

RESEARCH METHODOLOGIES FOR STUDYING THE INFORMAL ASPECTS OF CONSTRUCTION PROJECT ORGANISATIONS

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Abstract

The complexity inherent in construction project environments can lead to emergence of informality and vice versa. This paper suggests that studying informalities in projects could lead to identifying paradoxes. Informalities in construction could be conceptualised through an economic or social perspective. Informalities may be explicit and visible, or simply implicit and thus invisible; commonly encountered in projects or specific to a particular project's context; ethical/legal or unethical/illegal. These dimensions suggest a framework within which to describe the emergence of a project's organizational behaviour. Non-functionalists and subjectivists argue that the informal issues are best understood through subjectivist paradigms. This paper presents an approach to the design of research approach appropriate to such tasks. In doing so it accommodates various philosophical perspectives, and the blending of various methods, to construct rigorous analysis to deliver context specific outcomes. It is argued that conceiving informality through alternative methodologies such as hermeneutic-emancipation and critical realism-semiotics offers opportunities to study informality in a meaningful way. Moreover, a design that combines multiple research strategies, e.g. case studies-ethnography, case study-ethnomethodology, is most suitable for informality investigations. It is suggested that operational aspects, such as ethical protocols and participant's concerns, are taken into consideration in the design of a research methodology.

Keywords: informality, methodology, method, construction.

INTRODUCTION

The complexity perspective of projects (Bresnen, Goussevskaia, and Swan 2005; Marrewijk et al. 2008; Baccarini 1996; Remington, Zolin and Turner 2009) and paradigm shifts in qualitative research methodologies (Denizen and Lincoln 2005) has enabled alternative conceptualisations in the study of construction projects. It is argued that the connectivity and interdependencies between the multiple systems in projects, operating in uncertain, ambiguous and dynamic environment, pose the difficulty in understanding and predicting the projects overall behaviour (Gerald 2008). The interdependencies occur between a number of sub-systems including, organisational, technical, social or social systems. Increasing recognition of the role of fussy socio-cultural-political environments in management of project, necessitate understanding projects as socially constructed realities (Cooke-Davis et al 2007; Small and Walker 2010). Moreover, studying complex connections between the systems can develop insights into project behaviour; including issues relating knowledge sharing; communication and relationships building etc. However, such studies can be challenging when the complexity underpinned by informal and shadow elements in the project organisations. Some of the informal issues that could create chaos in projects may not even be visible to warrant an inquiry or hinder at times hinder research studies (see Small and Walker 2010). Moreover, paradoxes emerge when irreconcilable contradictions exists between systems, including between elements of formality and informally (Bourne & Walker 2005; Alderman & Ivory 2007; Baresnen 2009). This suggests that studies into informality could assist in understanding project organisations as complex systems while providing an opportunity to identify paradoxes.

Recently the interest in ‘informality’ research in the construction management discipline has gained significant attention (Chan and Räisänen 2009). The need for such a research focus arises from the recognition of inadequacies in the current approach to studying construction organisations (Dainty 2008) and gaps in developing meaningful understanding or solutions to some of the complex issues (Berggren and Soderlund 2008; Moldoveanu 2004) facing construction. This trend can also be attributed to a movement that is seeking to understand projects as socially constructed realities. This provides much-needed subjective relevance while maintaining high levels of dependability, authenticity, transferability and auditability (O’Leary 2004).

The key element of ‘informality’ refers to the informal, casual or unofficial activities that occur in business firms, industries, societies and the economy as a whole. The conceptualisation of ‘informality’ is discipline specific, and in construction management informality is implicit in a number of research areas e.g. communication (Gorse and Emmitt 2007), safety practices (Lingard Rowlinson 2005), gender/ethnicity based research (Byrne, Clarke, and Meer 2005; Pink et al. 2010), procurement/recruitment practices (Bresnen et al. 1986), knowledge management etc (Senaratne and Sexton 2008; Bresnen 2003). These studies develop an understanding of key issues in projects, in the context of complex project environments with elements of informality.

However, explicit accounts of how to research informality in construction are limited (see Chan and Räisänen 2009, Rooke, Koskela and Kangioglou 2009). In this paper, ‘informality’ definitions from Economics, Urban Studies and Organisational Theory domains are reviewed to develop a conceptual understanding of informality. The conceptualisation is notably influenced by both economic and sociological perspectives, and subjected to alternative philosophical paradigms. As a consequence it seems likely that multiple worldviews of the

concept exist. While the conceptualisation presented in this paper is dominated by a sociological view, the economic view is briefly discussed.

