're a fresh pair of eyes. So we try to do what we call health and safety walk-rounds.</i>
	<i>As a location manager, I am tasked with doing two EHS walk-throughs per month in different locations.</i>
	<i>We manage our compliance on a monthly basis via FMCo, so we have a very strict governance process, so these guys are continually making sure that [things are working].</i>
Learning	<i>Making sure that we have closing-out meetings that are documented and that we do the lessons learned to roll it forwards.</i>

Outsourcing to SpecialistCo (Table 12)

A number of smaller companies provided specialist engineering and maintenance services to the work at one of EngCo's established engineering plants. Over time, these smaller companies had been acquired by larger national companies, but the business units dealing with this particular EngCo site had endured. Some of these relationships had lasted for more than 50 years, and many of the respondents had working relationships spanning decades. The long-term continuity of these relationships had helped to develop trust at a local level and helped to secure a succession of contracts, ensuring continued work from EngCo.

Despite familiarity with the operations on-site, and familiarity with the EngCo staff, all contractors were inducted on-site. RAMS were submitted in advance and scrutinised carefully prior to induction. These RAMS were often supplemented by a point-of-work assessment to cater for the dynamic nature of the factory environment.

Interviewee: *You've got to get your permit. You go and review the area. They look at it properly nowadays where, in the past, prior to the incident certainly, then you would be issued your permit with your risk assessment and off you'd go, and there was no real live review of that prior to the work commencing.*

Interviewer: *There is now?*

Interviewee: *Yes, and even our technicians now have a live document which is a point-of-work risk assessment, so even though the risk assessment's been done, perhaps by somebody like myself, or one of the project engineers or the service manager for the site, then when our engineer turns up, he's also got an A4 size [sheet] and he goes through his risk assessment.*

EngCo issued permits to work. These were displayed at the work site so that activities could be easily monitored against expectations. While there were occasional (supposedly weekly) checks by EngCo staff, some specialist companies reported that they had never experienced a spot check.

I'll be honest here ... The times I've worked on-site, and I'm speaking personally, I've not had an [EngCo] person come up and just have a check to say, have you got this and that in place, have you got your RAMS – or just a spot check, to see that you're working safely.

Verbal communication was a natural part of the relationship and an essential part of ensuring safe working on-site. Incidents were reported when they occurred. Individual contractor firms conducted internal reviews on completion of a project, but these were rarely done with EngCo staff to feed into a cycle of continuous improvement.

It depends generally on the size of it. Sometimes we'll have close-out meetings where we will attend site. That tends to be if the site has had an issue, and then that tends to be more, I think, end-client driven, rather than EngCo driven.

Table 12. Illustrative evidence: EngCo/SpecialistCo

Clusters of practices	Illustrative quotations
Employing	<i>We have a vendor list, which, obviously, they'll have to go through that they've got insurance, and they haven't got any big cases against them from the HSE or anything like that.</i>
Deploying	<i>Induction-wise if we brought someone new, or if we employed someone or brought someone new from a different site into here, they would have to go through the EngCo induction. We won't have our own induction.</i>
	<i>We have reviews on our method statements and risk assessments that we have in place, and our guys always have to comply, obviously, to site inductions, and risk assessments have to be passed through.</i>
	<i>We then produced our RAMS and COSHH, and electronics takes it to site. They'll review it and say yay or nay, or can you tweak that, we don't quite understand there, we don't understand this there, tweak that there. The RAMS get issued, we come to site and do our stuff in a safe manner.</i>
Engaging	<i>They do operate permit systems, but I don't know if that might need reviewing to be a bit better, and maybe updating.</i>
	<i>I've been into zero-harm committee meetings, and there's a lot of people who are involved, rather than just having your health and safety team and then something comes up with the rest of the business. There are people from all around the business involved.</i>
Assuring	<i>We also see on different sites, not so much here, the problem with a lot of signage is once you've walked past it six times, you don't read it anymore. What we've seen other companies do is change the location of the signage.</i>
	<i>I'll have a manager walk-round – boots on the ground, I think EngCo call it. They'll come in and have a nosey, have a look ... which I think is brilliant, because with us working in the department every single day, you can miss something.</i>
	<i>The safety department sometimes have a safety walk-around on certain days, and if they come across your area, they'll come in there and make sure your permit's in order, that your risk assessment's up to date and that you've got copies of [that] documentation.</i>
Learning	<i>We also have our own internal auditing process where some of the managers and project engineers will visit a site and just audit our own people on-site.</i>
	<i>Also, we use an EHS log where we record accidents, incidents, near misses and safety concerns. Safety concerns is our best, our favourite, really, because a safety concern is something before it's happened.</i>
	<i>We're not a business which is known for hiding things. If there's a health and safety incident, it does, as [staff member] says, everyone and their granny gets copied in.</i>
	<i>Sometimes we'll have close-out meetings where we will attend site. That tends to be if the site has had an issue, and then that tends to be more, I think, end-client driven rather than EngCo driven. It's all time, money and effort, and at the end of the job, everybody wants to get off and away from the site.</i>
	<i>We generally have a couple of lessons-learned meetings, which can happen at the end of the project, but any sort of issues that I have with any subcontractors would be fed to [others] during the outage.</i>

Outsourcing to AgencyCo (Table 13)

EngCo recruited trained personnel from a recruitment agency (AgencyCo) to enable it to fulfil contractual obligations with two energy providers to install smart energy meters on customer premises (homes and businesses) as part of the UK government's plan to 'offer' smart meters by the end of 2020. Negotiations with AgencyCo ensured that contractors had terms and conditions that were similar to permanent EngCo employees. The decision by EngCo not to employ directly was to avoid the need to make large numbers of employees redundant at the completion of the smart meter roll-out. EngCo argued that by remaining on AgencyCo's books, these contractors had a better chance of redeployment after the known end date of the project. These terms and conditions gave the temporary workers more security and greater assurance. By taking responsibility for all aspects of the individuals' employment, other than payroll, EngCo sought to build enduring relationships with individuals and reduce churn in the workforce.

