Forgetting social value and other good practices in construction supply chains: Procurement in pandemics

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ABSTRACT

The construction industry is a major contributor to the UK economy and provides additional benefits for wider society including the creation of social value. The creation of social value is highly dependent upon the construction industry supply chain which can been described as fragmented, adversarial and wasteful. Supply chain collaboration has been improving in recent times with increased trust and communication helping to successfully deliver project requirements, including the creation of social value. However, progression in construction supply chain collaboration was made pre Covid-19, the consequential UK Government enforced lockdown, and resulting recession. As we are now in the immediate aftermath of the initial impacts of the pandemic, this paper aims to understand if the lockdown and proceeding recession has resulted in any supply chain procurement behaviour changes of Quantity Surveying professionals, and how such changes may impact upon social value creation. Semi structured interviews were conducted with seventeen main contractor Quantity Surveyors and the results analysed using narrative analysis. The results revealed that whilst there is a lack of supply chain collaboration generally, progress has been made in building trust and communication amongst the supply chain to help create social value. However, changes in supply chain management behaviours post pandemic now risk undermining social value creation in the construction industry.

KEYWORDS: Construction procurement, Covid-19 pandemic, Social value, Supply chain management.

INTRODUCTION

On the 31st December 2019 a cluster of cases of what would ultimately be named Covid-19 were first identified in Wuhan, Hubei Province, China (World Health Organisation, 2020). Covid-19 would soon spread around the world leading to the UK Prime Minister ordering a 'lockdown' on the 23rd March 2020 which resulted in the majority of the population only being able to leave their homes for essential travel, effectively halting the majority of construction and infrastructure works. Whilst the construction industry was one of the first to return to operation, the lockdown itself and the proceeding staggered return to work resulted in the first UK recession for 11 years and a 20.4% reduction in economic output from Q2 2020 compared to Q1 (Chan & Plummer, 2020). As the construction industry plays a vital and substantial part of the UK economy (Rhodes, 2019) any industry changes resulting from the lockdown could have substantial impacts that reverberate throughout the UK economy and wider society. Approximately 13% of all UK companies are classed as operating in the construction industry at different levels of the supply chain (Rhodes, 2019), with many more companies from industries such as manufacturing, hospitality and education indirectly linked.

The supply chains of the construction industry are extensive and so the actions of construction industry professionals towards the top of the chain can have far reaching ramifications for those underneath. In recent years there has been an increasing focus on additional Social Value (SV) that can be created by organisations during the course of their operations due to increasing stakeholder expectations and the introduction of the Social Value Act (2012) (Watts *et al*., 2019). The SVA empowers public sector clients to consider more than just the time, cost and quality of main contractor returned tenders, and add weightings to any additional social value contractors can achieve whilst delivering the works (Watts *et al.*, 2018). The benefits such changes are having on society include an increase in training and employment opportunities as a UK government report revealed that in 2019 there was 23,000 apprenticeship starts in the construction industry, up from 14,000 in 2011 (Foley, 2020). Additionally, it has also been revealed that there has been increased spending with local SME's, the upskilling of workers, and improving the education and employment opportunities for disadvantaged young people aged 14-17 who are classed as NEET (Not in Employment Education or Training). Therefore, it can be argued that in both the economic contribution to the UK economy, and the additional social value it creates, the industry has a huge positive impact across society.

Any changes to how the construction industry operates due to the Covid-19 induced recession could therefore have potentially harmful ramifications to not only the economic contributions the industry makes, but also the additional social value the industry creates. Such SV is often created as a collaboration through the supply chain with procurement used as the best method of building strong working relationships allowing effective SV creation. It is therefore imperative to explore any potential changes in practice that occur in the industry as construction has been described as central to economic recovery (Loosemore & Richard, 2014), and that is precisely what is required now. Although it is still too early to understand the medium- and long-term impacts of the recession in the UK, now is arguably the immediate aftermath of the return to work and so it is an ideal time to understand the current perceptions of construction industry professionals, any resulting changes in behaviour and the potential ramifications of such changes. Any negative impacts can therefore be identified and reduced going forward to ensure the construction industry contributes the best it can to the economic recovery required. It is the aim of this inductive research to ascertain and understand if the lockdown and proceeding recession has resulted in any supply chain procurement behaviour changes and what the impact of any changes will be. Through the interviewing of main contractor Quantity Surveyors (QS's) this paper reveals the changing behaviour of the construction professionals during procurement and the immediate and potentially long-term negative impacts this behaviour may have on SV creation in the construction industry.

