TITLE: AN EXPLORATION OF THE INNOVATIVE PRACTICES AND CHALLENGES OF FREELANCERS IN THE UK CONSTRUCTION SECTOR

Abstract

There is broad consensus on the value of entrepreneurship as a driver of enhancing productivity, social equality and mobility in society. Likewise, there is growing importance placed upon measuring and communicating social value in the United Kingdom (UK) construction industry (Raiden et al., 2019). Burke (2015) stated that in this industry, freelance workers increasingly using entrepreneurial and innovative practices to circumvent Government policies that would eliminate their crucial economic contribution. In light of the current skills shortage burdening the construction industry, this research engages with the concept of enhancing social and public value by promoting effective, innovative entrepreneurial practices that can help improve the employment horizon by offering valuable skills to aspects of society that would have otherwise remained under-utilised. This also supports the current Social Mobility Commission's agenda of promoting nationwide equity through meaningful employment and encompasses the 'levelling up' agenda presented in the 2021 Queen's Speech.

The construction industry has received constant criticism regarding innovation and productivity for decades; for example, The Famer Report (2016) '*Modernise or Die*' criticised the industry for its lack of innovative practices in improving productivity and the sector as a whole. Moreover, inefficiencies of this sector were also highlighted in both Latham Report (1994) and the Egan (1998) report, indicating poor communication, lack of collaboration amongst project teams, and an absence of safe and decent working conditions. However, such reports have yet spurned the intended improvements for the industry. With an increased level of complexity, the industry has become more fragmented. For tax purposes, the industry evolved to create self-employment techniques whereby small and micro construction firms were presented as independent contractors while working for the same principal contractors from project to project. This was labelled as bogus or false self-employment. Thus, the responsibility of a small or micro firm surviving lies on the owner-managers as they try to survive in the gig economy, i.e., every project, as a result, becomes a 'solo gig' they must execute while looking for their next project. Specifically, Burke (2012) considers freelancers remain under-studied and under-appreciated economic actors in the current British economy despite their critical economic roles, due to their pivotal role has just emerged in the past three decades in the knowledge and innovation-driven economy.

Although freelancers share certain characteristics with project managers and site managers, their entire economic function is not adequately represented when examined as subsets of either group. Burke (2011) argued that freelancers are distinct economic actors who perform economic tasks which neither project managers nor site managers perform. Hence, this paper aims to explore innovation and innovative practices adopted by freelancers (small and micro firms) in the UK construction sector. It also uncovers challenges faced by the industry and the freelancers in the 'gig economy'.

As self-employed teams, the small and micro firms operate hypothetically as freelancers, but most seek to establish long-term working relationships with main contractors who can offer the sustainable work needed to stay afloat and thrive as a business. We explore the complex relationships that exist in the industry between small working teams and, more importantly, the relationships among the actors in this ecosystem (e.g. professionals, architects, project managers, quantity surveyors and skilled trades: bricklayers, joiners, electricians). Some of the subtle nuances in such relationships are the recruitment strategies implemented, performance review processes,

trust and support amongst teams and ensuring longevity. While previous research have overlooked the innovative approaches adopted by a small or micro firm to thrive in such a competitive industry, this research endeavours to theorise such strategies. Furthermore, practices of small and micro construction firms are often classified as informal and, as such, tend to be discounted as innovative and effective.

Using a qualitative research approach, multiple ethnographic case studies were conducted on seven different construction projects. Data collection instruments included semi-structured interviews, non-participant observations and focus group discussions. Thematic analysis was conducted using QSR NVivo in generating codes for the in-depth data analysis, including themes reviewed from the literature and emerging themes identified through the data collection process and initial data analysis.

Initial findings on innovative practices adopted by small and micro firms include experienced workers utilising tacit knowledge in delivering experiential learning to newer workers on less complex tasks. Hence, circumventing the traditional formal training systems and processes, which are often bureaucratic and less efficient, while ensuring productivity is not significantly affected. Safety practices on site are designed to be reflective of emerging situations, thereby allowing pragmatic solutions to be implemented immediately. In contrast, atypical safety issues on larger projects and their potential solutions require authorisation from managers who are often removed from the situations and lack the familiarity of the ongoing issues. This creates a two-fold issue, i.e., firstly, the time lost in gaining approval for the solution and secondly, a solution that may not address the problem appropriately. Moreover, unorthodox recruitment methods prior to the formal contractual processes were used to ensure that the 'right' workers who are already vetted through techniques were recruited. 'Word of mouth' is crucial in the recruitment phase, and a worker can fail based on the recommendation (or lack of) from other workers. In addition, the owner-mangers of these small firms build informal alliances with project managers and site managers in order to ensure a long-term relationship can sustain further project awards. As subcontractors, they have to submit tenders to be included in bids; however, their established relationships with the principal contractors often result that they can be offered a lenient review on the bureaucratic aspects as they are known to be able to execute the jobs successfully even though their 'paperwork' may have gaps.

Furthermore, the small and micro firms form working bonds with other teams on site and support each other to move from project to project collaboratively and ensure the continuity of the established familiarity and networks. The key challenges to innovative practices adopted by the small and micro firms are the lack of recognition by principal contractors and policymakers. This thus suppresses their 'good' practices from being included in best practice conversations. Large principal contractors have often argued that the inability to capture the informal practices used by small and micro firms gives way to liabilities as there is less scrutiny on their work practices. This includes the accountability that comes with formalised work procedures.