Individual recruits had to be fully trained prior to starting work, but because they were eventually to work alone, they had an intense one-week induction in the field. This involved working alongside a mentor. Together with tools, items of PPE and other equipment, EngCo provided AgencyCo staff with an electronic device containing all the necessary risk assessments, methods statements and other policies and procedures essential for completing the task of installing smart meters safely. Communications with team leads in order to seek advice were frequent, and often occurred daily. Social media provided an effective method of communication, enabling questions to be raised and answered, and serving as a means of keeping track of progress on the job. Face-to-face team meetings were planned but occurred erratically given the geographic dispersion of the team and the rapid influx of new recruits. Bulletins and newsletters were sent to the contractors' home addresses, although there was no formal check that they had been read.

Work was audited regularly by managers and also by an independent company. This formed the basis of ongoing individual performance reviews and allowed managers to check both understanding and competency. These auditing activities were planned in advance and were detailed on the work schedule for individual managers.

Incidents and accidents were investigated by supervisors and were reported. These reports were reviewed by the manager together with the individual concerned.

Table 13. Illustrative evidence: EngCo/AgencyCo

Clusters of practices	Illustrative quotations
Employing	<i>We would go to procurement and say we've got this requirement, and they then select people based on their core competencies. There's an element from a health and safety perspective to make sure that they tick all the boxes, so we would look at their historical performance from a health and safety perspective, their qualifications, their competencies; the pricing comes secondary.</i>
Deploying	<i>Then from the blue-collar workers, they have training when they come into the organisation a typical induction like many companies have, and then we have a process that every three years they must have at least one day's annual safety refresher training.</i> <i>The philosophy is that I wouldn't ask anybody to do anything that I wouldn't do, providing it's within the parameters of the process, the risk assessment and everything else, and they know that.</i>
Engaging	<i>A live toolbox briefing on various subjects. When I say live, we have done it as some slides years ago, but then it's down to that manager's interpretation of how they deliver it. So we started doing a voiceover, so a nice little five- or six-minute clip on Adobe Presenter with a safety adviser doing a voiceover with slides and images, so that you're getting that consistent message in these toolbox briefings.</i> <i>Everything's been put in place, [and if] there are any changes or anything like that, then we're informed via bulletins that come through the post.</i>
Assuring	<i>My safety advisers will go out from time to time and do their own assessments of what's happening on the job or investigating an incident.</i> <i>It depends who is auditing you, but it's fairly the same every time. They'll watch you. You do it as you would do it normally, make sure you do everything right. They'll just be there to check ... They'll keep a sharp eye on everything.</i> <i>[The smart team coaches] drop onto site on a regular basis and carry out work-in-progress audits and from a coaching and mentoring perspective that can guide that guy.</i> <i>We also employ a third-party organisation who will go out and do it. They're effectively an independent organisation who will go in and do work-in-progress, but also post-completion, audits. So they will go back to a customer's property two to three weeks after the installation and do a full audit on the works.</i>
Learning	<i>You make notes of that, and that can act as a feedback service. Depending on how the managers or supervisors take that, they can have a sit-down with the individual and say, "Right, this was pulled up, you're not doing this."</i>

Comparison of practices for different relationships within EngCo

In all three EngCo cases, most steps in each of the five stages were reported as being enacted (Table 14). The exceptions were issuing permits to work and reviewing work in AgencyCo. The former was implicit in the recruitment to perform the task, and it was too soon in the cycle of installing smart meters for the latter to occur with AgencyCo. Another exception was the mention of reporting in FMCo, although this was likely to be present as a consequence of the assuring activities. While they complied with these steps, key informants within EngCo were sceptical that the steps were executed reflexively and critically. Comments over the perfunctory nature of reviews, for example in SpecialistCo, would support this stance.

Table 14. A comparison of occurrence of safety management practices across cases within EngCo

Five Clusters	13 practices	FMCo	SpecialistCo	AgencyCo
Employing	Selection	X	X	X
	Recruitment	X	X	X
Deploying	Induction	X	X	X
	Risk assessment – methods statements	X	X	X
	Permits to work	X	X	-
Engaging	Verbal communication	X	X	X
	Written communication	X	X	X
Assuring	Monitor	X	X	X
	Safety walkabout	X	X	X
	Inspect	X	X	X
	Audit	X	X	X
Learning	Report	-	X	X
	Review	X	X	-

PharmaCo

Outsourcing to ConstructionManCo (Table 15)

Subcontractors were selected from a list of preferred suppliers and invited to tender for specific tasks. Final selection was based on cost, capabilities and competence. The latter included a consideration of H&S performance. In the context of major construction works, PharmaCo devolved this responsibility for contractor selection to ConstructionManCo. An implicit but hugely influential consideration in contractor selection was the established and long-term nature of the relationships. This gave detailed site knowledge, and often translated into commitment to the site.

With reference to contractors, the ethos was very much to try to keep in-house contractors employed and occupied, because the knowledge that they have accrued is like anything – you spend a long time in a place and you accrue knowledge that you just cannot get off the shelf. We've seen that again and again and again. They're contractors, typically they should be only interested in what's at the end of their screwdriver and then moving on, but they've been here a long time and they have an investment in [the] site, they have a personal investment, if you like, in the area they're working in.

All contractors needed to be inducted onto site, following a PharmaCo process, and also into the specific locations where work was to be conducted. The large sites and diverse activities required specific inductions, as a complement to the general one. Details of the general induction were also provided in a booklet. However, reading this seemed to be a discretionary activity, when time allowed, rather than mandated.

