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SME's disinclination towards subcontracting in the public sector markets: an attributional perspective.

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Abstract

Purpose - This study aims to examine the causes of SME' disinclination towards subcontracting in public sector markets. Previous studies have revealed that UK SMEs are reluctant to do business with the public sector through the subcontracting route, but the reasons for this lack of enthusiasm have not been widely researched.

Design/methodology/approach- Drawing on semi-structured interviews with SMEs competing for public contracts in North West England, a qualitative study was performed, from which several themes emerged.

Findings- The findings were synthesised into a framework underpinned by attribution theory, to portray situationally and dispositionally caused factors which were used to interpret SMEs behaviour.

Originality- The paper contributes in a unique way to an emerging discourse on how subcontracting can facilitate the access of SMEs to government procurement spending. It adds to knowledge regarding the explanatory power of attribution theory– from its base in social psychology.

Keywords; SMEs Subcontracting, Public procurement, Government supply chains.

1. Introduction

SMEs can bid for government contracts directly or indirectly through subcontracting opportunities advertised by the main contractor. The focus of this study lies on the issues and challenges associated with SMEs being subcontractors on public sector contracts. Subcontracting can be defined as “a reallocation of production requirements among firms” (Kamien and Li, 1990, p.1354). This involves passing on or giving out part of the obligations under a contract to another party known as a subcontractor. The UK government has long recognised the need to increase business opportunities for SMEs through subcontracting in public procurement (e.g., Booth, 2013; Department of Enterprise, Trade & Employment, 2009; Glover, 2008). In March 2012, the government announced an increase in subcontracting opportunities for SMEs (Cabinet Office, 2012), as part of measures to improve participation in procurement. The rationale behind this action was that SMEs struggle to gain a fair share of public procurement spending and the size of contracts/ tenders often put them at a disadvantage relative to larger firms. Less than 2 years after the government declared its intention to bring more SMEs into its supply chain, procurement spending going indirectly to small firms rose from 9% in the 2012/13 fiscal year to 15% in 2013/14, and then to 16% in 2014/15 before it began to decline (Davis et al. 2018; Cabinet Office, 2019).

In the 2018/19 fiscal year, 14.1% of public sector spending went indirectly through subcontracting to small businesses (Cabinet Office, 2020). The latest available data published by the UK government shows that SMEs are still under-represented in public procurement markets, with only 25.7% of spend going to them in 2018/2019, as against the 33% target by the end of 2022 (Home Office, 2018; Cabinet Office, 2020). Notwithstanding, the current target for Government spending with SMEs is low when compared to their overall contribution to the UK economy through job creation and gross value added. SMEs make up 99% of the 5.7 million businesses in the UK, with a combined turnover of £1.8 trillion (Rhodes, 2017). This accounts for 47% of all private sector turnover and 60% of all private-sector employment in the country (Federation of Small Businesses, 2017). The benefits of increasing SMEs involvement in procurement are numerous, not only for the wider economy in terms of wealth creation and poverty reduction but for public sector organisations. SMEs are catalysts of innovation and capable of providing bespoke solutions to meet public sector’s multiple and complex needs (Madrid-Guijarro *et al.*, 2016).

The public sector can increase supplier competition and boost diversity or inclusion by including SMEs as suppliers, either as direct contractors or via subcontracting. Subcontracting can help to facilitate skill transfer from a large prime contractor to its smaller sub-contractor, enabling them to tender directly in future (Glover, 2008). While it is a well-established fact that subcontracting is a less difficult and more productive route for small firms to win public contracts (Thomassen et al, 2014), the proportion of UK government's spending with SMEs via the supply chain has been declining. Besides, most of the extant research is on the nexus between SMEs and public procurement has been on direct contracting. Hence, more research with a specific focus on sub-contracting is needed. While subcontracting is a very popular phenomenon in the construction industry (Milner, 2019), research into the nature of problems associated with subcontracting in other sectors is limited. The present study seeks to examine

sub-contracting outside the construction sector, allowing us to understand differences in the challenges that face SMEs acting as sub-contractors under different contexts.