The choice of an appropriate research paradigm in designing a strategy/method to study 'informality' is critical to produce meaningful outcomes. However it is equally important to accommodate the practicality of the research design. Aligning the conceptual research design to the operational research design is a frequent challenge faced by researchers (see Gorse and Emmitt 2007, 2009; Pink et al. 2010). In some instances practical execution of the most appropriate conceptual research design may prove impractical or impossible. The practical challenges can arise from the unwillingness of subjects to cooperate in the study (because of commercial sensitiveness, discomfort of participants of them been studied in-depth and profiled) and challenges posed by the national/institutional ethical protocols' (not allowing some pursuits based on privacy, risk, benevolence etc) (Australian Government 2007). This paper builds on the extensive intellectual debates that have taken place from time to time about the choice, relevance, understanding and adequacy of research methodologies when studying construction phenomena (see Rooke & Kagilogou 2007; Dainty 2008; Rooke, Koskela and Kagilogou 2009). Much of this debate is central to designing methodologies to study informality from a social perspective.

This paper explores three interrelated aspects critical for designing research approaches to study 'informality'. They are (a) a conceptual understanding of 'informality' in project organisations (b) the worldviews underpinning the ontological and epistemological positions relating to the concept of 'informality' and (c) the practical design of appropriate research methods to explore informality within various worldviews. These three aspects are reviewed in the context of selected studies that dealt with informalities in construction. It concludes by providing an overarching framework to identify appropriate research methods to study informality in construction. In doing so it consciously avoids prescribing the best approach to study different informality issues since the multiplicity of possible combinations of research approaches renders such recommendations as both naive and misleading.

To develop a meaningful understanding of the informality phenomenon a shift from the positivist paradigm is warranted. O'Leary (2010) suggests that "without an appreciation of how attributes, positions of power and privilege, and worldviews conspire to create subjectivities, researchers can easily fall into the trap of judging the reality of others in relation to their own reality" (p. 47). This could mean looking at the same issues with two different worldviews could lead to two different, but relevant and meaningful outcomes. The deeper the sociological perspective in the research approach, the greater the need for researchers to evaluate their philosophical predispositions when dealing with biases in constructing their research strategy, in order to improve the credibility of their research.

CONCEPT OF 'INFORMALITY': A REVIEW

'Informality' can be understood and defined from a variety of perspectives. By reviewing definitions and attributes of informality from other disciplines this paper develops a conceptual basis for informality for construction. The aim is neither to unearth the roots of 'informality' research nor to give an in-depth account of informality research in other disciplines. Rather it is to generate a broader perspective of 'informality' in order to identify alternative paradigms/worldviews underpinning it. This provides an opportunity to develop research approaches that could unearth informalities that create paradoxes.

This informal sector was characterised by activities and people not being clearly identifiable. However, the essence of the informality discussions can be attributed to two perspectives-

economics and sociology. The migration of people (between countries or regions) caused situational changes to the society (attracting the interest of urban architects, sociologists etc) and often created informal sectors, which attracted the interest of economists (Alsayyad 2004).

The study of '*urban informality*' is about discovering the social actors and forms of social organization (Alsayyad 2004), and has similarities to organisational informality. Urban informality is 'a way of life [and] may be approached from three interrelated perspectives: the physical structure, comprising a population base; a system of social organization, involving a characteristic social structure and related patterns of social relationships; and a set of attitudes and ideas of individuals or groups engaged in or operating under forms of collective behaviour and/or social control' (Alsayyad 2004p.8). The research on urban informality focused on developing an understanding about the functions and structure of informal groups/enterprises. However, some studies looked into the nature of informalities. Alsayyad (2004) suggest that informality is theorised as a marginal activity that is (i) a temporary manifestation occurring as a transient feature within an organisation, or; (ii) closely connected to the formal structure and is an essential and permanent component of way of life. Here the research focus is more about understanding the meanings. Meyerson (1991) suggests that any ambiguity in meanings can create paradoxical situations that could lead to irreconcilable contradictions.

Studies on '*economic informality*' focused on illegal economic activity (Parry et al. 2007) taking place "below the radar" of government. The illegal activities could take many forms including the activities of unregistered small firms, street labour and large registered firms employing workers without written formal contracts (Oviedo, Thomas, and Karakurum-Özdemir 2009). It is important to be precise as to what kind of economic informality is studied – e.g. unregistered firms, unprotected workers, or the self-employed- so that appropriate approaches can be devised to study the problem (See Lewis and Hosein 2006; Wells 2001, 2007). Inaccurate comprehension of the nature of the illegal economic activity could lead to suggesting inappropriate response strategies. Economic informality research has focused on: (i) Identifying and measuring informal economic activities; (ii) The impact of the informal sector on an industry and nation e.g. labour market, unemployment, productivity, GDP etc, and; (iii) Strategies for managing or controlling informal sectors e.g. regulation, legislation etc (Oviedo, Thomas, and Karakurum-Özdemir 2009; Parry et al. 2007). Here the focus is more on causal impacts of informality on economic outcomes and the effectiveness of regulation to deal with informality.