So you do this induction, get the nice little booklet. ... It's quite an interesting book, I mean you can never – you'd be in the induction two hours if you asked them to read it, but I always say to them, you sign the health and safety questions and you say they've passed to work on-site, you give them the book, and you say to them, please read that when you get an opportunity, in the tea break and stuff like that.

Risk assessments and methods statements were obligatory and were to be provided to ConstructionManCo by the contractors prior to the commencement of any activity. However, the methods statements were quite variable in quality and in depth. To ensure a more uniform quality, ConstructionManCo developed a methods statement checklist, which was sent to contractors before they submitted their methods statements. This prevented them “[wasting] a lot of time reading stuff, sending it back, advising them when they're wrong, which sometimes you have to do because some of them need guidance, and it's better to guide than worry about it afterwards”.

ConstructionManCo were required to operate under PharmaCo's permit-to-work system, and it was mentioned by most respondents only in passing. A general permit to work was supplemented by permits to work that were specific to the task.

Toolbox talks on particular H&S topics, team meetings and daily briefings ensured communication about H&S matters was regular and frequent. There were also written communications in the form of emails and formal communiqués from both PharmaCo and ConstructionManCo.

Although the RAMS provided a basis for performance monitoring, and formal KPIs (including H&S-related inspections) were required fortnightly, monitoring appeared to be ad hoc. It depended on the particular manager, but many had no time to check.

Our H&S people used to do it [check the blokes are working properly] weekly, but time doesn't allow that any more.

In contrast, the auditing processes appeared to be more robustly applied. Both companies audited the contractor activity, and ConstructionManCo took a 'deep dive' into a particular aspect of the H&S management system (eg inductions) each month.

Near-miss reporting was actively encouraged. The numbers were recorded and formed part of the KPIs. There were no mentions of reviews of ongoing or end-of-project performance.

Table 15. Illustrative evidence: PharmaCo/ConstructionManCo

Clusters of practices	Illustrative quotations
Employing	<i>We then go through a selection process looking at costs, capabilities, and of that criteria, health and safety is one element. So for the bigger jobs, we have a tender selection and interview process.</i> <i>I said to the safety guys, "If we bring a new contractor in, rather than saying, 'Can we see your risk assessment and method statement?', bring them in and say, 'Here's your scenario, this is the work I want you to do, talk me through how you would do that.'"</i>
Deploying	<i>The induction one is a very good question, because I was inducted once in 2001, and I haven't been inducted since. I do the inductions regularly, but, on paper, if someone was to say, "When was the last time you were inducted?", it would be 2001!</i> <i>So you do the induction for every person that wants to work on this site, before he even thinks about RAMS or permits or anything like that.</i>
	<i>They will tick the box and you will go out and say, "Have you got a risk assessment for that?" Then they'll say, "There's my risk assessment." You will look at that and it will be, yes, they've done it, but they've not put their heart and soul into it.</i> <i>Every job has a set of risk assessments and methods statements that go with it, and, on the one hand, you can think it can be a little bit laborious, but then, actually, when you read these through, there's always little snippets that are very different.</i>
	<i>There's another layer of [PharmaCo] control, because we don't really do any work without a permit to work – it's called a general permit to work. There's supplementary permits to that.</i>
Engaging	<i>You have 20 or 30 minutes in the morning, and nobody goes to site or sets foot in that site or starts work until they've had that briefing. So everybody starts work every day with key safety messages ringing in their ears.</i> <i>We have team meetings. Every meeting starts with health and safety, it's the first on the agenda. We ask for a health and safety moment.</i> <i>[Staff member]'s brilliant with the guys out on the site, because she will engage with them and have that discussion, and they really respect that.</i> <i>It does work well, and what it shows us is that the health and safety forum isn't for them to ask us questions; it's for them to say, "These are some of the issues we've come across."</i> <i>We did have the health and safety exit signs in about four languages on what I call the Building Five job.</i>

Assuring	<i>In the past I've walked round with people and they'd be, like, "Mate, you're not working safely, you shouldn't be on the top step of the ladder", and they'll just tell them off. Whereas [Health and Safety Manager] has got a very engaging approach, like the just and fair piece, he will introduce himself, say, "I'm [name], I've noticed you're up on there. Have you got any concerns about that?" He'll have that dialogue.</i> <i>We have KPIs, which are reported on a two-weekly basis. We get a few of those, and one of the KPIs – I won't bore you with all the ones about cost and schedules and projects – but one of the KPIs is measuring accident and incident rates.</i>
	<i>We have inspection processes; we have a monthly audit process. We have our general top-level inspection, which is not [a] ticking-the-box [exercise], but there is no deep dive or there's nothing below the surface.</i> <i>I recognise that inspections aren't a great way of assuring safety, but it's something we can do relatively easily. So I task all my team with doing a site visit and formal inspection at least once per month.</i> <i>There are self-audits that they [ConstructionManCo] set up. PharmaCo EH&S have audited [ConstructionManCo] not too many months ago on various aspects, and they got audited recently on their permit-to-work system.</i>
	<i>We audit their processes, so we ask questions quite often when there's an audit of "What have you got in place for management of your contractors?", and "What have they got in place for managing their subcontractors?"</i>
Learning	<i>We have inspection programmes. We have an audit programme and we have near misses where people can anonymously report near misses and they can also report positive good practice.</i> <i>If there was an injury event or a non-injury, near-miss activity, because it's on a [PharmaCo] facility, we have to report it on our systems. But [ConstructionManCo] have to report it on their system because it's something that was associated with their work, and you think, that's not efficient.</i>
	<i>We do after-project reviews, yeah. We ask for customer feedback as well.</i>

Outsourcing to FMCo (Table 16)

The recruitment of (sub)contractors was predicated on them being on the books of both PharmaCo and FMCo. Companies that were potentially able to complete the tasks were sent pre-tender information. Both companies performed site inductions, *“So with every contractor that comes to site, they go through the same induction.”*

RAMS and PTWs were discussed at length by the respondents from FMCo but mentioned only in passing by PharmaCo employees. The development of RAMS was seen as an opportunity to educate subcontractors on the H&S requirements of the site and good H&S practice more generally. The process of supplying RAMS in advance and then requesting more information helped this developmental process. PTWs raised great concern for FMCo respondents. According to the contract, they were required to use PharmaCo's processes. However, FMCo audits of local FMCo site activity demanded that they use FMCo processes. This created a dilemma for local FMCo staff – whose processes should they follow? This remained unresolved, but FMCo staff were unsure whether their senior managers would support them in the event of an incident, whichever process they followed.