In one of the few studies that evaluated barriers to public procurement in the UK, an unwillingness towards subcontracting was reported amongst SMEs (Loader and Norton, 2015), but the study did not give reasons or explanations for this. Understanding the reasons for the reluctance would help policymakers to discover the shortcomings of the current subcontracting policy, from the beneficiaries' perspectives. The present paper seeks to address this gap in research examining the causes of SME disinclination towards subcontracting in the public sector markets. The key research question to be examined in this paper is: What are the key factors discouraging SMEs from participating in public sector subcontracting opportunities in the UK?

When we analysed the literature, two key perspectives emerged to explain the low participation of SMEs in public procurement markets in general. The first relates to the barriers which can be associated with the procurement policy and institutional environments, such as the risk-averse culture prevalent within the public sector and the procurement process which is disadvantageous to small firms (Loader, 2013; PwC, 2011; Quayle and Quayle, 2000). The second relates to a lack of resources and capabilities evident amongst SME suppliers (Loader, 2013; Tammi et al, 2014; Reijonen et al, 2016). This perspective highlights the important role of internal firm resources and capabilities in helping SMEs increase performance in public procurement markets. We draw on attribution theory (Weiner, 1985), to reinforce this idea that SMEs face both external environmental and internal organisational constraints in winning public sector contracts (directly and indirectly). To our knowledge, this is the first study to make the attribution theory central to investigating SME participation in public sector markets. In the next section, we expand on the details of attribution theory and use it to explore SME activity in subcontracting, thereby contributing to the debate on small business utilization in public procurement.

Giving the exploratory nature of the study, we have adopted a qualitative research technique to elicit the views of SME owners/managers, purposively sampled from the North-West region of England. Data was collected through semi-structured interviews to examine SME experiences of subcontracting on public contracts. The paper contributes in a unique way to an emerging discourse on how subcontracting can facilitate the access of SMEs to government procurement spending. It broadens the knowledge regarding the explanatory power of attribution theory— from its base in social psychology.

The remainder of this paper is structured as follows. Section 2 presents the theoretical framework with a literature review on internal and external factors influencing SME participation in subcontracting on public contracts. Section 3 describes the research methodology, sampling, and the use of a semi-structured interview for collecting qualitative data. Section 4 presents the themes emerging from the analysis of qualitative data and discusses the research findings to create a framework. Finally, section 5 presents the conclusion, contributions, and recommendations for future work.

2. Theoretical framework

We adopted a social psychology theory of attribution (Weiner, 1985) to underpin this study. Attribution theory emerged in the early years of the 20th century, through the works of Fritz Heider (1944), and postulates that people are motivated to assign causes to their actions, behaviours, and events. Proponents of the theory (e.g., Weiner, 1985; Mitchell & Green, 2015), argue that there are three broad dimensions of causal beliefs, which influence reactions and expectancy of future success: the locus of causality, stability, and controllability of causality. The locus of causality looked at whether people the causes of behaviour to some internal (dispositional) or external (situational) factors. The stability dimension of causal construct relates to whether the cause is unchangeable or changeable over time, while the controllability dimension relates to whether the cause is personally or externally controllable or uncontrollable (personally or externally). From its origins in social psychology, the application of attribution theory has been extended to business management. It has been used as a lens to investigate education management (Oldenburg et al, 2015), improve understanding of information systems (Snead, 2015), and analysis of athletics performance. While attribution theory has been used to study the predictors of academic achievement, causes of success and failure in sport and human resource management (Hewett et al, 2018) and other fields related to social psychology, it has not been used widely in studies of SMEs participation in public procurement via subcontracting. Hence, we seek to draw on insights from other disciplines to devise a theoretical basis that could enrich this research.

Previous research about academic examinations (e.g., Cortés-Suárez and Sandiford, 2008) has observed that students often attributed failures to factors and circumstances, which were outside their control such as better performance of contestants, lack of luck, the behaviour of teachers. Whereas research in the field of sports revealed that participants who had been successful in competitions, made internal attributions more than others who were unsuccessful (Szczepaniak and Guskowska, 2016). Weiner (1986) suggests that the effort students put into their academic work can be explained by how they perceive their successes and failures. This brings to the for the question: what are the causal attributions for disinclination towards subcontracting on public contracts, as perceived by the SMEs? By identifying attributions in SMEs' experiences, we can more appropriately explain the variety of issues and concerns associated with their participation in subcontracting on public contracts. We would adopt Weiner's attribution model in Figure 1 to guide our literature review on the internal and external factors affecting SMEs participation in subcontracting in public procurement.