THE CONSTRUCTION INDUSTRY

The construction industry can be defined as the development, maintenance and demolition of structures encompassing the design, consultancy and manufacturing operations of supply chains (Segerstedt & Olofsson, 2010). Globally, the industry is forecast to increase its output to $15 trillion by 2025, an increase of more than 70% from 2013 (Loosemore & Richard, 2014). In the UK the construction industry accounts for 2.4 million jobs and contributes £117 billion to the UK's economic output (Rhodes, 2019). Unlike many other industries, the construction industry also operates almost wholly in the public eye and so bad practices are readily reported (Watts *et al*., 2018). The result of this is that despite its economic significance the construction industry has always suffered from a negative reputation associated with causing and contributing to environmental damage, the wasteful use of resources and an aggressive attitude of indifference

and inconsideration to clients and society (Barthorpe, 2010). Indeed, it has been reported that the construction industry contributed 30% of the entire solid waste in the European Union and globally consumes around 36% of the world's energy whilst producing 39% of its greenhouse gasses (Badi & Murtagh, 2019). Other transgressions are also widely reported and compound the negative perceptions society has of the construction industry. For example, the top 40 construction contractors reported a gender pay difference of between 10.9% and 58.4% (Morby, 2019) and in 2015 the Chartered Institute of Building (CIOB) released a report highlighting that due to the many unethical practices currently adopted within the construction industry there is a high risk of the industry being infiltrated by modern slavery practices (CIOB, 2015). Additionally, according to the Health and Safety Executive (HSE) 79,000 construction industry workers were suffering from work related ill health in 2019, with the same year recording 54,000 nonfatal injuries and 30 fatal injuries (HSE, 2019).

However, numerous examples of positive behaviours from the industry are now starting to gain prominence. These are the result of an increased adoption of socially, ethically and sustainably aware actions and better communication of the long-standing benefits resulting from the industry's existing actions and strategies. Many companies operating in the construction industry today can be found to embody environmentally conscious strategies, law abiding actions, safety conscious behaviours, and general philanthropic activities. There has also been a move towards a more collaborative approach across the entire construction supply chain (Wong *et al.*, 2017). This has helped address one long standing criticism of the industry, arguably holding back the achievement of many of its economic, environmental and SV focused goals, in that it operates in a fragmented manner. To deliver such goals the industry is heavily reliant upon, yet appears to have an adversarial focus upon, its supply chain.

THE FUNCTION OF SUPPLY CHAINS IN THE CONSTRUCTION INDUSTRY

Supply chains in construction have been described as the organisations linked in both the upstream and downstream networks of clients, consultants, contractors, subcontractors, suppliers and manufactures (Akinade & Oyedele, 2019). In many industries the supply chains can be described as stable and continuous however, it is argued that in the construction industry supply chains are highly complex and uncertain (Aloini *et al.*, 2012). Add to this the temporary nature of site teams, the different customer preferences and the fragmented network of stakeholders (Aloini *et al*., 2012) successful collaboration of an entire construction industry supply chain can be described as somewhat challenging.

A UK government research briefing paper by the Department for Business Innovation and Skills (DBIS) identified the extensive nature of the construction industry supply chain by stating that the majority of construction work is carried out at tier two or below, and even identified projects with five tiers of direct supply chain involvement (DBIS, 2013). Potential problems with such a fragmented supply chain include lack of supplier awareness and general supply chain understanding, short sighted strategies and actions, and a failure to share project information (Benton & McHenry, 2010). Complex supply chains in the construction industry also present fewer opportunities to drive out waste and reduce cost, and lead to increased transaction costs and management inputs (DBIS, 2013).

As the construction industry depends upon a complex supply chain to successfully deliver the construction projects themselves, any additional SV is arguably also dependent upon these same complex supply chain relationships in order to be realised. Although, reports from the

construction industry as far back as 'Constructing the Team' have criticised supply chain practices and called for a more collaborative approach (Latham, 1994). Calls, which unfortunately were not actioned according to subsequent reports. With 'Rethinking Construction' calling for more supply chain partnering (Egan, 1998) and 'Never Waste a Good Crisis' identifying adversarial practices of profit maximisation at the expense of other supply chain members and the passing off risk from one party to the next instead of a collaborative approach to deal with risk effectively (Wolstenholme, 2009). Reported reasons for the construction industry to repeatedly resist collaborative supply chain approaches include the competitive bidding practices prominent within the industry, financially aggressive management, poor payment practices and the inadequate pricing of risk (DBIS, 2013).