This paper offers a much-needed contribution to the construction industry by exploring the critical insight of innovative practices adopted, which may benefit other fields with relatable characteristics. It uncovers the employment challenges, especially the aspects of skills shortage faced by the industry and have often been overlooked despite it accounts for more than 90% of the workforce and employs 7% of the national labour force. It also has implications for policymakers seeking to improve employment in general and in the construction sector, in particular. It also offers theoretical contributions to the academic understanding of innovative practices adopted by freelancers in small and micro firms as they endeavour to thrive in the construction sector.

The findings contribute to the government's 'levelling up' agenda, which seeks to improve employment records and enhance social mobility, significantly being adversely impacted by BREXIT and coronavirus pandemic. Moreover, such an understanding may be applicable to other sectors that rely heavily on freelancers, e.g., the events industry.

Keywords: Freelancers; Shared Economy; Innovation; UK Construction Industry; Skills and Employment

1. Introduction

The term entrepreneurship has been used inconsistently (Bennett and Dann, 2000): it ranges from indicating small business ownership, self-employment through freelance work, the use of innovative approaches to approach market opportunities (Schumpeter, 1934). Moreover, Welter (2011) highlighted that entrepreneurship is contextual. The gig economy markets entrepreneurship by promising a flexible, self-directed workplace, and limitless earnings can be at their fingertips through app-enabled work (Ravenelle, 2019). While risk and autonomy are commonly associated with entrepreneurship and found in gig work (Ravenelle, 2017; Smith, 2016), freelancers and independent contractors often face restrictive workplace policies that appear to be at odds with the workplace autonomy inherent in entrepreneurship. However, van de Born and van Witteloostuijn (2013) defined freelancers are a hybrid of employees and entrepreneurs. On the one hand, they are employees because large companies hire them to work on a specific project for a specific period.

On the other hand, they also work as entrepreneurs for their rewards without any organisational security or assistance. This paper utilises Cantillon's (1755/1931) original definition of an entrepreneur as an individual engaged in self-employment. We define entrepreneurs as freelancers who are independent contractors or individuals who work for a company.

There is broad consensus on the value of entrepreneurship as a driver of enhancing productivity, social equality and mobility in society. This is further enhanced by the changing patterns of the modern workplace with innovation such as industry 4.0 and the internet of things (IoT) setting new standards and identifying new opportunities regarding how work is completed and communicated (Yang et al., 2019). Shared economy and coworking space are becoming an emerging and more acceptable approach for young digital nomads and knowledge workers (Morisson, 2019), and as an intentioned collaboration between independent workers (Waters-Lynch and Potts, 2017). Likewise, in the freelance marketplaces, different types of projects are posted related to different fields, skills and professions, typically related to information technology and programming field where the internet is a huge enabler and nature of the work involved.

The construction industry produces a nation's infrastructure to support economic growth and is also one of the main drivers of economic growth (Chiang et al., 2015). Likewise, there is growing importance placed upon measuring and communicating social value in the UK construction industry (Raiden et al., 2019). The scholarly literature demonstrates that the construction industry has a significant impact on the environment (Chan et al., 2009; Chen et al., 2010; Shen et al., 2007), as well as on social and economic life (Darko and Chan, 2017; Geng et al., 2012). However, the construction industry has received continuous criticism regarding innovation and productivity for decades. For example, The Famer Report (2016) '*Modernise or Die*' criticised the industry for its lack of innovative practices in improving productivity and the sector as a whole.

Moreover, inefficiencies of this sector were also highlighted in both Latham Report (1994) and the Egan (1998) report, indicating poor communications, lack of collaboration amongst project teams, and an absence of safe and decent working conditions. However, such reports have yet spurned the intended improvements for the industry. With an increased level of complexity, the industry has become more fragmented. For tax purposes, the industry evolved to create self-employment techniques whereby small and micro construction firms were presented as independent contractors while working for the same principal contractors, labelled as bogus or false self-employment. Thus, the responsibility of a small or micro firm surviving lies on the owner-managers as they try to survive in the gig economy, that is, execute every project as a 'solo gig' while looking for their next project.

The gig economy promises to bring entrepreneurship to the masses, yet little is known of the role and impact on recruiting and sustaining independent workers in general and the construction sector. One of the main challenges is that the construction supply chain (CSC) is very fragmented and typically involve tens to hundreds of firms supplying materials, components and a wide range of construction services (Cheng et al., 2010). Hundreds of agents played parts in the ecosystems, such as Project Managers, Main Contractors, Architects, Quantity Surveyors, Structural Engineers, M and E Engineers, Sub-Contractors, Component manufacturers (Saini et al., 2019). We are aware of the negative outcome of such fragmentation; we also consider this fragmentation to enable small firms to contribute and survive in the sector. Burke (2015) stated that freelance workers increasingly use entrepreneurial and innovative practices to circumvent Government policies that eliminate their crucial economic contribution.

Moreover, a negative awareness of improvement in skills of workforce and increase of exploiting skills is recorded. In light of the current skills shortage burdening the construction industry, this research engages with the concept of enhancing social and public value by promoting effective, innovative entrepreneurial practices that can help improve the employment horizon by offering valuable skills to aspects of society that would have otherwise remained underutilised. This also supports the current Social Mobility Commission's agenda of promoting nationwide equity through meaningful employment and encompasses the 'levelling up' agenda presented in the 2021 Queen's Speech.

In line with Greenwood et al. (2011), this research assumed that within different contexts, both at the personal and social level, a variety of actors with different reasons, logic and self-perceptions of their entrepreneurial actions should exist. Our study widens the picture of different groups of "everyday entrepreneurs" (Welter et al. 2017) and enhances the understanding of the enterprising of ordinary people (Gelderen 2000; Mueller et al. 2012) in contemporary societies within the UK construction sector. Specifically, Burke (2012) considers freelancers remain under-studied and under-appreciated economic actors in the current British economy despite their critical economic roles, due to their pivotal role has just emerged in the past three decades in the knowledge and innovation-driven economy.