Theoretically, the recognition that certain firms' internal resources and capabilities factors influence SME activity in public procurement markets (e.g., Reijonen et al, 2016), fall within the internal causal dimension of attribution theory. In most cases, such internal factors are within a business that can be controlled by the firm. For example, if SME owner-managers think that their inability to participate in subcontracting is due to the lack of requisite skills and experience, they are likely to develop self-help action to address this problem e.g., by attending tender writing training. In addition, there exists a considerable body of literature to explain the institutional environment pressure which could hinder SME participation in public

procurement (e.g., Loader, 2005, 2013). For instance, SMEs can ascribe their inability to participate in subcontracting to external challenges beyond their control, such as difficulties in identifying opportunities in the supply chain, excessive bureaucracy in the selection process and the pro-large firm attitude of public buyers (e.g., Loader, 2013; Flynn and Davis, 2015). These factors can be likened with the external causal dimension of attribution theory, which the SMEs may/may not have control over.

[Insert Figure 1]

3. Methods

3.1. Design and process

Why SMEs are lacking enthusiasms for subcontracting under public procurement is a problem that has not been studied more clearly. Therefore, this exploratory study is intended to generate initial qualitative evidence to help identify factors causing a disinclination towards subcontracting participation amongst SMEs who compete for public sector contracts. We conducted semi-structured interviews with SMEs located in the North West region of England, to unearth their experiences and thoughts about participating in subcontracting arrangements in the public sector context. The participants were recruited through snowballing technique and by word of mouth, using a criterion-based system (Noy, 2008). Participants were eligible if they: (1) are employing not more than 250 employees in line with the UK government's definition of SMEs (Wand & Rhodes, 2014); (2) have experience of competing for contract opportunities in the public sector; and (3) know that subcontracting is an alternative route to access public sector contracts. All participants were required to meet these criteria, to gather the relevant data and determine the representativeness of our sample.

3.2. Data collection

We conducted 25 semi-structured interviews with key decision-makers (owners/managers) from SME firms. Each interview lasted between 40-50 minutes. The interview questions were structured around participants' experiences of tendering for contracts within the public sector, and concerns about involvement in subcontracting to improve access to public contracts. The interview guide was developed in English – examples of the questions included were: “Tell me about your experience with participating in public procurement? (how long have you been participating and in which types of public sector organisations), What are the challenges you faced in involvement in subcontracting? If you have no experience of selling to the public sector through subcontracting, why not? What concerns do you have about this procurement route?” The initial (draft) interview guide was pre-tested with 3 SMEs who compete for public contracts in the UK, 2 public procurement professionals and 1 researcher to assess practicability, legibility, use of language, clarity, and logical flow of the questions.

The use of interviews to collect qualitative data enabled us to gain richer insight into the research aim, as participants were offered opportunities to describe their experiences in their own words. The interview process was also flexible (Silverman, 2013) to enable our participants to elicit their experiences willingly in an informal setting. We adopted the narrative conversational style recommended by Edwards and Holland (2013) and remained open to

discuss the thoughts and ideas of participants. When required, we used clarification probes (e.g., by asking, “what did you mean exactly”?) to foster illustration and clarification of concerns and challenges about involvement in public sector subcontracting. The first three authors jointly conducted the interview and recorded the conversations after obtaining the interviewees' consent. The fourth and fifth authors were responsible for transcribing recorded interviews, and preliminary data cleansing before analysis. After analysing the data collected from a total of 25 participants, saturation was reached as no new information emerged from participants (Silverman 2013), and we stopped the sampling.