There are, of course, advantages to supply chains, including how successful collaborations can help foster innovation and promote creativity (Maqsood *et al*., 2007) and ultimately help improve project management and performance (Wang *et al*., 2017). Additionally, over the past decade there has been increasing examples of a collaborative approach in the procurement activities of construction supply chains that has helped develop an atmosphere that supports both the successful delivery of construction projects and the creation of additional SV. For example, in a review of the Social Value Act it was described how collaborative supply chain behaviours had resulted in increased employment for young and disadvantaged people, and the costs of achieving social value benefits shared amongst the supply chain instead of funded solely by one party (Cabinet Office, 2015).

Therefore, to successfully implement innovative initiatives that create SV it will arguably require and depend upon supply chain collaboration. Furthermore, any supply chain collaboration aimed at creating SV starts with the procurement intentions of those initially tasked with the social value creation, which is usually those companies operating at the first or second tier of the supply chain (Loosemore & Richard, 2014). Effective SV creation it appears, is as the result of supply chain collaboration initiated during procurement.

THE EVOLUTION OF PROCUREMENT IN THE CONSTRUCTION INDUSTRY

Procurement is the processes, actions and strategies involved in the purchasing of goods and services. In the construction industry goods and services are often procured as and when required on a project by project basis. In some instances, this can be with a long-term focus in mind if contracts and projects span many years. However, as many construction projects are of short-term nature, they often involve temporary teams and supply chain relationships that may not remain once the project is complete.

The criterion on which construction goods and services were historically procured revolved around time, cost and quality (Wong *et al*., 2012). However, this triumvirate has slowly been evolving to a quadrumvirate of criterion to include responsible business practices that can be classed as either sustainable or SV factors (Loosemore & Higgon, 2016). One reason for this is the argument that procurement provides the perfect opportunity for one party to introduce and promote policy change through their supply chain pertaining to increased social responsibility and sustainable actions (Correia *et al*., 2013). Procurement also allows one supply chain member to influence the behaviours of another through the introduction of additional metrics (Uttam & Le Lan Roos, 2015) for example the amount and type of SV created. Whilst the simple inclusion of such procurement criterion are not evidence by themselves of widescale changes to the construction industry procurement practices, they do evidence an evolving

awareness of wider benefit to society that can be achieved, and is expected, with the delivery of construction works.

Although many construction professionals have responsibly for procurement in different guises, arguably one of the most influential is the role of main contractor employed Quantity Surveyor (QS). QS's have responsibility for the procurement of sub-contractors during the construction stage of works, and so have to ensure the contractual obligations they hold with the client are passed down appropriately to sub-contractors and all required SV creation is achieved.

Whilst research has shown a slow but gradual increase in the addition of social value criterion to procurement requirements (Correia *et al.*, 2013; Hoejmose & Adrien-Kirby, 2012; Uttam & Le Lan Roos, 2015) these were all published before the Covid-19 pandemic and resulting economic recession. Therefore, we do not know how the recession is currently perceived by main contractor Quantity Surveyors and what their resulting actions are with regards to supply chain procurement behaviours, and any ramifications of these actions upon SV creation. This is the gap in current understanding this research seeks to address as by understanding how the construction industry may react during the current recession, especially towards supply chain partners, will help the industry, and wider society and stakeholders, identify and better prepare for any changes that may impact the future creation of SV.

RESEARCH METHODS

As this research is concerned with the interpretations, opinions, and resulting actions of construction professionals regarding social value procurement decisions influenced by the Covid-19 induced economic climate, a constructivist ontological position is adopted. Constructivism is at one end of the ontological spectrum describing meanings as socially constructed between individuals and so such meanings are not independent of, but the result of, the interpretations, perceptions and understandings of the individuals involved (Robson & McCartan, 2017). As meanings are socially constructed and subject to evolution, agreement and disputes, they are best understood through the use of qualitative data (Bryman, 2016).