The aim and added value of this paper consist of exploring innovative approaches and practices in the UK construction sector used by freelancers to secure and sustain contracts within construction projects and manage contractor-client relationships. First of all, the study contributes to exploring new ways and practices among freelancers in the UK construction industry, bolstering the well-known concept of entrepreneurship variety (Gartner 1989) and innovations (Bygballe and Ingemansson, 2014). Secondly, it demonstrates how micro-environmental factors and major societal changes interact to shape entrepreneurial aspirations. (Boyd and Vozikis, 1994). Third, it widens the use of phenomenon-driven research, which asks questions and frames study in terms of the phenomenon's importance and the lack of a plausible existing theory (Eisenhardt and Graebner, 2007) by providing a contextual understanding.

This paper has theoretical implications for both gig economy workers and managers. It also has practical implications for how various actors in the ecosystems in the construction sector can encourage entrepreneurship and innovation. It uncovers the employment challenges, especially the aspects of skills shortage faced by the industry and have often been overlooked despite it accounts for more than 90% of the workforce and employs 7% of the national labour force. It also has implications for policymakers in seeking improved employment in general and in the construction sector. The findings contribute to the government's 'levelling up' agenda, which seeks to improve

employment records and enhance social mobility, significantly being adversely impacted by BREXIT and coronavirus pandemic.

Our research questions are as follows: what are the specific innovative approaches and practices used by freelancers in the UK construction sector in securing a contract and sustaining client relationships? What are the roles of personal factors, human capital and the social context in understanding these freelancers and their social values? What are the challenges of the freelancers in the UK construction sector, and what practical advice can be recommended? To answer these questions, a qualitative research approach was used through multiple ethnographic case studies that were conducted on seven different construction projects.

The remainder of this paper is organised as follows. Section 2 presents our theoretical concepts and literature review. We describe data and methodology in Section 3. Empirical findings and results are discussed in Section 4. We conclude the paper with remarks and its relevance to entrepreneurship theory and implications for managers and policymakers.

2. Theoretical concepts and Literature Review

2.1 Knowledge, Innovation and Organisation

Scholars argue that an organisation is a body of knowledge and that this information is significantly more valuable than its physical assets if it is successfully leveraged through innovative practices (Cavusgil et al., 2003; Gonzalez and Melo, 2018). Likewise, Kotabe, Martin and Domoto (2003) considered that organisations no longer rely solely on internal idiosyncrasies for competitiveness but rather through collaborative initiatives within the supply network. It was argued that an organisation's competitiveness is a function of both its capabilities and the supplier network providing inputs to the organisation (Modi and Mabert, 2007), which further prompted the need for knowledge transfer in the supply networks. Echoing this, Monczka et al. (2010) argued that innovative organisations that have relied on internal research and development are increasingly relying on external suppliers for innovation as part of their competitive strategies and leveraged through collaboration between buyers and suppliers.

Knowledge transfer (KT) is how an organisation knowledge, skills, ideas, and experiences are exchanged between a buyer and a supplier. (Zhao, 2013) and, in turn, improve the performance. The concept of KT and knowledge management (KM) has been extended to the field of supply chain management in recent years. Knowledge exists in tangible and intangible forms that can be explained and not be explained, known as explicit and tacit knowledge, respectively (Egbu and Robinson, 2005). Chugh (2017) highlights that it is important for organisations to identify where this knowledge is located so that it can be exploited for organisational success. Tacit knowledge represents knowledge based on the experience of individuals, expressed in human actions in the form of evaluation attitudes, points of view, commitments and motivation (Nonaka et al., 2000). In contrast, explicit knowledge is codifiable knowledge that is inherent in non-human storehouses, including organisational manuals, documents, and databases (Pathirage et al., 2008). In the context of supply-buyer relationships, Zhao (2013) outlines that tacit knowledge begins with individuals such as a member of the buyer organisation (e.g. a design engineer), it is then transformed through collaboration (e.g. new product development project) into the entire system of the buyer and supplier.

Formal education provides individuals with explicit knowledge in the construction industry, as it does in any other environment (Bartholomew, 2008). However, the knowledge they need to become effective professionals or tradesmen comes later from practice, which falls under the tacit aspect of

knowledge. ‘Tacitness’ is a matter of degree, and ‘we all know more than we can tell’ (Bartholomew, 2008, p.22), which mirrors the early argument made by Polanyi (1966), who referred to ‘tacit knowing’ as a process rather than a form of knowledge. Winter and Lasch (2016) articulated that supplier innovation entails improvement in the product and processes that result in efficiencies and responsive delivery due to tacit knowledge application by the supplier.

Despite tacit knowledge being critical to organisational innovation and competitiveness, it has not been thoroughly examined within the buyer-supplier collaboration context (Pérez-Salazar et al., 2017). Previous research on tacit knowledge transfer through research and development (R&D) has predominantly focussed on the corporate sector, disregarding the supply chain context (Chugh, 2017). Moreover, innovation practices differ widely from one organisation to another, and it was argued that traditional ways of working in construction generated many problems associated with fragmentation in CSCs, which hinders the integration of construction knowledge (Nasrun et al., 2014).