3.3. *Data analysis*

All interviews were transcribed verbatim, revised by the interviewers for accuracy, and analysed using thematic analysis (Miles, Huberman, & Saldana, 2013). This technique includes key activities which offer a guide for identifying themes from the data through coding, to capture the richness of data and to assemble the findings into categories for useful discourse. With these, we could make better sense out of the reported opinions of the participants. The emergent themes were compared to identify inconsistencies, which we resolved, and the themes were adjusted before proceeding to the full analysis. This process enabled us to ensure inter-coder reliability and validity based on the extent of agreement between the different coders (Weber, 1990). Thus, enhancing the extent to which the final coding results represent what we intend to measure. The themes synthesised were categorised and discussed. To support the presentation of results in the subsequent section, we selected direct quotes from interview data to represent the words of participants appropriately. Some of these quotes were modified when necessary (as regards grammar and sentence structure), for better clarity (Peláez et al, 2015). To maintain the privacy of participants, we have anonymised and assigned the following codes to their direct quotations: SME1, SME2, SME4, SME 5, [...] SME 25.

4. Results

4.1. *Participants' characteristics*

The SMEs interviewed consisted of eight micro-enterprises, twelve small-enterprises and five medium-sized firms. Participants were recruited across the north-west of England; ten from Manchester, four from Liverpool, three from Ashton-under-Lyne, two from Oldham and Rochdale respectively, and one from Stockport and Trafford, respectively. As the study aims to examine subcontracting in the public sector from an SME perspective, we classified participants experience accordingly: of all the SMEs interviewed, only twelve have previously worked as subcontractors on public projects. Although 8 of the 25 firms have not acted as subcontractors, none of them indicated a lack of experience of public tendering in general. Also, we consider a combination of lived experiences of SMEs (who have acted as sub-contractors) and perceptions of those (who have acted as sub-contractors) very important for gaining broader insight into the causes of disinclination towards subcontracting in the public sector. Table 1 presents the profile of the participant firms, showing the varied characteristics of the sample by distinguishing the firms according to size (i.e., the number of employees) namely micro-sized with less than 9 employees, small-sized with less than 50 employees and medium-sized having not more than 250 employees.

The description of business, locations and experience in public procurement are also presented, attesting to the diversity of the participants. In line with the qualitative exploratory nature of this study, we do not include all these different firm features in our data analysis. Yet, they suggest the possibility to study the differences in involvements in subcontracting by SMEs within the public sector context. Nevertheless, using perspectives from different SMEs enables us to capture common issues and concerns about subcontracting, and we can promote triangulation and increase the credibility and validity of research findings (McDougall, Wagner & MacBryde, 2019).

4.2. *Causes of SMEs' disinclination for subcontracting on public contracts.*

Our analysis reveals six themes relevant to explain reasons for SMEs' disinclination for subcontracting on public contracts: (1) power imbalance, (2) lack of motivation to innovate (3) vulnerability to intellectual property loss, (4) inaccessibility, (5) favouritism, and (6) delayed payment. To shed light on whether some types of firms gave certain themes more prominence over others, Table 2 ticked each of the emergent themes against the 25 interview firms. We included sample quotes that are representative of the emergent themes to make the analysis more explicit.

[Insert Table 2]

4.2.1. *Power imbalance*

All our participants raised concerns about the power imbalance that exists in a subcontracting relationship causing unfair treatment of subcontractors with a consequent negative impact on their profit margins. Both SMEs who have been engaged as subcontracts in public procurement and those with no experience in this area stated that subcontracting is a one-sided symbiotic relationship where the prime contractors benefit greatly from the relationship at the expense of their subcontractors:

"No, it is an absolute disgrace.... If there is one thing I vehemently disagree with, it is having to go through big firms. We stopped working with big firms because of their nastiness, unscrupulous and greed... [] subcontractors are their slaves. It is a shame that this unhealthy act is not reflecting in government's report" (SME 7)

"... subcontracting has provided us with some work, but it also means we take on the delivery at a much-reduced margin as the major bid winner takes the lion's share. "We try to keep the cost down, but the main contractor typically puts a margin on our services by 25% to 50% so we end up with a loss on the job. So, it does directly add value to the public-sector clients but the cost in the end" (SME 21).