Communications appeared to be limited to meetings and toolbox talks. There were no mentions of written information regarding H&S matters.

Spot checks and daily walk-rounds were regular occurrences.

We do routine management monitoring of virtually everything you can possibly think of, be that walking round offices, plant rooms, amenity areas, checking compliance documentation, safety policies, safety equipment. We manage, monitor everything to death.

In fact, project managers in FMCo were required by their company to do two spot checks of each of their projects on a daily basis. Whether this was feasible was open to question given their workload and the number of projects each was responsible for.

Auditing of H&S management practices was required. PharmaCo audited FMCo's performance and required them to act urgently on overdue actions. The regular monthly monitoring and review of performance against particular KPIs stipulated in the contract drove behaviours within FMCo. Some tasks that would incur financial penalties if delayed were prioritised over others that might have had a more immediate impact on H&S but were not time-limited.

The contract is all-encompassing; however, the KPIs are specific. So where the frustration comes in is when we need things to be done that fall outside of the measured KPI metrics, and the KPI metrics are the things that drive service penalties. So the focus in FMCo is on a dashboard that's red or green. So the things that you can measure easily are the things that take 90 per cent of the focus.

Moreover, PharmaCo expected FMCo to audit its own performance and report to PharmaCo. Unfortunately, there was no auditable trail for some of the tasks, suggesting a less-than-rigorous process.

FMCo encouraged its employees to report incidents and injuries. Targets for these reports stimulated perverse behaviours, to the annoyance of PharmaCo managers, because trivia (such as untied shoelaces) rather than significant items (such as out-of-service pressure systems) were reported.

Although respondents reported some sort of review process of ongoing work, reviews that were conducted after a project had been completed were often poorly attended.

We'll normally have a review meeting at the end, a post-review meeting. Nine times out of 10, not many people are there.

Information from the reviews was typically retained by the project lead, informing actions on their next project, but this was never logged on a system for wider usage.

Table 16. Illustrative evidence: PharmaCo/FMCo

Clusters of practices	Illustrative quotations
Employing	<i>PharmaCo will identify projects, it will be raised in [PharmaCo's system], we'll have a look at a scope, go have a look at the area, we'll identify subcontractors we'd like to look at that.</i> <i>FMCo have a list of their preferred suppliers who have been inducted. PharmaCo have a list of their preferred suppliers who are inducted, and ConstructionManCo again follow exactly the same process for their contractors.</i>
Deploying	<i>The contractor starts first day. All the inductions will have been done already, so the FMCo and the PharmaCo induction. We'll have their cards, their passes, they'll know their exit routes. There'll be a toolbox talk on the first day.</i> <i>With every contractor that comes to site, they go through the same induction.</i> <i>It's there where we can guide them with our processes. ... We can send the RAMS back – no, we're not happy, this is what we're looking for – and it's a bit of education for them, and also this is what we expect now. The old days are gone.</i> <i>We're now looking at where we can align them in terms of even down to permits – are we allowed to write permits? Are we indemnified to write permits?</i> <i>[PharmaCo has] got a permit-to-work process that says for confined spaces, you need a permit to work and that's it. It doesn't go into what training for confined spaces; it doesn't go into that depth of it. Our [FMCo's] one does.</i> <i>ConstructionManCo, FMCo and PharmaCo, we all use that permit process, so we can map where activities are taking place and what systems they're working on, and things like that.</i> <i>We understand what [FMCo] are saying, but we don't see this is an issue for our contract, as we currently have a permit-to-work process running. Therefore, the permit to work would pick that up.</i>
Engaging	<i>We have our fortnightly meetings where we raise any high-profile jobs we're worried about.</i>
Assuring	<i>We do routine management monitoring of virtually everything you can possibly think of, be that walking round offices, plant rooms, amenity areas, checking compliance documentation, safety policies, safety equipment. We manage, monitor everything to death.</i> <i>Then there's the two reviews a day that the project manager has to do. So it's two spot checks.</i> <i>Reviewing permit to work. Let's go and get two off the board and actually go and visit these guys, and we'll sit 100 yards back, saying, "What's the method statement say?" Stop the guys working, "Come down, have you read your method, have you signed your method?"</i>

	<i>If we have an EH&S audit, or we bring in a third-party auditor, let's say FMCo might pick up three or four actions and they would be expected to respond to those actions, close them out in a timely manner.</i>
Learning	<i>I'm like, alright, I need to report this. I reported it one time to the senior directors, and they said, "We'll do some little seminar things across all accounts and we'll hold the managers back and tell them you shouldn't be doing this, you need to do all this."</i> <i>But 368 near misses a month we have to report, because that's what corporate tell us we've got to do. One per head on the account per month.</i> <i>We get routine reports and we do monthly governance on training.</i> <i>We have quarterly site safety committees where we'll work through the facts and figures – are we [PharmaCo] seeing over-reporting, are we seeing under-reporting, what are we FMCo corporate asking their guys to drive, what are we asking people to drive and report.</i>
	<i>After every project, we do after-action reviews. So we always do after-action reviews and try and take two or three learnings out of every after-action review to see if we can improve that next time from both.</i>