2.2 Freelancers, Entrepreneurship and Construction Industry

Freelance marketplaces offer a diverse range of freelancers, as well as many types of projects relating to various disciplines, skills, and professions. They may establish a lucrative independent company with little capital and the freedom to work virtually anywhere and at any time (Walter, 2013). Freelance is defined as an intersection of the categories of ‘self-employment’ and ‘entrepreneurship’. It is a type of self-employment and is characterised by an individual working without a long-term contract and being hired to perform just a particular type of work (Baitenizov and Patlasov, 2016). Typically, they are associated with a generally high intellectual potential and actively using modern information, communication and other technologies, and are the representatives of the creative class (Florida, 2002). In the late 20th century, freelance was extended and used for skilled services such as graphic design, advertising, marketing, etc.

A study by Bögenhold et al. (2014) shows that the categories of entrepreneurship, self-employment and freelance intersect and complement each other. Self-employment is often understood as working for oneself, the simplest form of entrepreneurial activity. One of the forms of self-employment that is being addressed in such a broad sense is freelance. A freelancer is a person working without a long-term contract and hired to perform just a certain type of work (Baitenizov and Patlasov, 2016). The scope of the term “freelancer” is limited to professional work in the sphere of highly qualified services, the provision of which is based primarily on information and knowledge. Hence, freelance is perceived as a new integrated form of entrepreneurship and self-employment embedded in innovative systems. However, in reviewing the literature on self-employment and freelance between 1970-2017 for nearly four decades, less than 0.01% of all innovation studies concern the subject of freelance (Baitenizov et al., 2019).

In an ever-growing competitive business environment, organisations are forced to innovate. Winch and Courtney (2007), based on Howells (2006), construed the role of innovation brokers within the construction sector and defined innovation brokers as organisations that act in a liaison role between the sources of new ideas and the users of those ideas. They can act as information intermediaries and helping firms to become aware of emerging technologies, capabilities and competencies (Blayse and Manley 2004, p.148). However, due to its products’ project-based and technology-intensive nature, the construction sector struggles to accomplish what other sectors managed to achieve (Haugbolle et al., 2015).

2.3 Innovation and culture

Innovative practices may be conceptualised as rational actions that businesses carry out to overcome negative operational and other recurring challenges and their survival. Although there is a substantial body of literature on the subject of innovation delivery by construction firms, it tends to focus on large businesses, leaving the experience of SMEs largely unreported. In smaller firms, understanding innovation is not easy to comprehend without a visible organisational culture that promotes the firm to innovate.

Innovation frequently occurs by heuristic adoption in the construction industry and can range from gradual to radical or discontinuous in nature, depending on the degree of departure from current practice and the interconnectedness to other components and systems (Slaughter 1998). Schein (2004) articulated three cultural manifestations levels: artefacts, espoused values and beliefs, and underlying assumptions. Schein's approach allows an understanding of organisational cultures in small firms and makes it easy to explore the relationship between subcultures, environmental and the broader industry challenges. That is, this perspective enables an understanding of the relationship between innovation-building areas, including the firm's immediate environment and internal integration involving collective identity and work practices. Janicijevic (2012) suggests that a firm's culture affects the organisation's proclivity for innovation and the technique with which it innovates, and consequently the outcome of such efforts. Pohlmann et al. (2005) stress the importance of culture in influencing innovation processes within an organisation and its role in driving the innovation processes and systems.

Furthermore, Satsomboon and Pruetipibultham (2014) explain that the organisational culture connects business strategy, its adoption and management capability to innovate (Lijauco et al., 2019). Finding a balance between these key factors tend to be the deciding factor in ensuring a competitive edge or survival mechanism for most organisations (Janicijevic, 2012). Thus, innovation is culturally path-dependent (Pohlmann 2005), and understanding and implementing changes connected with innovation requires understanding the cultural environment (Orlikowski and Barley 2001).

In construction firms, projects entail a range of interactions with diverse stakeholders at multiple levels throughout the company, which is a necessary component of improved innovation performance. However, Kajewski and Weippert (2010) argue that the construction industry has an extremely low degree of trust, a reluctance to share knowledge and experiences, a deep-seated aversion to change and various subcultures, each with its perceptions, beliefs, values, and attitudes toward particular advances. Innovation is viewed as a dynamic and multidimensional process occurring within an organisation or social system in the industry and is associated with organisational culture in research (Matinaro and Liu, 2016).

As Nonaka and Tecce (2001) argue, innovation involves a complex process of managing information and knowledge within organisations, emphasising the inter-organisational collaboration between internal and external organisations. Since the effectiveness of innovative practice is impacted by the cultural context in which it is generated (Gajendran and Brewer, 2012), it means that to innovate, small and micro construction firms must focus not only on innovation but also on creating and maintaining settings that foster innovation through the development of relevant cultures.

The complexity of generating innovation in the construction industry results from the industry's unique characteristics compared to others (Bygballe and Ingnemasson, 2014; Matinaro and Liu,

2015). For an industry, primarily small and micro firms, that relies on collaboration among key stakeholders to ensure effectiveness, the level of innovation is either understudied or not effective (Matinaro and Liu, 2016).

2.4 Recruitment practices in construction firms

In addressing innovation in the construction sector, one of the principal areas requiring attention is recruitment. Hueman et al. (2007) emphasise the importance of human resource management practices in supporting a firm's need to survive in challenging periods. That is, the key variables underpinning this factor, such as workforce training and retraining, staff layoff/ downsizing/freezing staff recruitment, often constitute firms' initial responses to threats to their existence. However, Erlich (2021) argues that the construction industry varies from other significant industries because it relies on a long-standing subcontracting structure. This can be likened to the gig economy, where contractual and freelancers are hired instead of full-time workers (Goswami, 2020). Friedman (2014) mentioned that observers often applaud the rise of the gig economy because it represents the aspirations of a new, entrepreneurial generation of ambitious individuals. It is important to note that whether a worker in the gig economy may be considered an employee rather than an independent contractor is significant for various government and employment laws. In general, employees enjoy the protections and benefits of such laws, whereas independent contractors are not covered.