These views are not surprising, given that as companies chosen by the government to perform the tasks solicited, prime contractors would want to dictate contract terms with subcontractors, particularly regarding benefit-sharing, and to make a reasonable profit from the time and resources invested in winning the bid. Similar findings have recently been reported from other studies into the sub-contractual relationship in the UK construction (Milner, 2019), which

suggest that small subcontractors often have no bargaining power and must accept the terms specified by prime contractors or risk losing business. Whilst the power imbalance problem can discourage SMEs from seeking to do business with government through subcontracting, it raises important questions as to whether they can protect themselves from being exploited by prime contractors. The size difference between SMEs and large firms can affect relative bargaining power. As found in the previous study (Bibby Financial Services, 2018), SMEs face financial constraint which affects their ability to gain access to and pay for lawyers to assist in negotiating a better subcontract term. Despite the evidence suggesting that subcontracting can facilitate skill transfer from large firms to smaller sub-contractors, and small firms are known to be enthusiastic about skills acquisition (Gessinger, 2009; Carayannis and Sipp, 2005), the tension created by power imbalance also limits the knowledge sharing intentions and behaviours (Sankowska, 2013) between the parties involved in such relationship.

4.2.2. Lack of Innovation motivation

Most of our participant said that they generally are less likely to be motivated to think creatively and develop a new solution that can address the need of the public sector. Rather, they would follow the plans laid down by prime contractors than suggesting new ideas or alternate approaches to improve project performance at large. Although innovation has previously been highlighted as a core competence of small businesses (Georghiou et al., 2014), our findings suggest that there appears to be a tendency for SMEs to be less creative in public procurement subcontracting:

"as a subcontractor, your innovative idea is worthless because you are not free to test it with actual customers in the public sector and it's so frustrating... [] see, there is nothing you can do in this arrangement; you cannot bypass the prime contractor to communicate with the public sector so you're better off keeping the new solution/idea to yourself" (SME 1)

"Subcontracting only allows major firms to plagiarise niche products from smaller firms and then rule them out of the competition. In my opinion, the whole government procurement approach is rigged against us. The truth is small subcontractors can easily be exploited by the prime contractor whom they are usually answerable to and I don't think the government can do anything about it" (SME 10).

One notable reason for the above-mentioned views was that subcontractors often do not have a direct relationship with the contracting body for pitching their innovative ideas, even as members of the public sector supply chain. This is consistent with previous evidence suggesting that lack of interaction with procuring organisations is a factor restricting suppliers' ability to sell innovative products and services to the government (Uyarra et al, 2014). This lack of passion for creativity expressed by our participants signifies a sort of collaborative inertia (Vangen and Huxham 2010), which could generate anger, frustration, and conflicting outputs. In line with other evidence (Crosby, Hart & Torfing, 2017), this issue can have a serious impact on public value creation through subcontracting in public procurement.

4.2.3. Vulnerability to intellectual property loss

The fear of losses from infringements on intellectual property rights was most mentioned as a discouraging factor by participants that have experience in subcontracting on public contracts. Although some of our participants recognised that protection of the intellectual property is critical to the success of small business firms in general, as previously acknowledged by Jensen & Webster (2006), they also narrated their negative experiences about the disclosure of proprietary and trade secrets to prime contractors:

“I've always been hesitant to share new product design/prototype information with any business partner until I can predict how trustworthy the company is. As a matter of fact, we usually ask the other parties to sign a confidentiality agreement or NDA before any technical discussion can happen, either right at the beginning and during project implementation. When enough basis of trust has been laid, we will be more comfortable to share sensitive information with them” (SME 19).

Norton (2011) raised a similar issue, acknowledging the need to protect the intellectual property of subcontractors in public sector contracts. While SMEs can address this problem by engaging the services of intellectual property lawyers to help adequately protect their intangible assets, but they might be unable to afford such services due to their inherent financial constraints. Nevertheless, calculative trust (Saparito et al, 2004) can be deployed as a preventive measure to mitigate inefficiencies in subcontracting relationship and as a strategy to avoid losing valuable proprietary information to the prime contractors. This requires that SMEs should assess the potential rewards and consequences in sharing their IP secrets with prime contractors, progressing only when the transaction pays off.