Outsourcing to LabServiceCo (Table 17)

Subcontractors employed by LabServiceCo to do work on behalf of PharmaCo were vetted by LabServiceCo during the pre-approval process. Subcontractors had to possess necessary qualifications, accreditation and liability insurance, and consideration was given to publicly available information on H&S performance, eg improvement notices from HSE. Having secured the contract, subcontractors were inducted onto site. RAMS were provided in advance as a means of assessing levels of competence. PharmaCo's permit-to-work system was used to manage task activity. Communications and monitoring weren't mentioned. However, *"some sites are audited almost continually"*. This meant that actions from one audit were rarely closed out before the next audit occurred. Often actions were left hanging as a consequence, making the audit process ineffective as a mechanism for improving H&S performance. Reporting was also demanding; there were *"reports on everything"*. In part, this reflected *"the [safety-critical nature] of the PharmaCo sites"*, but, as one respondent noted, *"if everything is [safety] critical, nothing is really critical"*. There was a demand to collect data to fulfil the reporting cycles. However, the systems for reporting in the two companies differed, albeit only slightly. This resulted in duplication of effort and commensurately increased pressure. Demonstrating compliance with the agreed procedures had become a task equivalent to performing the 'outsourced' task. These monitoring reports were reviewed regularly at a wide variety of frequently occurring (often monthly) meetings. These reviews were not designed to change processes, however; rather, they were intended simply to check compliance with existing processes.

Table 17. Illustrative evidence: PharmaCo/LabServiceCo

Clusters of practices	Illustrative quotations
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Employing	<i>But anyone we use has to be vetted centrally by [LabServiceCo]. We have a pre-approval process within [LabServiceCo], so they're vetted for things like their liability insurance – you know, are they a bona fide company and stuff like that.</i>
Deploying	<i>They have to have things like induction, they have to submit risk assessment and methods statements prior to doing work, so then if there are any questions or any issues, they can go backwards and forwards a bit and get sorted. Yes, we check that the person actually sent to do the work is competent to do the work.</i>
Engaging	<i>There are some of those people we meet periodically or regularly. I have monthly catch-ups with the [global region] compliance lead, [and] we have fortnightly catch-ups with the [country] compliance director [and] quarterly catch-ups with the EHS lead for [capital city].</i>
Assuring	<i>That's an example of where we've done management monitoring and we've found an issue, it hasn't been self-corrected by the service partner, but we are accountable.</i>
	<i>Really what we've added are layers and layers of management monitoring.</i>
	<i>We will continually do reviews and management monitoring of what LabServiceCo and other outsourced companies are doing, and then if we find a problem, we'll have to get involved in putting together the root cause analysis.</i>
	<i>Trips, slips and falls and things like that we use the system we've got. We do monthly walk-throughs round the site to look for those things. If we can catch early, yeah, it's just exhausting.</i>
	<i>I absolutely agree that they [PharmaCo] need to do check-ins and they need to do management monitoring. They might need to do independent audits and stuff like that. I absolutely get that, but let's not just redo everything. It just seems daft.</i>
Learning	<i>Only a minor worse state, but it is a worse state. Anything that results in a personal injury or is a serious near miss, they all get investigated thoroughly and a root cause is done, and then we have a sharing document that we share internally across the [LabServiceCo] world.</i>

Comparison of practices for different relationships within PharmaCo

Safety management practices were similar in each of the three outsourced relationships within PharmaCo (Table 18). Each of the steps in the first two stages (employing and deploying) was evident. Verbal communications were reported in all three cases, but written safety communications were reported only with ConstructionManCo and not with FMCo or LabServiceCo. This suggests that engagement was variable. While inspection and audits were found in all relationships, monitoring wasn't mentioned with LabServiceCo, although processes for assurance were well documented and executed. Reporting wasn't mentioned with FMCo. Reviewing was, but only to indicate that it was poorly performed. Reviewing wasn't mentioned with ConstructionManCo either. This suggests that learning was less well executed in outsourcing relationships in PharmaCo than the other steps.

Table 18. A comparison of occurrence of safety management practices across cases within PharmaCo

Five clusters	13 practices	ConstructionManCo	FMCo	LabServiceCo
Employing	Selection	X	X	X
	Recruitment	X	X	X
Deploying	Induction	X	X	X
	Risk assessment – methods statements	X	X	X
	Permits to work	X	X	X
Engaging	Verbal communication	X	X	X
	Written communication	X	-	-
Assuring	Monitor	X	X	-
	Safety walkabout	X	X	X
	Inspect	X	X	X
	Audit	X	X	X
Learning	Report	X	-	X
	Review	-	X	X

Comparison of practices across companies

The practices for managing safety in outsourced activities were broadly similar across all cases in all three organisations (see Tables 14 and 18). Considerable attention was given to 'employing' and 'deploying'. While verbal communication, especially through toolbox talks, was common, written communication of health and safety messages wasn't universal: although it was common in EngCo, particularly with individuals recruited through AgencyCo, it was variable in PharmaCo and uncommon in LogisticsCo. Steps for 'assuring' contractor performance were conducted in all organisations. Of the five stages, 'learning' was the one performed most erratically. The reporting step most often involved recording near misses. It was uncommon for reviewing to occur, and where it was reported in both EngCo and PharmaCo, this was often to note that it wasn't effective.

Comparison of practices between quadrants

Generally speaking, 13 safety management practices could be identified in each of the cases and these could be aggregated into five clusters. Moreover, many of the cases were positioned in the core/routine (top-left) quadrant of the 2x2 conceptual framework (Figure 2). Differences in safety management practices between cases didn't appear to be attributable to positioning in the framework; rather, they were particular to the client organisation and the specific outsourcing relationship, and therefore the nature of the task.