The conceptualisation of '*organisational informality*' is largely underpinned by a sociological perspective, while the economic domain is also acknowledged. Morand (1995) makes an interesting point about informality in organisational research, noting that the term is 'often used as conventional descriptors of social behaviour and social situations in organisation... [and] researchers generally have avoided rigorous attempts at construct definition and validation' (p833). He describes that the 'term, informal, and its accompanying noun informality, refer to social situations or gathering that are generally characterized by behavioural spontaneity, casualness, and interpersonal familiarity'. The distinction between informal and formal aspects of organisations translates into interpretation of artefacts such as dress codes, jokes, behaviour in meetings etc. However, his articulation of informality relates to interactional behaviours between actors in social construction and production; and the subsequent categorising of organisations (e.g. organic, inorganic, bureaucratic etc.) and their traits (e.g. innovative, agile etc).

The non-hierarchical, self-coordinated, new means of communication along with significant division of labour are all creating transient boundaries in the organisation and complex organisational setups. Informality emerging in this context is viewed as a contributor to creativity and innovation. It plays crucial role in developing links and trust among business partners operating in turbulent and uncertain business environments. Therefore, informalities can operate as a control mechanism offering flexible arrangements and fast solutions, where it is impossible to deal with all possible events formally. However, informality can also be seen as a threat to social justice (e.g. aiding discrimination) and hierarchical rules. Misztal (2000) suggested that creation of the Asian economic crisis could be attributed to the failure of 'informal connections' - such as nepotism, leading to a lack of accountability and transparency - as a way of doing business. He argues that informality is best understood when explicitly compared with formality and suggests that maintaining a delicate balance between formality and informality is critical for order and control in the new forms of organisations. The formality is described as structures, processes and protocols. This reinforces interactional nature of informality as proposed by Morand (1995).

Informality issues can be related to interpersonal relations, informal leadership, behavioural control and informal communication (Hodgetts & Hegar 2008). Activities associated with interpersonal relationships could include informal advice, trust, or communication. Informal leadership is associated with the development of power within non-formal structures: this may best be described as gate keeping or perimeter guarding. Behavioural control is a form of manipulation of members of an informal group using a variety of control strategies including establishing in-groups, coercion or persuasion.

INFORMALITY IN CONSTRUCTION: TAXONOMIES OF RESEARCH

Complexity, chaos and paradox in projects, at least in part, can be attributed to emergence of informality. The loosely coupled nature of project organisations (Dubois and Gadde, 2002) is a setup conducive for informalities to emerge. Informality in construction in the context of a firm, project or industry could be argued to be a blend of both economic and organisational elements. Chan and Raisanen (2009) have discussed the informality concept in the context of construction and identified a number of challenges facing researchers. In essence any of the informality issues examined within a construction organisation are related to its practices, structures/systems, or social groupings (e.g. "networks/clans of actors") in the context of a phenomena (e.g. knowledge generation, safety management, competitiveness, learning process etc). However, studies explicitly designed to study paradoxes or identifying paradoxes as part of research outcomes are limited in construction management.

It is synthesised that the informality research conceptualisation involves five aspects, and they influence the design of the research approach. However, subsequently it is argued that methodological paradigms also influence the conceptualisation of informality. This complex interactional process is disused later in this paper. This framework (ref. Figure 1), along with the methodological framework in the subsequent section (is Figure 2) is then used to review how the existing studies of informality are approached. This will assist to identify the research approaches practices in studying construction informality and possible alternatives.

Conceptual underpinnings

Using the above review potential directions for informality studies in construction can now be conceptualised. This conceptualisation is intended to serve as a guide in the choice of research strategies for informality studies. It suggests four related aspects underpin

taxonomies of informality research: Informality domain, Research issue, Legality/ethics of the issue and Informality visibility (refer Figure 1).