4.2.4. Inaccessibility

Government procurement in the UK is governed by the Public Contracts Regulation (2015) which requires public entities to implement a bid solicitation process. The process starts with advertising a contract opportunity on Contracts Finder portal (Cabinet Office, 2011) – also known as the one-stop-shop online platform for suppliers to find new procurement opportunities free of charge. Although this might have helped ensure that SMEs suppliers have access to information about a current public contract, there are still concerns about the transparency of opportunities in the supply chain. The theme that describes this idea is labelled inaccessibility. Some of our participants reported having limited visibility of subcontracting opportunities on public sector contracts:

“There are limited opportunities for SMEs to collaborate with large firms through subcontract route.... prime contractors only pay lip service to the needs of the local SME supply chain, they always keep these to themselves. Often, we were made to think that the major firms are more experienced in bid submission and their scale assists their success rate, but they are unable to deliver without then turning to small firms such as ours” (SME 18).

Improving transparency of information for subcontracting would not only benefit SMEs but would help public organisations monitor traceability along the whole supply chain

(Kraisintu and Zhang, 2011). It has previously been reported that some large UK firms have signed up to advertise their government subcontracting opportunities on contracts finder (Booth, 2013). Similarly, a recent Procurement Policy Note (PPN) published by the Crown Commercial Service (Action Note 01/18) introduces new requirements that public authorities increase visibility in supply chain opportunities (Frost, 2018). This specifically permits prime contractors on public contracts to advertise subcontract opportunities on Contracts Finder. While it is too early to tell the impact of this new directive, the government's need to improve efforts to ensure enforcement and compliance to the rule. There is a need for the government to come up with new sanctions or stronger clauses to make sure that indirect supply chain opportunities are transparent and available.

4.2.5. Favouritism

Favouritism in the selection of subcontractors was another dominant reason for SME's disinclination from taking part in subcontracting on public contracts. Overall, participants (both with and without subcontracting experience) were concerned that prime contractors usually prefer to work with sub-contractors who are existing firms in their supply chain, rather than engaging with new firms. This represents a potential barrier for new small businesses and start-ups, accessing subcontract opportunities in public procurement:

“There are some large private organisations that offer a total management solution within certain NHS trusts. These organisations allegedly subcontract work out, but it is very difficult to get hold of the correct person and to become part of their approved supplier list. Since they don't have to comply with procurement rules, nobody knows how they select subcontractors. Often, they only seem to subcontract to the large blue-chip enterprises, which is unfair on small firms” (SME 17).

Recent research has highlighted the existence of undue favouritism in competitive supplier selection and bidding process despite the use of rigid procedures for awarding contracts (Decarolis and Giorgiantonio, 2014), but evidence of such practices in subcontracting is scant. Apart from a lack of clarity on how to connect with public sector organisations (Loader, 2005; Saastamoinen et al., 2016), our finding suggests that SME start-ups would be reluctant to participate in subcontracting for the fear that newcomers have little chance over the incumbents in the supply chain. While it is well understood from the transaction and switching cost viewpoints that prime contractor may be reluctant to use new subcontractors (Shahzad et al, 2018), subcontracting still presents enormous opportunities for connecting SMEs to public sector markets (Institute for Sustainability, 2012). The small firm is prepared to seek subcontracting work only if the requirements are not too demanding (Loader and Norton, 2015).

4.2.6. Delayed payment

Previous research has indicated that there are some institutionalized practices, established as culture or norms within the public sector environment, which act as barriers to SME participation (Loader, 2013). A notable example of this practice was the late and lengthy payments experienced by small businesses who act as suppliers to public organisations (Rostek,

2015; National Audit Office, 2015). This was another issue raised by the participants regarding subcontracting in the public sector markets. Reflecting on the fact that the internal business operations of prime contractors are not usually bound by public sector procurement regulations, the participants shared their frustrations with the slow progress that has been made in addressing the issue of poor payment practice in the public sector supply chain:

“Certainly, the prompt payment rule can influence positively our attitude toward public procurement but late payments pretty much existed. We see big contractors consistently miss payment dates; delays are due to internal politics and to be honest, some government bodies we deal with the payment within 30 days anyway, but when they subcontract to a private sector service provider they are utterly appalling, some take 90 days. Currently, unless we put the work on the stop, we don't get paid, so there is no change and no change to our participation etc” (SME 6).