DISCUSSION

Based on the evidence in this study, the management of safety in outsourced relationships appears to follow a common undifferentiated pattern across sectors. The same five clusters comprised of 13 practices are apparent in the data from companies operating in the pharmaceutical, engineering and logistics sectors. Moreover, the same sequence of practices is found in all outsourcing relationships regardless of the strategic significance to the client firm or the complexity (or otherwise) of the outsourced task. This similarity is surprising. The initial conceptual framework suggests that the outsourcing of different activities might encourage a variety of practices. It's unlikely that the conceptual model is incorrect. Its basis is well established (Lepak and Snell, 1999, 2002), and it has been extensively used in academic research into human resource management. What is more likely is that despite their perceived differences, the outsourced relationships in this study actually fell into the same quadrant, so that the case studies were not adequately differentiated to reveal differences in practice. Figure 2 indicates that many of these cases were clustered in the top-left (core/routine) quadrant of the matrix. Given the similarity of the outsourced tasks, it's likely that these tasks had a similar strategic significance for the global client companies, and a similar level of complexity. Many of the cases were focused on facilities management or construction projects. Opportunities for further research involving outsourcing relationships positioned away from the top left-hand quadrant are discussed below. Of course, it's possible that outsourcing is commonly considered a viable strategic option for tasks that sit in this quadrant, and so the findings from this study will have application to many, or even a majority, of client–contractor relationships.

The 13 practices bear considerable similarity to the guidance on the management of safety in outsourced relationships (HSE, 2011; Indicator, 2011). Each of the 13 empirically observed practices maps effectively onto steps suggested in other guidance (Table 19). These practices relate to five clusters representing critical aspects of a contractual relationship. First, contractors need to be **employed**. This requires a process of selection and recruitment. All organisations had processes and procedures for checking competency and value for money as part of the hiring process. Second, contractors need to be put to work, or **deployed**. They need to be made aware of the expectations of the company they are employed by and of the circumstances of the site they will be working on. This requires an induction process. Every task will have an associated risk, however small. These need to be assessed and procedures described for mitigating them. Once the RAMS have been prepared, permits to work may be issued. These effectively control the activity of the contractors on-site, prescribing who can work where, to do what and how. Third, there needs to be effective and ongoing **engagement** between the client and the contractor. This may be through frequent regular meetings or through bulletins and messages posted on social media, for example. Fourth, the client organisation needs to **assure** itself that the contractor is adhering to the terms of the contract. This is especially the case in construction in the UK, where the client is ultimately accountable and therefore liable. Frequent monitoring, including spot checks, gives assurance of daily progress. More in-depth inspections and audits, which are often stipulated, provide benchmarking opportunities. Finally, the organisations in this study engaged in reporting, particularly of near-miss incidents and accidents. This was intended to encourage continued improvement in safety performance. They did however recognise that other forms of review (apart from those associated with accidents and injuries) were poorly done, and **learning** from projects and sharing knowledge wasn't supported by any formal process. Rather, if it occurred, it was dependent on informal connections.

Many of these steps were evident in the literature review. The literature review emphasised the practices associated with the 'do' and 'check' steps of the PDCA cycle, which in this case align with deploying, engaging and assuring. This study provides more evidence to support the procurement of contractors, which is part of the 'plan' stage. Like the literature review, this study seems to confirm that 'reviewing' (or learning) is not done effectively in the safety management of outsourced relationships. This provides an important and significant opportunity for further work and one that evidently requires urgent attention if safety performance records are to be improved.

Table 19. A comparison of recommended practices for managing safety in outsourced relationships (HSE, 2011b; Indicator, 2011) with empirical categories derived from the case studies

HSE (2011b, pp. 22–23)	Indicator (2011, p. 10)	Second-order grouping of practices (see Table 9)	Clusters of practices
Step 1: Planning - Specify H&S conditions - Discuss with contractor	When choosing the contractor, make reasonable checks that they're competent to carry out the work safely.	Selection	Employing
Step 2: Choosing a contractor - What competence is needed? - Get evidence	To enable them to plan the work, notify the contractor in advance of any constraints, site safety rules and other information of relevance.		
		Recruitment	
Step 3: Contractors working on-site - All contractors sign in and out - Reinforce H&S information and site rules - Check job and allow work to begin	When the contractor's workers arrive on-site, brief them on the site safety rules, hazards and emergency procedures. Check what they're planning to do and identify areas they'll work in and whether any disruption is likely. Get them to sign in and tell them they must sign out.	Induction	Deploying
Step 1: Planning - Identify hazards - Assess risks - Eliminate and reduce the risks	For significant jobs, request a risk assessment and methods statement. Read this on receipt and identify any hazards that are likely to affect your staff, visitors, etc.	Risk assessment – methods statements	
Step 2: Choosing a contractor - Go through information about job and site - Ask for methods statement	Arrange any special measures with the contractor that will help the job run smoothly and protect them or others from harm.		
	If they're conducting higher-hazard activities, eg hot work using a blowtorch, issue a permit to work.	Permits to work	Engaging
		Verbal communication	

		Written communication	
Step 4: Keeping a check	Monitor periodically to check that the contractor's staff are working safely and to identify unexpected issues that need to be resolved.	Monitor	
- Assess the degree of contact needed - How is the job going? - Are any special arrangements needed?		Safety walkabout Inspect Audit	Assuring
		Report	
Step 5: Reviewing the work	After the work is complete, make sure that it's of adequate quality and you receive any certification required, eg a commissioning certificate.	Review	Learning
- Review the job and the contractor - Record the lessons			

The obvious similarities in the way in which different organisations in different sectors approach management of safety in outsourced relationships requires some explanation. These similarities are reminiscent of the conformity of safety practices across low-hazard service sector organisations reported by Pilbeam et al. (2016). They argued that such similarity in practices is unsurprising because safety is a highly institutionalised domain of organisational activity (Meyer and Rowan, 1977), and one that's susceptible to political and cultural institutionalising forces in the environment beyond the organisational boundary (Ashworth et al., 2009).