Nonetheless, it is important to note that the Covid-19 pandemic and the UK's exit from the EU has boosted the gig economy not mainly due to the higher demand from society but partially due to job losses in the formal sectors. There is little doubt that gig work may appeal to individuals for whom it provides the flexibility to better match their skills to work projects. For example, Hurst and Pugsley (2011) suggest that self-employed individuals or groups benefit from significant non-monetary advantages such as being their own boss, establishing their own schedule, and so on. However, Burke (2011) points out that freelance employees are examples of such cohorts widely used in the construction business, albeit not for their creative entrepreneurial qualities; instead, freelance workers in the construction industry provide routine labour skills. Furthermore, although freelancers may benefit from their work arrangements, Burke argues that they contribute in their own right to entrepreneurial performance by enabling de-risking methods, decreasing financial limitations, increasing entrepreneurial strategy agility, and assisting small and micro construction firms.

3. Research methodology

An overall qualitative methodology was adopted for the research. An interpretivist ideology was utilised in the data analysis. These approaches were used in order to gain a rich and in-depth understanding of the bigger picture (Saunders et al., 2019). Multiple ethnographic case studies were carried out with seven micro construction firms working on different projects. Under this approach, open-ended interviews and explorative observations are replaced with condensed equivalents that focus on specific propositions and/or issues of interest identified from existing theory and relevant literature (Baines and Cunningham, 2013). The ethnographies were conducted on five sites in the East Midlands and two in the South East region of the UK, with each one lasting up to two days. The East Midlands was chosen as a rapidly expanding sector for construction, while the South East region was also chosen due to it being at the pinnacle of economic activities in the country and, by extension, construction projects.

Some of the micro-firms studied worked as sole contractors on some projects, while other micro-firms worked as subcontractors on larger projects. This offered a variety of views and a better understanding of the different situations that some micro-firms may find themselves in. The

research design contributed to a better understanding of the participants' cultural formation and negotiations, as well as the generation of differences (if any), labelling of deviations, and other relevant variations in organisational practices (Riain, 2009). Observations were unstructured and sought to consider various interactions between workers relating to training, communication, and leadership practices.

Semi-structured interview questions were designed to elicit workers views on how micro-firms strive and what makes them unique in their sector. This paper does not present data for individuals but uses the chosen micro-firm as the unit of analysis. This further helped in the overall understanding of the innovative practices of micro construction firms. Data collection was undertaken using audio recorders and fieldnotes. More importantly, some crucial information was collected through informal conversations with workers as they carried out their day to day tasks. A thematic analysis was conducted after a verbatim data transcription. The ethnographic data was collected before the Covid-19 pandemic, and as such, no extraordinary safety protocols were administered.

4. Findings and analysis

The profile of the participants offered a wide range of experiences to be taken into consideration. Although the profile below shows only some of the workers, due to the ethnographic data collection, more data was collected from other members of the team although not presented in the table.

Table 1: Overview of case studies

Site code	Region of operation	Type of work	Years of experience
EM1	East Midlands	Refurbishments	1 – 17
EM2	East Midlands	Bricklayers	8 – 28
EM3	East Midlands	New builds	14 – 21
EM4	East Midlands	Steelworks and groundworks	10 – 20
EM5	East Midlands	New builds	14 – 38
SE6	South East	Temporary structures	9 – 20
SE7	South East	General builders	15 – 21

Data is presented using site code names and not the particular individuals. Narratives will, however, use pseudonyms of individuals to enhance the story being told.

Theme 1: Freelance in the UK Construction sector – general practice

Freelancing in the construction sector

In the freelance work sector, longevity and job security is always a significant concern. Small and micro firms always strive to ensure that future jobs are secured no matter the contractual arrangements. Many factors determine whether they are invited back by the main contractors, including compatibility, budget control, keeping to time, etc.

The complexity of the construction sector cannot be overstated. Small and micro firms, as stated, work from project to project and are traditionally not permanently employed by the principal contractors. They are contractually employed based on a given contract. As such, new contracts are

drawn every time another project is undertaken. Both the principal contractor and the subcontractors try to maintain the teams they work with in order to ensure continuity. In many instances, as highlighted by the participants, principal contractors retain contract documentation from the micro firms (subcontractors) as their working relationships continue from one project to the next. Although the owner-managers of these micro-firms hoped for continuity in contractual arrangements with the principal contractors, they all shared concern about the possibility of it coming to an end for various reasons, including '*[diminished] competitive advantage'*, '*lack of large projects on the market*', '*principal contractor folding*' and '*fallout between parties*'.

Through the site visits, a site manager from SE6 stated that '*If the teams all know how they all work with each other, and they know the manner of how people lift things up. Example, if they're lifting something and they say one, two, three, some people lift on one some people lift on three. So continuity of teams is a significant advantage'*. He, as such, highlights nuances that only people who would have a continuous working relationship would consider. This is not only good for effective project completion but, more importantly, overall site safety. Although external stakeholders (e.g., project clients) may not see the difference in working teams, the micro firm workers consider themselves independent groups working on the same projects.