What this suggests is that prime contractors usually delayed payments to improve their working capital, at the expense of their cash subcontractors. A study conducted by the UK's Federation of Small Businesses revealed that 60% of small businesses are paid late by large businesses (FSB, 2016). However, the economic impact of late payment to SMEs can be significant, resulting to cashflow difficulties, a slowdown in profit growth and higher dependence on overdraft for working capital (Henschel and Heinze, 2018). Even though the UK government has consistently stated earlier that it would use buying power to ensure that large contractors comply with the Prompt Payment rule both on government contracts and in their work with subcontractors (Cabinet Office, 2019), poor policy compliance has been reported previously as a concern (National Audit Office, 2015). All these points to a clear need to strengthen compliance and enforcement of the UK government prompt payment policy.

5. Discussion and implications

In the previous section, we discussed the reported experiences of our participants about subcontracting on public sector contracts and analysed the findings concerning previous evidence. We have developed a framework to classify these themes based on the dimensions of causality and controllability in Weiner's model of attribution, previously presented in figure 1.

[Insert Figure 2]

The new framework presented in Figure 2 revealed that SMEs attributed their disinclination for subcontracting to two internal controllable reasons, which are perceived vulnerability to intellectual property loss and a lack of motivation to innovate, as well as four external factors. two of the external factors are controllable (late/delayed payment and favouritism in subcontractor's selection) and the others are uncontrollable (imbalance of power in subcontracting relationship and inaccessibility of subcontract opportunities to subcontractors. It is evident from the findings that external factors are more prominent than internal factors. The most notable of these is the inherent power imbalance between a large prime contractor

and subcontractors, which tend to reduce the latter's decision-making abilities, profitability, and motivation to innovate in a subcontracting relationship.

In previous research, factors identified as key barriers to SMEs "direct" participation in public procurement in the UK include cumbersome administrative procedures, contract sizes, and time-consuming selection processes (Glover, 2008; Loader and Norton, 2015). However, our study did not identify these issues regarding subcontracting on public contracts. Interestingly, some factors which have been reported in previous studies as barriers to SME participation in public procurement generally, were identified as relevant to the subcontracting context. These include late payment to suppliers, the opacity of contract information and discrimination of small suppliers (Loader, 2013; Strömbäck, 2015). Nonetheless, some issues peculiar to subcontracting emerged such as, SMEs losing their creative motivation because of the fear of losing IP to prime contractors. However, SMEs can manage this fear by engaging the services of intellectual property lawyers to protect proprietary information and trade secrets in a subcontracting relationship. Additionally, procurement managers in public organisations can make it obligatory for prime contractors to establish and disclose their contract clauses for protecting subcontractor's intellectual property rights. Regarding controllable (externally) demotivating factors, SMEs could manage 'late payment' by offering discounts to the paying organisation for earlier payment. They could also secure advance payments on sub-contract work from financial institutions for a fee.

Late payments to subcontractors have been identified in previous research into subcontracting in the UK's construction sector (Bibby Financial Services, 2018). There is a need for more wide-scale adoption of the project bank accounts (PBAs), which was designed to execute fair payment practices on a construction project (Griffiths, Lord and Coggins, 2017). The government should broaden the reach of this initiative to address the issue of late or unfair payment practices in public sector subcontracting. This can complement the current prompt payment policy of the UK government which requires public organisations to publish information on payments of suppliers and the timeliness of payments to suppliers in their supply chains. Likewise, blockchain technology has the potential to increase traceability and transparency of supply chain data, and transactions (Benton et al, 2018). This could be adopted to address late payments to subcontractors in the public sector supply chain. Regarding 'favouritism in the process of selecting subcontractors', networking and relationship building could possibly help SMEs overcome this barrier. SMEs are proactive in searching and gathering information on customers and competitors (Reijonen et al, 2016). This kind of proactive orientation can assist them to exploit social media networks like Twitter, LinkedIn, and Instagram, for connecting with prime contractors who have been awarded government contracts for goods and services.