There are three isomorphic pressures that act in institutionalised domains. Coercive pressures emanate from legal or regulatory requirements. For example, the Health and Safety at Work etc Act (1974) requires all firms operating in the UK to provide a safe place for people to work. This is reinforced by the EU framework directive 89/291/EEC (CEC, 1989). External pressures may also be exerted by contractual obligations (Ashworth et al., 2009), which are obviously present in outsourcing relationships. Their effects were especially apparent in some of the PharmaCo cases in this study. More subtle influences can be found in the requirements imposed by procurement processes. Compliance with particular standards may be a necessary condition for inclusion on the preferred vendors list, and therefore for eligibility to tender for work. Again, this was reported by some of the specialist contractors working with EngCo.

Normative isomorphism describes those forces that encourage voluntary adoption of safety management practices that are considered legitimate by others relevant to the organisation. Deviation from these practices calls into question the competence of the organisation and its compliance. This challenge is applied even when the particular called-for practices are unnecessary to the effective and safe operations of the firm and in line with what is 'reasonably practicable' (Health and Safety at Work etc Act, 1974). The recently published HSE report on the 'blue-tape' agenda (HSE, 2019) demonstrates the existence of these pressures and their impact. Organisations succumb to such normative pressures and are persuaded to adopt unnecessary practices 'just in case'.

Finally, where the means of assuring high levels of safety performance are uncertain, organisations may copy or emulate the practices of others. This mimetic isomorphism encourages the unthinking adoption of practices in order to secure an improvement in safety performance. Such an approach is likely when contracts change. It's easier to replicate the practices embedded in the previous contract, and currently operating, than to reevaluate the circumstances and make changes to more effectively match the competencies of the new partner with the evolving requirements of the task. This simple replication will be encouraged through the transferring of staff from one firm to another, which was evident through the outsourcing of facilities management in particular.

Limitations of empirical study

The limitations of this study are driven largely by the challenges of sampling and data collection. The sampling was largely opportunistic, guided by organisations willing to provide research access. Inevitably, practices and processes in organisations unwilling to provide access may be very different. Moreover, organisations unwilling to provide access may also have less effective safety management systems for contractors. The evidence provided here may therefore be considered to be better practice, from which other practices deviate. In most cases, individual sponsors from these organisations felt they could derive some additional benefit from an independent 'audit' of their activities and therefore facilitated access to informants. Nevertheless, they were eager for us to share our findings with them, and these discussions provided an opportunity to validate the results.

By following a logic of replication through multiple case studies to answer our primary research question, we identified many of the practices for managing H&S in outsourced relationships in the first few case studies. This suggested that we quickly reached saturation (Small, 2009). However, this requires further testing in a wider range of settings. The client organisations in this study recognisably operate in

hazardous industries and might therefore be expected to adopt processes relevant to the process industries (eg HSE, 2011). Similarly, the outsourced activities related to construction or facilities management (which may also include minor works). These too have extensively specified regulatory frameworks (including CDM Regulations) in the UK, and so similarities between cases may be inevitable.

The conceptual framework developed early in the project demanded theoretical sampling (Eisenhardt and Graebner, 2007) to find specific cases that met the characteristics of each quadrant. Unfortunately, this wasn't possible within the opportunities available in this project. While there was a retrospective allocation of cases to particular quadrants, this may not have been sufficiently accurate. The clustering of cases in the top-left quadrant and the complete absence of cases in the bottom-right quadrant would support this suggestion. However, it's also possible that outsourced activities are mostly routine activities privileging the left-hand side of the framework rather than the right-hand side, as the studies identified in the literature review also suggest. Furthermore, the tasks being performed by the contractors in this case may have more or less strategic significance to the particular client organisation, so their positioning on the vertical axis (top or bottom quadrant) may be ambiguous. For example, modification or (re)construction of a building is not formally or directly part of an engineering or pharmaceutical company's core business. It may nevertheless be indirectly core, for without the new facilities, drug development or engineering production couldn't happen. Therefore, the conceptual framework, despite its intuitive appeal and theoretical derivation, needs further clarification to ensure its effective use as a practical sampling tool to distinguish unambiguously between different forms of outsourcing arrangements and to allow a comparison of outsourcing arrangements in different client organisations. It has however served as a valuable heuristic tool in EngCo, stimulating discussions about why specific tasks are outsourced and how the contractors are managed with respect to H&S, and more broadly.

Similarly, it's unclear whether facilities management is more important in enabling the strategic goals of a pharmaceutical company or an engineering company or a logistics company. Different perceptions of the importance of facilities management in different industries (as well as between functions within a single organisation) will influence the positioning of this outsourced activity, permitting or precluding comparisons. As noted earlier, the conceptual 2x2 matrix places greater emphasis on the task than on relational aspects of the outsourcing arrangement. This may have inadvertently directed attention towards some aspects of the outsourcing arrangement and away from others that may also be important to the management of safety. Obviously, it's impossible to verify this from these data. Organisational culture may be such an example.

Finally, case studies ideally obtain data from a variety of different sources, including observations, reports and archival data (Eisenhardt and Graebner, 2007). This permits triangulation of the data, enabling the development of a detailed description. Often, however, they are "designed as multiple case studies with cross-sectional designs based on interviews" (Ridder, 2017, p. 284). Our study follows this pattern. Although some observations were made as part of site visits, these were not systematically performed. An early intention had been to use social network analysis to capture the relationships between employees in the two organisations who interacted over the management of H&S in the outsourced task. It quickly became clear that the principal actors involved in these discussions were few and that practices for managing H&S were formalised, even though they could have an impact on many people. This was especially true in PharmaCo, where a small number of PharmaCo employees were managing the activities of ConstructionManCo staff and the subcontractors they deployed across multiple construction projects.