Principal contractor and subcontractor relationships

One of the points that were raised as possibly ending the contractual arrangement was principal and subcontractor arrangements, particularly creating a good working relationship. Even though projects have an overarching goal, subcontractors have their own subgoals, e.g. bricklayers have targets of completing their external envelopes or constructing the external walls. They relied on principal contractors for some input. Some were '*happier'* when the site managers who represent the principal contractors would offer minimal input once the overall scope of works had been established. At EM4, the following was stated about their current principal contractors: '*They're quite good really. I mean they come with tickets they tell you everything is fine on it. I pass them over to our machine driver to sign to say he's happy with it and there's nothing wrong with it'. He was happy to gain approval to carry on with the work or vice versa*'. However, they believed their roles should be respected as professionals and were very uncomfortable with any form of micromanagement that would come from the site managers.

In terms of communication with the principal contractors, it was evident that most micro-firms had one person that represented their team when they were interacting with the principal contractor or even other micro-firms on site, especially when it was related to work activities. They, however, were very friendly with one another during their lunch breaks in the canteen or even making jokes while working near one another, e.g., electricians working in the same space with general builders putting up partition walls. This behaviour was observed on most sites. However, when site managers tried instructing workers on doing something they believed was contrary to what their leader had pointed out, they had to wait for the leader to approve this.

To further highlight the hierarchy or channels created between micro firms and their principal contractors, the following was revealed by an owner-manager: '*I always say if anyone's got a problem or if you aren't sure about anything, you ask [someone with experience] before you do anything. You ain't sure of anything, if you think it's safe or you're not sure it's safe, you just ask*'. - EM4. While such statements are not made to undermine site managers or representatives of the principal contractor, it is understandable how this would reinforce the need for approval from the leader in the micro firm. Understandably, micro firms, although working towards the overarching aim of project completion, have their own targets, e.g. bricklayers would primarily want to finish the

external walls they have been set out to complete. The figure below sums up the typical interaction between the micro firms and other stakeholders in the projects.

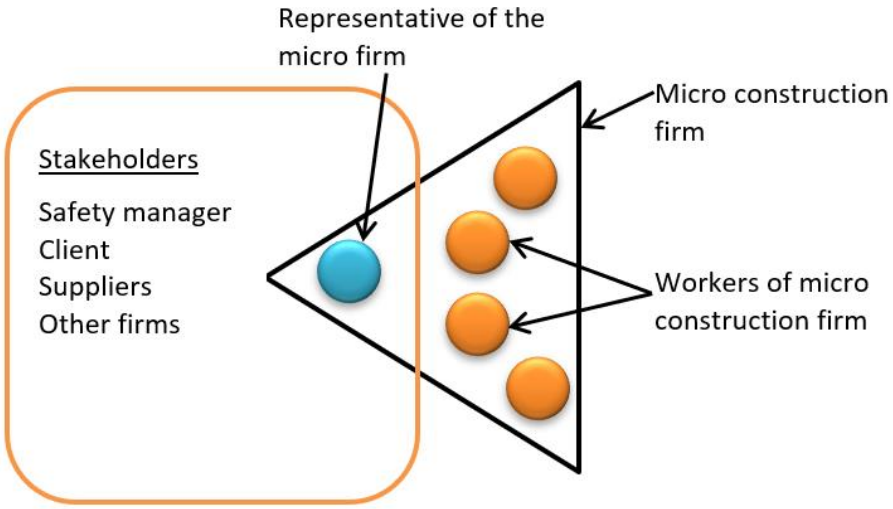

Figure 1: Interaction between small construction firms and stakeholders

It is important to highlight that the team representative is not always the owner-manager. However, the representatives always had a vast amount of experience in the industry. Furthermore, in some instances, different people would represent the team in different situations. For example, in EM2, another experienced worker was always dealing with the site manager on safety matters. When probed further, it was revealed that he had worked on numerous large projects in different roles, so it had become his default role to interpret what the principal contractor wanted from them, i.e., more familiar with large contractor policies etc. In that same group, the owner described his role as securing the jobs (contracts).

Theme 2: Organisational culture of micro firms – recruitment and site practice

Organisational cultures of micro firms

Micro firms are fundamentally built on informal structures and practices. There are many reasons attributed to this. First and foremost, micro construction firms have histories as family businesses. The formation of micro firms has traditionally been set up to require minimal layers and structures in terms of hierarchy and independent roles. On the plus side, it will be redundant to have a human resources manager in a business that employs five people. However, it will be apparent that one person will be responsible for ensuring that workers are paid. Such roles would have evolved more than officially delegated. Their cultures embody the fundamental definition of culture, i.e. "how we do things". As such when new people join the team (regardless of their level of experience), the owner-manager would usually show them how they operate in general. The following was quoted at EM1: '*Two of [my workers] have never been on my site before so they come in and learn to accept how we do things, how I want them to work and how we go about change and discuss if we don't wanna do that one. Erm, all the other guys have worked for me and know what my expectations are*'. This induction approach is informal and allows the new member to question practices. Unfortunately, if such a process is formalised, the new workers are reluctant to question practices that they deem fixed and immovable, i.e. who am I to question what is set in stone?.

The cohesion amongst the workers was observed in many interactions. They spoke about personal/family lives with one another, and this highlighted the absence of barriers and closeness of the team members. Also, when questions were asked, the workers tended to use words such as '*we'*, '*us'*, '*our'* and other collective words to emphasise their communal nature. Having identified how unified these teams appeared, it was important to understand how they brought on new members, i.e. recruitment.

Recruitment

In line with the informal approaches indicated as practised by micro firms, their recruitment process also embodies this approach. Word-of-mouth is the key technique that is adopted.

'*When we need a member to join our gang, we put out the word that we need someone with a particular skill. But if none of the guys in the gang knows the person who wants the job, we start wondering why. And then we ask other people we know whether they also know him and if they do, we'll ask about him as a person and about him as a worker*' – SE6.