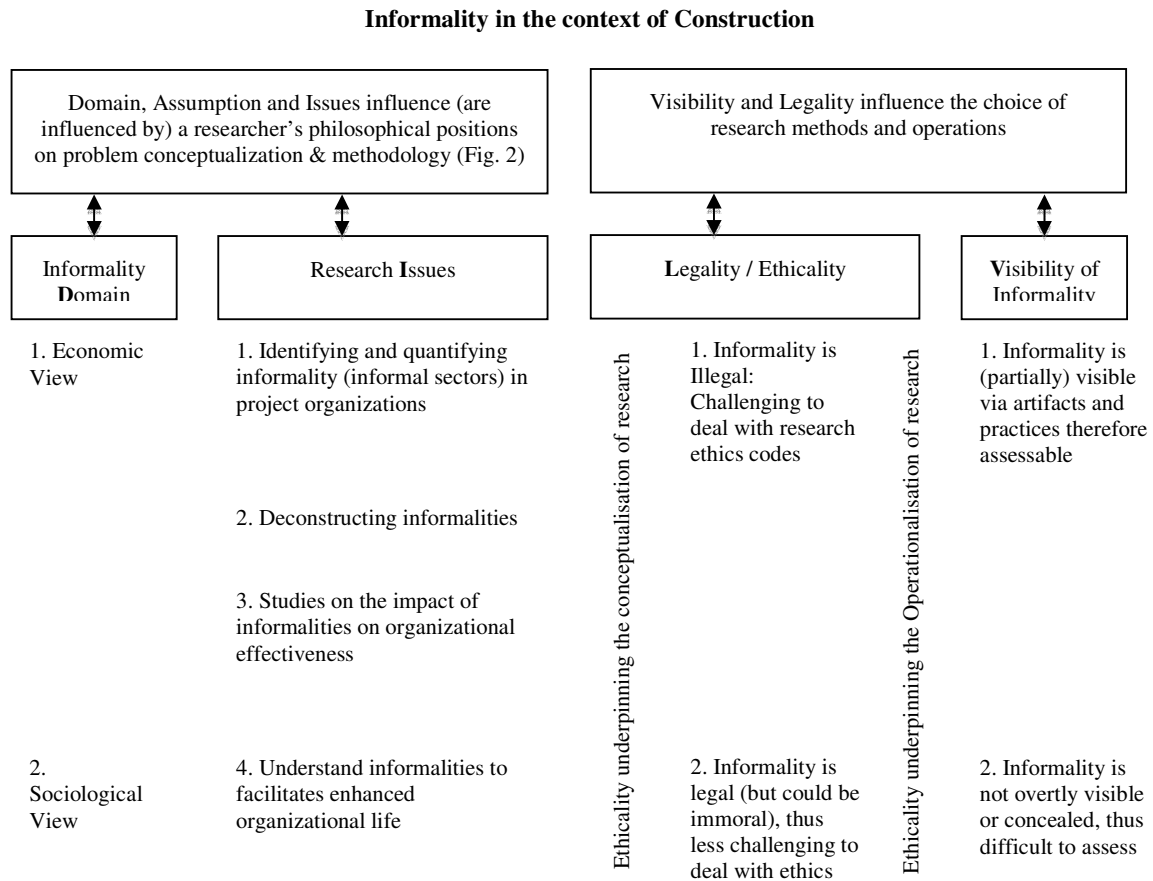


Figure 1: A framework for conceptualising informality in construction.

Informality Domain refers to the disciplinal - that is economics or sociology - attributes influencing the core conceptualisation of informality research. As the areas of research in construction management are diverse, treatment of topics can be influenced by different disciplinal assumptions and training (Rooke & Kagioglou 2007; Runeson 2007). In this context an economic view of informality is focused on identifying and quantifying illegal economic activities and devising regulation and strategies to manage them. The social view is focused on ‘structural and interactional’ issues of socially constructed realities (and some times with the real world). Ethical and moral aspects are central to both social and economic of informalities research conceptualisation and operationalisation (Denzion and Lincoln 2005).

Conceptualisation of *research issues* is influenced by the attributes of the ‘*research domain*’, and *methodological predispositions* (as identified in Figure 2) of a researcher. In the context of this paper four general research issues are identified. Each informality aspects e.g. interpersonal relations, informal leadership, behavioural control and informal communication etc, could be researched via one or mix of the four-research issue. The research issues can be: (i) assessing actors’ interpretations of informal interactional orders, (ii) Developing meanings of informality issues and their associated characteristics via observed behaviours (e.g. bodily postures, conversational interruptions, phonological slurring, etc), or deciphering

unobservable deep beliefs (values, assumptions etc) (iii) Assessing the impact of informality on organisational effectiveness and (iv) Understanding informality in terms of enhancing organisational life (not directly associated with improvements in organisational effectiveness). One could argue researchers' deep assumption about the nature of informality, whether it is a temporary or permanent phenomena, could influence research conceptualisation. Researchers, assuming informality as a permanent aspect, may not seek to identify strategies to eradicate informality. They rather conceptualise their research with an interpretative, hermeneutic- emancipatory tradition- that enables them to understand the meaning and/or transform the socially constructed realities by liberating the members from their traditionally held beliefs (Alvesson and Willmott 1992; Alvesson 2002). Assumptions of the temporary nature of informality could lead to technical and rational approach to eradicate informality [Refer Figure 2].

The level of *visibility of an informal* issue is dependent upon on how it is conceptualised. For example interpersonal relations in an organisation can be studied via more visible rituals depicted by artifacts (e.g. jokes, form of language), or via less visible trust and advice networks. The visibility of the issues has a significant influence on the method section. *Legality/illegality* of the aspect under study has significant influence on the operational design and choice of method. Almost all universities are bound by research ethics protocols that aim to minimise the risks associated to research design and upholding the welfare of the participants (see Australian Government 2007). Research projects studying illegal issues (even a possibility inadvertent identification) are imposed with additional statutory obligations. The minimal obligations attached to anonymous illegal studies could attract researchers to engage with methods that offer anonymity.