Future work

In the limitations, we acknowledged the opportunistic nature of the case selection. An important next step would be to theoretically test the initial conceptual framework through a comparison of cases that evidently, definably and distinctively populate all four quadrants of the framework. Ideally, the client organisation should be kept constant for each of these four contractor relationships. This would perhaps require a clearer specification of the criteria on each of the two axes to enable more effective comparison – permitting, on the one hand, equivalence between cases in the same quadrant and, on the other, assurance of differences between cases in different quadrants.

A recently published study (Pilbeam et al., 2019) drew attention to the importance of context in the efficacy of safety interventions to achieve desired outcomes, typically changes in safety behaviour or reductions in accident and injury rates. The applicability of the five cluster, 13 practice framework for managing safety in outsourcing relationships needs to be more extensively tested in a wider range of organisational settings before it can be applied universally. There are several obvious settings where its applicability might be questioned. First, procurement and reviewing processes differ between the public and private sectors. There may be other steps that are important for successful management of safety in an outsourced relationship in the public sector. Second, SMEs, especially those towards the micro end of the spectrum, often lack the resources to monitor and audit the safety practices of another organisation, although it could be argued that they may be unlikely to outsource any of their activities. This assurance step may be managed differently (or not at all) in an SME context. Given the importance of SMEs to the UK (ESRC, 2016) and other national economies, this merits further investigation. Third, the contracting organisations in this study necessarily had a clear awareness of the UK's CDM Regulations (HSE, 2015); they were either construction companies or facilities management companies that also had expertise in minor construction work projects. This awareness and familiarity with a well-specified legal framework of operations between a client and a contractor may have unwittingly established a set of normative practices. A comparison of the five-cluster, 13-practice framework with practices found in other sectors in which risk assessments, methods statements and permits to work are not obligatory would help to test the universality of the model. Many service sector organisations operate in low-risk environments and provide low-risk support to client companies. The management of health and safety in outsourced relationships in service sector organisations could be investigated.

Reversing the focus from the client organisation to the contractor raises the interesting possibility of investigating the application of the five-cluster, 13-practice framework to workers in the gig economy. How are they employed, deployed and engaged? How is the work assured, and how are lessons learned from the experience of working with them? One of the cases explored the use of agency workers to support the installation of energy meters. These workers, however, effectively had full-time and stable contracts. The contracts were part of the conditions demanded of the agency by EngCo. Consequently, the case may not provide real evidence of how the health and safety of single, zero-hour contract workers is managed. This evidently requires more work.

The five aggregate clusters are suggestive of the bundling of practices (Schatzki, 2006) and point to the adoption of a managerial practices approach (eg Nicolini, 2009, 2011) towards investigating safety management. In particular, examining the micro practices that differentiate safe from unsafe performance following the distinction between Safety-I and Safety-II (Hollnagel, 2014) may be beneficial.

The 13 practices for managing health and safety in these outsourced relationships was evident in each of the cases. The weakest of the 13 practices was the reviewing of performance, particularly at the end of the relationship. This resonated with the findings of the literature review. The PDCA cycle referred to in the literature review anticipates continual improvement. Without a review step, the possibility of repeating the same mistakes is higher than it would be with a review. The reasons why this step is routinely neglected need to be identified. Tentatively, we suggest that cost, staff churn and lack of urgency are three clear candidates. This also raises larger questions: how do organisations learn? And

what prevents them from doing so? These questions could usefully be investigated in the context of safety, although some literature on this already exists (eg Drupsteen and Guldenmund, 2014; Drupsteen and Hasle, 2014; Drupsteen and Wybo, 2015). From a series of case studies across sectors, Pilbeam and Denyer (2015) identified six reasons why organisations failed to learn following a serious incident. In the light of this, a more pertinent question could be: how do organisations change their safety performance?

CONCLUSIONS

This project proposed to understand how to sustain and enhance OSH performance in a lead firm following organisational change through outsourcing in relatively low- and high-hazard contexts.

A conceptual framework that differentiated outsourced tasks according to (i) their strategic significance to the client firm and (ii) their relative complexity (scope and skill requirements) allowed the integration of findings from earlier studies of both firm-to-firm and firm-to-individual outsourcing relationships. Most attention has been paid to the outsourcing of routine tasks; there have been few reports of the safety management of complex outsourced tasks. Safety risk factors in outsourcing are a consequence of either economic and reward pressures or disorganisation. The former is more prevalent in those routine tasks that are peripheral to the client's core business. Here the emphasis is on completing the task as quickly and cheaply as possible. Disorganisation – characterised by poor induction and training, lack of communication, and weak safety management systems – is more prevalent in the routine tasks that are part of the client firm's core business. The literature also demonstrated that practices are well developed and commonly executed to support the 'do' and 'check' phases of the PDCA cycle. Importantly, it also revealed that the 'act' phase is neglected, preventing learning and inhibiting improvement in safety performance.

The empirical study was based on a series of embedded case studies across global companies operating in three sectors (engineering, pharmaceuticals and logistics). Sixty semi-structured interviews with respondents from both the common client firms and their contracting partners explored safety practices for managing outsourced activity, the history of relationships between the client and the contractor, and the ways contractors might improve the client organisation's safety performance. The findings identify 13 practices which can be aggregated into five clusters for managing safety (Figure 3) in different outsourced relationships across the three sectors, which maps effectively onto earlier recommendations (eg HSE, 2011; Indicator, 2011). While the obvious regulatory and normative institutionalising forces encourage convergence of practices, care should be taken when extrapolating the application of these findings, which relate to large global companies in the private sector, to public sector organisations or SMEs.



Figure 3. Five-cluster, 13-practice framework for managing safety in outsourced relationships

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