Start-ups and SMEs with no experience of subcontracting in the public sector environment can use this medium to explore subcontracting opportunities with firms currently acting as prime contractors on government contracts. Overall, the experiences reported by participants in this study have pointed to the need for developing necessary interventions or remedies, which can help SMEs address externally caused constraints limiting their ability to make best use of subcontracting in winning public contracts in the UK. Our findings have implications for the regulation and governance of UK public procurement markets. At a policy-

making level, the framework developed in this study can guide regulators and politicians to identify key areas where attention should be focused to modify their existing procurement policies, or design new measures to make subcontracting more attractive to SMEs. Particularly regarding external factors like imbalance of power' and 'inaccessibility of subcontract opportunities', which the SMEs might struggle to control.

Currently, the UK public procurement regulation requires prime contractors on public contracts to advertise subcontract opportunities on Contracts Finder (Crown Commercial Service, 2018), but more coercive measures are needed to for ensuring compliance with this rule. Government actions to promote regulatory compliance must take into consideration both behaviour and legal enforcement mechanisms (Tukamuhabwa, 2012), such as using financial penalties for failure to make information on subcontract opportunities publicly available and accessible. The government can introduce new training course on 'managing an imbalance of power in relationships with large clients' as part of the many of the business support initiatives (Intellectual Property Office, 2014) currently available to SMEs in the UK. SMEs themselves should be seeking professional guidance/ advice to check the subcontract terms and determine if the relationship has a negative power imbalance before appending their signature. Following the Brexit transition period on 31 December 2020, the UK government published a Green Paper, proposing several changes to how the public procurement regime will operate in the future (Arrowsmith, 2020). Policy makers and politicians should consider the recommendations in this paper, now that the UK is free to set its own guidelines on public procurement.

5.1. Conclusion

In this study, we applied the attribution theory of social psychology to a topical debate around SMEs underrepresentation in the public sector marketplaces. Rapidly evolving literature continues to mention that public sector supply chains represent a huge market opportunity for small businesses, but they have not maximized these opportunities (e.g., Loader and Norton, 2015; Carayannis & Sipp, 2005; Glover, 2008; Thomassen et al, 2014). The findings demonstrate how SMEs attribute their disinclination for subcontracting opportunities to different sources, which can be internal, external, or both. Walker et al (2013) argue that implications for practice can be considered an essential part of the theoretical conceptualisations. In this regard, the framework developed from our findings is presented in a manner that informs both theory and practice.

Previous research on the underrepresentation of SMEs in public procurement markets has tended to neglect the issues associated with participation in subcontracting in public contracts. However, in recognition of the heterogeneous nature of public procurement routes, researchers have been calling for an investigation of the contextual factors enabling or constraining SMEs from winning government contracts (Loader & Norton, 2015; Karjalainen and Kemppainen, 2008). A framework underpinned by attribution theory was developed from the synthesis of our findings to depict the causes of SME disinclination towards subcontracting in the public sector markets. Thus, this paper contributes to the emerging body of literature, emphasising the need to help improve SME access to subcontract opportunities in public sector markets. The proposed framework can provide valuable insight towards designing

interventions to best help SMEs overcome the challenges they face when seeking subcontracting opportunities in government supply chains.

In addition to the above contributions, it needs to be pointed out that the problem addressed in this study does not concern only the UK since similar rules are applied to guide public procurement processes in European Union (EU) the Member States. Even though the UK withdrew from the EU, our findings may still guide policy development and government intervention in developing countries, that seeks to use public procurement as a policy tool to develop the small business sector. Like most qualitative exploratory studies, the aim of this paper is not to generalize findings but to improve knowledge. Nevertheless, countries with similar procurement regimes to the UK may consider our findings as a guide to help in the design of new policies to encourage SMEs to increase their chances of winning public contracts through sub-contracting.

The key limitations of the study can be attributed to the methodology. One such limitation is the fact that the research is exploratory in nature, based on evidence obtained from a purposively sampled of SME firms in the UK. Future research can examine how subcontracting plays out in different sectors/industries to help provide contextual understanding. For example, our findings could be examined in a more in-depth (e.g., case study, quantitative survey, phenomenography) study to understand what SME participation in subcontracting means in service versus construction versus transportation sectors.

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