The vetting process that they utilise is very effective in identifying compatibility. When recruiting new members, the worker's experience can be objectively established, but whether the person is well-suited for their team requires more subtle evaluation. Word-of-mouth can offer a background on the person's past behaviour with teammates. Such feedback is more thorough than official references from past employers. Also, people could have a near-perfect résumé, yet their people skills or teamwork could create many issues for the team, thereby disrupting progress.

While on-site with EM1, it was stated that: '*Erm again this is down to the people that you employ to carry out the task really. Erm, there is risk in everything we do in life and not just in the construction industry. Erm, I hope the people are bright enough here to look at situations and decide what the risk actually is and what level of risk it is. And then discuss what we need to make sure we haven't got any or a little or minimise it*'. The teams have other concerns beyond the team compatibility of the new recruits. Safety is a serious concern on most construction sites, and it is crucial that new workers do not take unnecessary risks. More importantly, risks and dangerous situations on construction sites affect people in the work team and other stakeholders. '*We've all got to [be safe] every night. Every time I walk off-site, we can come back the next day*'. – Team leader of EM5. The leaders feel responsible for their workers and will ensure they do not recruit new people who will disrupt this: '*…because you're small size, you're all together. What you do can affect somebody else*' – SE7.

Site practice

It was evident that the workers believed their practices were more efficient than those of the larger firms. Participants who had worked on large firms before were quick to highlight the major differences and emphasise the efficiency in their interactions. '*On a smaller site, you work with everybody all day. Here we've got sparkies sparking all day going on top of everybody so we have talks with them all*' – EM2. Although he believed they had independent goals for their teams, he believed they had to take other micro-firms into consideration and not make their roles any more unsafe or unduly difficult. The leader of EM1 had been a team supervisor for a large firm before, and he stated: '*I feel it's easy to manage at our level because we can talk it through*'. He had concerns about communication in large firms, and the main reason was that workers did not have an equal sense of teamwork and had individualistic tendencies.

At EM2, the owner stated that '*When you get bigger, you don't know everybody personally'*. He added that they did not engage with many subcontractors on sites because he believed each team was focused on their own targets. This statement was supported by another one of his colleagues. They believed they could work safer '*if they kept to themselves*' i.e. minimal interaction with other teams. The team leader of EM4 pointed out that larger firms put more emphasis on bureaucratic processes, and that made work difficult. He also added that it hindered productivity in many areas, particularly with ineffective safety measures. '*Also, the bigger the company, I find personally that you put that much health and safety in you can't do it and it takes you forever to do your job*' (EM4). He added that the bureaucratic addition of safety measures almost indicated that activities were being separated from safety measures. He emphasised that any activity that had to be carried out needed to be executed safely, i.e. no need to separate the two concepts. He also added that that could create some confusion between policies and practices. Workers with smaller firms are under regular support from one another, particularly new and less experienced workers.

Tacit knowledge transfer

Unlike large firms, smaller firms do not have the luxury of sending their workers to train in form settings. Moreover, they believe on-site training is more effective as it presents the challenges that the workers will deal with eventually. However, all experienced workers insisted on ensuring that new workers were always working with someone more experienced, i.e. training. They believed there were certain competencies that they could not teach explicitly. The tacit knowledge being transferred is critical in workers' development. Such knowledge, unfortunately cannot be assessed through formal tests such as the Construction Industry Training Board's Health and Safety Test. While on-site with EM1, an experienced worker was quoted as follows:

'*I don't think you can replicate anything in the classroom that happens on-site. I think you can only be made aware of risks in the classroom… I think when you're on-site, and the environment changes and you have the noise that goes with it and the different trades, different people err that's the experience you need*.' (EM1)

Although training simulations claim to mimic site practices a worker who was only a year on site stated that he had done some formal training and believed his training on site had given him knowledge that he did not acquire in the classroom setting. He believed the controlled conditions limited real-life experiences.

At EM3, this was added: '*Yeah, [construction training] is hands-on*'.

It was also discovered that learning from mistakes was a different experience on site: *'… on-site training because when you get into it, you know what you've done wrong whereas, in the classroom, you don't get the experience they just give you answers.'* – EM1

The other workers were also unable to pinpoint exactly what they do not appreciate about the formal training method, but they only explained that 'site experience' is instead needed to develop skills. This is one of the inexplicable characteristics of tacit knowledge.

Theme 3: Innovation and innovative practice

There are many areas where the workers that were considered in the study believed they were more efficient. Their innovative practices may, however, be frowned up by larger construction firms primarily because they are not defined by formal policies and procedures. In addition, larger firms do not adopt this practice because of the size of their workforce and the history and risk of the construction industry's compensation culture. This has led to a significant fear of legal ramifications

of omissions in workplace arrangement, i.e. workers sign forms of consent for induction, understanding safety procedures etc.; however, such an approach mainly makes their practices procedural rather than a necessity.

Creating a collective culture

One of the key innovative practices adopted by micro firms is their approach to enculturation, i.e., learning cultures and what they entail. This is very important to instil the concept of a common goal in new workers, which fundamentally ensures better participation and improved productivity. While on-site, the following scenario (presented as a narrative) was observed:

Narrative: *During a lunch break on case study one, while all the workers were all having their meals together, one of the newer workers decided to have his meal away from his colleagues. One of the experienced workers on the site left the 'make-shift' dinner table and went to call him to come and join all the others. The older worker did not command this request, but he asked this in a comforting manner.*

The new worker, who would, at this stage, feel like an outsider to the group, decided to eat alone. By inviting him to join the main group, he would essentially feel included in the team. Also, another crucial situation that would happen at this stage was to share personal information with the team as they all did. One reason why it was imperative that he joined the team at the lunch break was that the workers often discussed challenges that they had experienced while working. This rare teaching experience would not be captured if they played individual roles and refused to share. Also, as workers often mentioned, they were unsure how they had learnt certain practices; this was clearly one way to unintentionally pass vital tacit knowledge. This clearly demonstrates a tacit influence on collectiveness.