Although research on unethical and immoral informal activities (but not the explicitly illegal) are not subjected to additional statutory obligations, data collection and reporting of the findings should nevertheless be treated with sensitivity, and the findings should not be exploited out of context. Ethics is not solely about 'procedural ethics' that seeks compliance with established protocols (see Guillemin and Gillam, 2004; Brydon_Miller 2008), being an intrinsic aspect of the research conceptualization, where researchers sublimate their power positions, privileges and prejudices (O'Leary 2010). The argument that all research is value-ridden (as opposed to value-free), makes it essential that researchers understand the value system and its impact on their own research position (Corbin and Struss 2008; Christians 2005).

It is inaccurate to view the conceptualisation process of interaction between the above five aspects as linear. Conceptualisation of an informality research problem is a resultant of highly complex interactions among the numerous aspects under consideration- e.g. domain, assumptions, issues, methodological paradigms. The following section discusses the methodological issues associated to study of informality. Subsequently aspects discussed in this and following section will be used to review selected published informality studies to identify some of the current research approaches and propose any possible alternative strategies.

Research Approaches and Processes

Keeping pace with the rapidly emerging paradigm variations in the qualitative methodologies (the 'isms' revolution) is challenging (Denizen and Lincoln 2005). Most evolving paradigms are arguably variations to existing post-positivist paradigms, accommodating deviations in ideology or research process (Joseph, and Roberts 2004). The evolution of alternative paradigms can be observed as staying true to the cause of the fundamentals of post-

positivism: that is to acknowledging multiple worldviews (Denzin and Lincoln 2005). The evolution of paradigms constantly challenges the prevailing worldviews (constructed by the ontological and epistemological positions) that may stand in the way of developing a clear understanding of a problem (O’Leary 2010; Bryman 2008).

Process 1: Selecting a Methodology: Paradigms/ worldviews	Process 2: Selecting a Methodology: Research Strategy	Process 3: Selecting a Research Method- Data collection	Process 4: Selecting a Research Method- Techniques
Positivism		Surveys (open ended- close ended; postal- email-online etc)	Descriptive statistics
Post-positivism	Case study		Inferential statistics: Parametric and Non-Parametric statistical techniques
Constructivism	Ethnography	Observation	
Interpretivism	Action research	Interviews (face to face-telephone etc)	Coding: (Open codes, Axial Codes, Selective codes, Memos, diagrams etc)
Critical Theory	Grounded Theory	Focus groups	
Hermeneutics-Emancipation	Phenomenology		
	Ethnomethodology		
Critical Realism	Discourse analysis	Diaries	Conversion analysis
	Semosis	Artefacts, documents, and records	Thematic analysis
Pragmatism (as proposed by Creswell and Clerk 2007)		Visual (video) methods	Textual analysis

Figure 2: A framework on the possible Research methodologies for informality research
 Synthesis based on Strauss and Corbin (1998); Scale (1999); Denzin & Linclon (2005); Clerk and Creswell (2007); Corbin and Strauss (2008); Bernard and Ryan (2010)

Two key terminologies, methodology and method, are used in Figure 2 to describe the methodological practices in informality research. Strauss and Corbin (1998) say that methodology is “[a] way of thinking about and studying social reality’ and method is ‘[a] set of procedures and techniques for gathering and analysing data’ (p3). Morse and Richards (2002) use the term ‘research strategy’ in lieu of methodology and describe research strategy as ‘a way of approaching data with a combination of techniques that are ideally consistent with the method the researcher has chosen to use. ... [T]he term method ... refers to a more or less consistent and coherent way of thinking about and making [collecting] data, way of interpreting and analysing data, and way of judging the resulting theoretical outcome’ (p 10). The term ‘Technique’ to refers to a way of attempting or completing research task (e.g. data coding). Although ‘techniques’ themselves do not indicate which method is employed in the research, the ways in which the techniques are applied could indicate the research method in application.

Figure 2 identifies four processes to the methodological design of research. The first two processes are related to the choice of a methodology, a worldview(s), and a research strategy(ies) that is accommodative of that worldview. The last two processes are related to choice of methods that focus on data collection and analysis techniques. Despite the numerous combinations of possible research practices, some combinations may not be

philosophically aligned. It is obvious that positivist, critical theory, close-ended survey and qualitative coding are one such combination. It is not the aim of this paper to give an in-depth review of methodological aspects, but rather to discuss the possible combination of methodologies and methods in studying informalities.