To gain qualitative data this research utilised semi-structured interviews as they allow for conversations between the interviewer and participant that remain focused on key topics yet allow flexibility for any interesting avenues that arise to be pursued (Bryman, 2016). Interviews also allowed for a depth of knowledge and understanding to be ascertained from each participant, with motivations for behaviours and actions probed and understood (Byrne, 2012). Due to the geographical spread of participants and the Covid-19 related proximity and social distancing issues, all interviews were conducted via telephone.

In the first instance thirty of the top 100 UK main contractors by turnover in the year 2019 were randomly selected. A search was then conducted on Linked-In, a popular professional social networking site, for site-based Quantity Surveyors from each of the 30 main contractors randomly selected. QS's were determined to be the ideal interview participant as they are a key construction stakeholder, with core project responsibilities at all stages of construction projects (Adesi *et al.*, 2019). All QS's interviewed had over ten years' experience working in the industry and were a key member of the team making the procurement decisions on site and at the front end of managing the supply chain. In total 23 QS's were identified and contacted and twenty responded positively for interview participation. Initially, thirteen interviews were arranged and conducted due to the time and workload constraints of the participants. Follow up

emails to the seven positive respondents who had not been interviewed were issued as a further four interviews conducted with QS's. This brought the total number of interviews conducted to seventeen and therefore exceeded the minimum number of interviews required to be considered optimum (11-15) as identified in a comprehensive review of 54 previous studies (Galvin, 2015). Out of the seventeen participants interviewed, seven were based in London, four in the North West, three in Yorkshire and three in the Midlands. Based on the findings of the literature review a set of semi-structured questions were designed. These included questions on the wider construction industry, procurement behaviour pre and post pandemic, perceptions of supply chain purposes and relationships and current Covid-19 related experiences as well as resulting actions and intentions in relation to the issues presented.

Narrative analysis as used for both the structure of the questions asked, and the method of data examination undertaken. This allowed the interview questions to be asked from the perspective of story requests, allowing participants to respond with examples of their own personal and first-hand witnessed experiences (Griffin & May, 2012). As an empowering method of getting participants to reveal their actions, thoughts and motivations by encouraging storytelling, narrative analysis allows an insight into why and how changes were actioned by those telling the stories (Sandlelowski, 1991).The questions asked included 'can you tell me about a time you worked closely with your supply chain?', 'how do you normally agree contractual clauses with sub-contractors?', 'how has you created SV?' and 'tell me about any organisational changes have you experienced since you have returned to work post lockdown?'. Follow questions were then asked after each participant answer, such as 'why?', can you elaborate on that further?', and 'what impact did this have / do you think this will have on future supply chain procurement practices?'. In each interview as the nature of the questions asked were semi-structured bespoke follow up questions were asked where applicable to reveal further insight into the participants motivations and perceptions. In supporting the examination and analysis of data, narrative analysis enables the stories received to be analysed for key themes. Such themes can then be grouped together across interviews responses to allow for identification and exploration of wider patterns and trends to be revealed and understood (Loosemore & Bridgeman, 2018). Such a process of summarised and analysed narratives reveals key understandings to be revealed and compared, identifying common themes, similarities and inconsistencies (Griffin & May, 2012). It is argued that stories as responses are the best method of accessing and understanding an individual's knowledge, experience and intentions (Sandlelowski, 1991).

FINDINGS & DISCUSSION

The importance and stability of Supply Chains

Analysis of the interview responses revealed that there was a consensus across all QS's with regards to the importance with which supply chains are viewed. All contractors interviewed considered their supply chain networks as intrinsically linked to the success of projects. However, they did comment on how such networks are often complex due to the ad hoc and project by project basis of construction works and the temporary nature of projects with different site teams and stakeholders, reinforcing findings in the literature (Aloini *et al.*, 2012). Building upon such findings however, the research revealed QS's do not perceive their supply chains to be unstable but are in fact of a robust nature. This is from a main contractor perspective and when explored in more detail was found to relate to the QS's ability to call upon one of many suppliers for a single sub-contractor work package. Having robust and stabile supply

chains it appears, relate to those who are making the procurement decisions higher up in the supply chain. The interviews also supported findings in the literature as they confirmed only management level work was carried out within their own organisations, with the supply chain responsible for the actual delivery of the construction projects (DBIS, 2013).