Leadership skills and effective span of control

One of the critical points raised by most participants was the importance of good leadership and its impact on small working teams. All the leaders acknowledged that smaller teams were a '*luxury'* that larger firms did not have. Knowing their workers and teammates personally was a sense of pride for them. They often merged family matters with work conversations. The leaders were proud of the pseudo-family units they had created.

'… because you know more personally, don't you? When you get bigger, you don't know everybody personally' (EM3 team leader). On an abstract level, it is assumed that having a small team is always easy to manage. From the data analysis, it was clear that the size of the team and the skills of the leaders would have to be inseparable traits if the team wished to be successful. Nasrallah et al. (2015) use mathematical modelling to establish this peculiarity that all these micro-firms seem to be doing as second nature. Leaders and managers of larger firms do not have the personal bond that is exhibited in micro firms. If larger firms want to gain better cooperation amongst workers, they resort to the use of systems and policies. Thereby the resulting relationship is a coercive group and often results in conflicts and fractured relationships. The leaders and other experienced workers had taken roles of protective and father-figure roles in their teams. *'[As a leader] you need to be able to do your own job as well as working with other people with your health and safety in place'*. (EM1).

The leaders of the teams believed the workers were knowledgeable enough to make autonomous decisions. They had empowered their workers to assess and mitigate risks independently. This practice is one that large firms are known to avoid due to the potential legal issues that can come up if workers get injured. As such large firms often have mandatory personal protective equipment

(PPE) usage at all times. The micro-firms observed in this study tended to use the PPE when needed. Their approach is the recommended approach according to the Health and Safety Executive (HSE).

Coincidentally, this display of safety practice by micro and large firms was observed when visiting EM1.

Narrative: *One of the micro firms was adjacent to a large construction site run by a multinational construction firm – even though they were both working for the same client, their projects were completely different. The hoarding separating the two sites was a see-through style, and as such, the workers on both sides could see each other. The workers on the small construction site were not wearing hard hats for all activities, unlike those on the large site. However, some of the workers on the small sites were wearing hard hats, and after enquiry, it was revealed that this was the case because of the activities they were undertaking; that is, their tasks required head protection. However, the policy of the large site dictated that everyone present on site had to wear a hard hat, goggles, gloves, steel toe boots and hi-vis vests, and this had some of their workers confused. They were under the impression that they were working for the same client and technically working on the same piece of land, and hence, the same rules were to apply to both parties. For this reason, some of the workers on the large project protested the act of wearing hard hats for every activity. This issue escalated to a level where the workers refused to work. It took quite some time, and some explanation before the workers understood that their project was different, and for that matter, policies and practices were different.*

Assessing the practices of the micro firm revealed that they were working safely. The workers were using the right PPE at the right time without having to be prompted. Empowering workers will improve productivity and job performance, job satisfaction as a whole, and better commitment to the team. Thus the micro firm workers felt more invested and were willing to do more for the team.

5. Conclusions

This paper has explored the innovative entrepreneurial practices adopted by freelancers, particularly small and micro construction firms when faced with challenges in the gig economy. Seven ethnographic case studies were undertaken to understand the workers of these firms from within their operational settings. This approach enabled a better understanding of the different challenges these freelancers face and their entrepreneurial strategies to circumvent them; hence, we captured and analysed these sufficiently to address the research aim. We are, in some ways, broadening the definition of entrepreneurial activity (Bird and Schjoedt, 2009)

We highlighted the experiences and strategies in practices of these small and micro firms as they manage and embrace ambiguities, from the challenges of the principal contractor and subcontractor relationships and that resulting from various stakeholders. Our findings revealed that these firms adopt innovative methods such as experienced employees using tacit knowledge to provide experiential learning to newer workers on less demanding jobs. Hence, by creating collective cultures and ensuring effective tacit knowledge transfer, these freelancers can overcome the risks of the gig economy ingeniously.

This paper also identified that freelancers are able to establish business continuity in the gig economy through innovative but informal practices, which may often be frowned upon by the larger construction firms due to the latter's size and fear of legal consequences. This leads to one of the key contributions of this paper, which centres on the overlooked but effective innovative and entrepreneurial practices of these small and micro firms; for example, by creating 'family-like'

relationships among their work teams, their workers were empowered to assess and mitigate risks independently. These working relationships with other teams on site enable them to collaborate and migrate from gig to gig, ensuring their familiarity and networks continuity.

Therefore, this paper has practical and theoretical implications for both freelancers and the wider industry. Our findings highlight the significance of small and micro firms' informal but effective entrepreneurial practices in the construction sector and what larger firms can learn from them. The findings of this paper can have a significant impact on innovation policy by encouraging greater entrepreneurship in what is usually seen as a low-innovation business. It sheds vital light on the importance to the industry and broader stakeholders, including policymakers and principal agents, embracing and encouraging the 'good', innovative and entrepreneurial practices that small and micro firms use to facilitate effective knowledge transfer, business continuity, and sustain employment. Hence, it is evident from our study that freelancers in the construction sector enable entrepreneurial and business practices, reducing unnecessary costs and ensuring survival in the gig economy, especially in challenging times.

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