Selecting a methodology which aligns with the paradigm (Process 1) and strateg(ies) (Process 2) is interactional with the conceptualisation of an informality issues (i.e. the domain and issues). The worldview or paradigm affiliation of a researcher is intrinsic to the way a research issue is conceptualised (Morgan and Smircich 1980). As indicated earlier, this means conceptualisation of a research issues occurs in multiple interactional layers, constituting the worldviews (as described in Figure 2) and informality conceptualisation aspects (as identified in Figure 1). Varieties of post-positivist or constructivist philosophies “enable researchers to deal with complex layered and often unobservable strata of reality that impact upon our action and thinking” (Joseph and Roberts 2004, p1). One of the eight worldviews proposed in the Process 1 in Figure 1 could conceptually underpin informality research. The subtlety of the paradigm variations demands deep engagement with the literature to perceive the differences. Moreover, it is instructive to map the development of philosophical alternatives beyond the dominance of social constructivism and interpretivism. The tensions between emerging constructivist/ interpretivist/critical theorist philosophies is evident in literature (Joseph and Roberts, 2004). In essence, during the Process 2, researchers conceptualize their research issues with a worldview they uphold (if they are fundamentalists) or the worldview they want to adopt (if they are pragmatists). Researchers need to carefully evaluate and respond to critiques of the chosen worldview and why it will deliver meaningful outcomes.

Process 2 is about identifying a *research strategy* that complements the choice of worldviews. A research design to study informality could combine multiple strategies. As an example ‘ethnography’ is complementary to ‘case studies’ and ‘grounded theory’ (see Barrett and Sutrisna 2009). In the case of a construction project the nature of the project, and identification of the boundaries defining the social units of which it is comprised are best investigated using case studies. The case study is an overarching research strategy rather than simply a data collection method or a research design concept (Yin 1994). Stake (1995, p. 2) says. “The case study methodology/strategy allows any selected method to “study a case analytically or holistically, entirely by repeated measure [positivist] or hermeneutically, organically or culturally and by mixed methods...” (Stake 2005, p. 443). Therefore, the case study could be designed with combinations phenomenology, ethnomethodology, discourse analysis and semiosis.

The methodological position will influence the selection of the appropriate *methods to collect and analysis data* (or vice versa). In theory the choice of a data collection method should be predominantly underpinned by the methodology. However, in practice, numerous other considerations, such as ethical protocols or the cooperation of participants tend to act as constraints on the choice of data collection method. Although methods supporting positivist paradigm are reduced to surveys and published numerical data, a trend has developed for the use of quantitative methods to analyse the results arising from non-positivist methods such as Key Word in Context analysis (Bernard and Ryan 2010). Almost all non-positivist methodologies could use interviews and focus groups as data collection methods. Ethnographic studies in addition to the interviews and focus groups could use observations and any relevant artefacts/documents as data. Patterns of informal behaviour can also be studied with visual (video) methods and use of diaries. Nevertheless, Coding used in quantitative analysis techniques, is commonly understood as a qualitative analysis technique.

Strauss and Corbin (1998) have provided an extensive discussion on coding process (e.g. open codes, axial codes, selective codes, memos, diagrams etc. Conversion analysis technique is central to discourse analysis. Thematic analysis identifies themes emerging from data and is a technique that is conceivably applicable to most qualitative approaches (See Bernard and Ryan (2010) for guiding the operationalisation of these methods).

The researcher as the ‘Research Instrument’: The fundamental issue

Designing an appropriate non-positivist research approach is only a part contributor of good and meaningful research. The research design only establishes the ideology underpinning the research and the processes that are followed in the design and execution of the research. However, the fundamental concern is ‘how this methodology will be executed by the researcher, who is the instrument, in arriving at a meaningful research outcome. In contrast to quantitative research, where researchers rely upon validated statistical instruments, qualitative research believes that researchers themselves are the instruments. Corbin and Strauss (2008) argue that good qualitative research emanates from the researchers who share the characteristics of having a humanistic bent, curiosity, creativity and imagination. The key characteristic that distinguishes the good qualitative researchers from the others is the ability of the researchers to deal with risk and to live with ambiguity. Moreover, researchers who develop trust and confidence in the self as the research instrument (as opposed to established tools and techniques) conduct good qualitative research. However, designing good quality research practices that maintain the adequacy and deliver meaningful outcomes is crucial (see Dainty, 2008 on the principles of methodological plurality)

A SELECTED REVIEW OF INFORMALITY RESEARCH

This section reviews methodologies used in studying informalities in construction, based on selected published work in the arena. This review includes papers in which informality is dealt implicitly and/or explicitly. It should be noted that the selected studies are not a representation of the informality studies in construction. However, this review can inform a range of research approaches that can be discussed in the context of Figure 1 & 2. This can assist in developing an understanding of taxonomies of methodologies that can be used for studying different informality issues.