Supply Chain Collaboration

All QS's interviewed were only concerned with the primary contractual relationships they had in place with the tier of sub-contractors and suppliers immediately below them in the supply chain, and would only share any project information they deemed as important to the success of that particular work package. This resonates with findings in the literature that there is a lack of information sharing and that strategies and actions are somewhat short sighted due to the fragmented nature of supply chains and how industry practices restrict collaboration (Benton & McHenry, 2010; DBIS, 2013). However, the findings of the research expanded upon existing findings with the majority of QS's interviewed revealing that their motivations for only sharing small amounts of information was they believed this was in the best interest of the project's successful delivery as it prevented overwhelming each supply chain partner with information the QS's didn't feel were of particular importance to the successful delivery of their own work package. For example, one QS told the story of how on their current project they informed the cladding sub-contractor of only their project specific requirements (to provide all labour, plant and material required) but not of the other sub-contractors that would be on site simultaneously. This resulted in the cladding sub-contractor including in their price and therefore bringing on site a telescopic handler to lift all cladding materials to higher parts of the buildings scaffold. However, a telescopic handler was already on site provided by the brickwork sub-contractor. In this instance the telescopic handler could have easily been used for both contractors and would have reduced overall project costs and also the congestion and emissions resulting from the site works. When this was then discussed further, the QS revealed that all supply chain partners were classed as separate from each other, with any 'partnerships' amongst the supply chain involving the main contractor and the other party only. All supply chain relationships were viewed as a two-party relationship. There was no collaboration encouraged between the supply chain partners themselves. This revealed that the QS's act as the gate keepers to project information between supply chain members during procurement, and therefore through maintaining only a two way collaboration actually served to restrict many of the benefits collaborative supply chains can offer such as fostering innovation, promoting creativity, and improving project management and performance (Maqsood *et al.*, 2007; Wang *et al*., 2017).

Trust in Supply Chains

Trust issues between supply chain members were also revealed during the interviews. These trust issues primarily revolved around the main contractor QS believing their supply chain counterpart were out to maximise their own profits at the expense of the main contractor's. The majority of QS's stated that they therefore imposed, and did not negotiate, contract clauses. With even those QS's who responded saying they do allow for negotiation not forthcoming with any stories that adequately reinforced their initial answers. This could be due to any stress felt during the interview to recall exact project details or could be due to the self-perceived behaviours of QS's differing from actual actions undertaken on projects. It is arguably these trust issues that have contributed to the lack of progress in the collaboration of construction supply chains identified in the literature (DBIS, 2013).

However, increases in trust between main contractors and sub-contractors were reported by main contractor QS's in instances of repeat working relationships. Trust reportedly evolved over time and then led to the advantages discussed in the literature being realised such as the combining of knowledge to develop innovative approaches and improve project performance, reinforcing findings in the literature (Maqsood *et al*., 2007; Wang *et al*., 2017).

Social Value Creation Post Pandemic

When the concept of SV, and the initiatives utilised to create SV, were discussed, the findings reinforced those in the literature that procurement is seen as the ideal vehicle by which to impose such requirements and that procurement criterion are evolving to include more of a focus on SV and wider issues (Correia *et al*., 2013; Uttam & Le Lan Roos, 2015). Responses from the QS's also confirmed that such requirements for additional criterion ultimately come from client requests (Loosemore & Richard, 2014). However, the interview responses revealed that all requests for social value activities and initiatives are not always formally included in contract agreements between main contractors and clients. Main contractors often participate in additional social value creation for clients when it is poorly defined at the start of the project and the full requirements are not known and so cannot be fully scoped. Therefore, it is not simply through contractual obligations that main contractors engage with social value activities.

However, such responses were illustrative of behaviours in a pre Covid-19 world. Analysis of the interviews undertaken built upon previous literature findings and revealed nine of the QS's believed that their company would now only engage with such additional SV activities when requested to do so by clients at tender stage so that future SV requirements could be accounted for in any contractual pricing documents. Even if the precise future nature of the SV activities required was unknown. The remaining eight QS's revealed that they would continue to satisfy all client SV requests, even if these were not formal contractual requirements. Procurement was viewed by all the QS's interviewed as the ideal method to ensure any risks associated with the creation of SV was passed to the supply chain. Interestingly there was also a consensus that since the return to work post lockdown each organisational culture, with regards to procurement and management of supply chain relationships, had changed. It appears the QS's (and by extension their organisations) perceptions of contractual relationships had become more rigid. Despite the view of the view of eight QS's that additional SV would continue to be engaged with, even if not a contractual requirement. All of the interviews revealed that if SV activities were undertaken the requirement to deliver would be passed down to the supply chain.