Review of informality studies based on the economic perspective

A study by Lewis and Hosein (2006) focused on estimating of the size of the informal (hidden) construction labour force in the Trinidad and Tobago (T&T). That is identifying the nature of illegal labour and quantifying the extent of informal (illegal) labour employed in construction projects/sectors in a particular region. Lewis and Hosein (2006) rationalised the methodological approach using anecdotal evidences and citing the difficulty in obtaining reliable data on illegal sectors or activities within the construction industry. This study used published statistics from a number of sources to estimate the extent of informal construction labour in T&T. The human research ethical issues impacting their study are irrelevant, as the paper is based on published documents. However, in the context of current National ethics guidelines (at least in the context of Australia), the primary data collection related to identifying and quantifying the hidden sector will pose significant challenges.

The paper by Wells (2001) focused on unrevealing the informal sector in a region in the context of capital formation in less developed economies. In this paper the illegality aspect of the informal sector is not overtly discussed. Like the previous study the assumption about the temporary/permanent nature of the informally is difficult to gauge. The paper is based on

observations and/or discussions with participants and published data. Mentioning of not to interpret the findings along the racial context highlights the ethical issues confronting the researchers beyond the study.

Oviedo, Thomas, and Karakurum-Özdemir (2009) identify a number of other methods that could be used to study economic informality. The approaches are classified as direct (micro) methods and indirect methods (macro) methods. The micro methods could employ (i) voluntary surveys (Nuget and Sukiassyn 2009), interviews and Tax audits (Oviedo, Thomas, and Karakurum-Özdemir 2009). Use of the survey method, specifically anonymous surveys, to collect primary data is relatively less challenging from an ethics clearance point of view. The unidentifiability of personalities associated to any illegal activity, minimises the risk to and responsibilities of the researchers and institutions conducting.

The interview method could pose significant challenges due to the identifiability of the actors in the illegal informal sector. The protocols call for reporting such accounts to relevant authorities. With tax audits, the collection of private nature of the data could also prove challenging. Moreover, any identification of informality associated to tax evasion could be treated as criminal activity; researchers are required to notify this to appropriate authorities. Debating about doing the 'right thing' could spark difficult ethical dilemmas for researchers who assume both economic . However, tax-based analysis can be conducted using secondary published data, if available. These methods include (i) studying the discrepancy between aggregate and income expenditure, discrepancy between total labour force and formal employment and physical input of resources (e.g. use of electricity or water consumption). In essence economic informality studies can be said to be dominated by positivist methods, although there is room for the use of post positivist methods.

Review of informality studies based on the sociology perspective

Baarts (2009) and Pink et al. (2010) studied safety practices in the construction sites using ethnography. Baarts studied the collective individualism as an informal emergent social process relating to construction site safety practises (fits into Research Issue 2 in Figure 1). Making meaning of partly visible emergent informalities was approached through an in-depth ethnographic study. Ethnography is commonly used as a means for exploring cultural aspects of human organisation (Geertz 1975; Morse & Richards 2002; Schein 2004). Ethnography can unearth hidden informal practices as part of the culture of an organisation. In this study researcher become part of the cultural group, conducting observations during the normal course of work. The ethnographer has questioned/evaluated the ethical concerns and personal prejudices in an explicit manner in the conceptualisation and operationalisation of the research study. The descriptions made during the site observations and data from semi-structured interviews were used to create meaning and develop an understanding of the informal social process.

Pink et al. (2010) discussed the opportunities offered by the new breed of ethnographic approaches in developing better understanding of social phenomena. This study through the ethnographic process developed an understanding of invisible routes of communication in construction sites employing migrant workers (research issue 4 in Figure 1). The use of photographic and video-based data in addition to conventional ethnographic data is also proposed. Pink et al. (2010) indicate the 'essential criteria [of their study] is that the researcher retains the reflexive awareness of how her or his work is informed by theory and a self-consciously considers how theory and practice remain in dialogue through the ethnographic process'. The focus on developing meaning of social practices to understand

organisational life fits well with the hermeneutic-emancipatory paradigm. The above two studies analysed both visible (using observations) and hidden aspects (using in-depth discussions) of informalities. However, they did not report any ethical practical challenges in executing the research design. Moreover,

Gores and Emmitt (2007, 2009) looked into the informal aspects of communication process during the construction progress meetings (research issue 1 in Figure 1). The analysis of the observable/visible physical behaviours and linguistic interactions during the site meeting (across 10 projects) was used to unearth the not so visible socio-emotional interactions influencing informal relationships among the team members. They used observation methods and Interaction Analysis Process approach (a qualitative approach to generate quantitative data) to analyse the communication process. The difficulties faced with executing the conceptual research design in practice are highlighted. A study by Styhre, Josephson and Knauseder (2004) implicitly dealt with informalities associated to learning capabilities in organisation networks (Research Issue 2 in Figure 1). They employed case study and action research strategies using individual interviews, group interviews and published documents as data to identify informal networks.

Bresnen (2009) employed inductive approach to study emergent practice of partnering through a practice-based approach. The study used interviews, documents and observations to grasp the emergent nature of partnering practice (research issue 2 in Figure 1). Furthermore, the paper discusses alternative methodologies and methods for generating knowledge, reinforcing need for multiple lenses to study informalities. Barrett and Sutrisna (2009) have advocated the use of multiple approaches within the context of case study strategy for generating meaning for social phenomena (Research Issue 3 in Figure 1). However, caution in the abstraction process is urged to maintain the relevant meanings of events and not to delude the meanings by making it out of context. Their study on understanding process in construction projects was conceived within the critical realism paradigm, using case study and grounded theory strategies. The critical realism paradigm enables them to assume both objective and subjective realities of constructs associated to their study. They used condition consequence matrices and cognitive maps to show relationships between concepts and to identify some causal relationships.

DISCUSSION

The above review highlights that diverse, but effective methodologies and methods employed in studying informality and emergence in construction. The studies on economic informalities, due to difficulties in gathering reliable primary data, have used anecdotal evidences and existing published data in identifying and quantifying informalities. Studies on sociological perspective employed multiple strategies including case study, ethnography, action research, and grounded theory, using different types of data gathering techniques, including observations, interviews, published documents etc. It can be inferred that all the above studies, except Gorse and Emmitt (2001, 2009), used qualitative methodology conceived by the non-positivist tradition. Although not explicitly stated, except Barrett and Sutrisna (2009) who assumed the critical realism paradigm, all the other sociological studies fall into one or blend of constructivism, interpretativism, and hermeneutic-emancipation paradigms.

Although not reviewed in this paper, limited use of discourse analysis (Kao, Green, and Larsen 2009) and ethnomethodology strategies (Hugill 2001, c.f. Gorse and Emmitt 2009; Rooke, Koskela, and Kagioglou, 2009) to study informality is evident in the literature.

Discourse analysis, phenomenology and ethnomethodology are focused on understanding realities based on the use of language in written or oral form. These strategies are closely aligned to the interpretativist paradigm. Discourse analysis can enlighten the different types of informal structures of the language used by different project team members (e.g. architect, contractor, engineering talks). The phenomenology and ethnomethodologies, focused on “micro-social interactions- that is interaction on a small scale, between individuals or within small groups” (Seale, 1999 p. 30) can also provide different lenses to study informality as a social construct.

The discourse analysis, phenomenology and ethnomethodology in the context of constructivism, interpretativism and hermeneutic emancipation paradigms can provide a sound base to develop an in-depth understanding of informalities through the use of language. This enables transformation of (or liberation from) the traditionally held beliefs and practices underpinning informality in construction (Alvesson and Willmott 1992).

The use of semiotics could deal with analysis of structures, generative mechanisms and practices beyond language. This can provide an alternative to critical theorists who reject the use of discourse strategies to explain causality, keeping in line with the hermeneutic emancipation tradition. Therefore, semiotic strategies, conceived within the critical realism paradigm could offer a better research approach to study informality enabling causal analysis while maintaining some the rich attributes of non-positivist paradigms (Fairclough, Jessop and Sayer, 2004).

CONCLUSIONS

The complexity in project environments can lead to emergence of informality or vice versa- that could create paradoxes. This paper suggests that studying informalities can in part enable identifying paradoxes. This paper explored three interrelated aspects critical for designing research approaches to study ‘informality’. Four key dimensions were identified in conceptualising ‘informality’ research: the discipline context (economics or sociology), nature of the research issues, ethical/legal dimensions and visibility of the informality. This is established Processes associated the conceptual and operational research designed is also discussed. The methodological process involves identifying a paradigm(s) within which the research is conceptualised. This will influence the way the strategies and research methods are used for collecting and analysing data. Practical (ethical and operational) considerations of conceptual research design are paramount for meaningful outcomes. A number of methodological taxonomies, in studying different informality research issues, are identified from existing literature. It is evident (within the limited observations) that the case study strategy, ethnography and action research, conceived in the tradition of interpretative/constructivism/hermeneutic emancipation paradigm are used to study informality from a sociological perspective. Moreover, it is also evident the critical realism could prove to be worthwhile paradigm alternatives to study informality in construction. Furthermore, it is proposed that the alternative methodological lenses such as ethno-methodology, phenomenology and semiotics could add richness to the of informality studies. This paper shy’s away from prescribing the best approach to study different informality issues. Numerous probable combinations of research taxonomies suggest that developing a prescriptive approach to constructing a research methodology to study informality (distinctively as a social phenomenon) is naive.

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