All QS's interviewed reported that supply chain spending is under increased scrutiny, with the same requirements now expected for a reduced overall cost. For twelve of the QS's interviewed any existing SV requirements are also now to be met solely by sub-contractors themselves, and not through collaborative approaches as pre pandemic SV creation was. Twelve of the QS's interviewed revealed that since the return to work post pandemic induced national lockdown there were organisational shifts towards a greater cost focus, with any activities outside of the minimal contractually required now viewed as non-essential. This includes current and planned SV creation activities that are now to be cancelled or postponed indefinitely as the focus of main contractors is upon immediate cost reduction and financial value maximisation. Unfortunately for SV, it is not seen with the same priority despite the widespread advantages it brings to both the immediate organisations involved and wider society.

It appears any positive changes in procurement behaviour and collaborative approaches with the supply chain that have developed over the past decade have been 'reset' to the behaviours widely adopted by construction companies in the late 1980's, 1990's and early 2000's as identified by a succession of construction industry reports (Egan, 1998; Latham, 1994; Wolstenholme, 2009). Such reports described construction as an industry that aggressively transfers risks and fails to adopt collaborative practices, and instead focuses on adversarial and contractual orientated behaviours. If such behaviours are widely adopted across the industry there could potentially be a devastating impact upon the additional SV created in the future in that firstly, it may be scaled back to reduce costs. Secondly, main contractors may reduce their input into SV creation leaving their supply chain with increased requirements to deliver on tighter profit margins. Benefits such as increasing apprenticeship starts, local SME spending and tackling increasing youths classed as NEET may be a thing of the past with construction returning to cost focused industry. Based on the findings of this research, construction industry professionals with responsibility for procurement need to take a long term and value driven approach with a focus on supply chain collaboration to maximise the societal benefits in these economically uncertain times. A failure to do so, with a focus on a short-term cost driven agenda may have long term ramifications to the creation of social value. Unfortunately, for some, the pandemic seems to have shifted behaviours towards the latter.

CONCLUSION

The UK construction industry has persistently suffered from a negative reputation due to factors such as environmental damage caused by its operations, its wasteful use of resources and a perceived inconsiderate attitude towards clients and society. This is despite the significant contribution the industry makes to the UK economically in terms of employment and output and the wider advantages the industry brings to society such as additional SV created during the completion of projects. However, to create such SV requires the collaboration of many supply chain partners.

Historically, this is where the industry has struggled, as numerous construction industry reports have confirmed supply chain collaboration has generally been poor with fragmented supply chains leading to a lack of information sharing, short sighted strategies and fewer opportunities to eliminate waste and reduce cost. Procurement practices of main contractors have however, slowly evolved with more collaborative approaches adopted and an increasing focus on creating social value as part of the construction process. Supply Chain collaboration has started to have many notable success stories and examples of additionally created SV have included the hiring of apprentices, encouraging the growth of local SME's with focused spending practices and tackling youth unemployment. This was however, before the onset of Covid-19 and the resulting economic recession. Any changes to how the industry operates could have potentially harmful ramifications to both the economic output of the industry and also the additional social value the industry creates. Although it is still too early to understand the medium- and long-term impacts of the recession in the UK, we are now arguably in the immediate aftermath of the return to work and so it is an ideal time to understand the current perceptions of construction industry professionals, any resulting changes in behaviour, and how these changes may impact upon the additional social value the industry achieves. As the construction industry has been described as central to economic recovery it is of the upmost importance such research is conducted and this paper sought to build upon previous studies to discover the impact Covid-19 has had on supply chain relationships and the focus of SV.

Through the use of semi-structured interviews with Quantity Surveyors from seventeen main contractors this research revealed that construction industry supply chains are key to the creation of SV. There is also a lack of wide scale collaboration and information sharing across the supply chain, with all information that is shared following a vertical corridor of a two-party relationship, the main contractor and a single sub-contractor. Limited communication and collaboration exists on a horizontal level, between sub-contractors. Since the return to work post Covid-19 lockdown the perceptions and behaviours of QS's has changed. Procurement of supply chain partners is now more likely to be a process where the requirement to create SV is imposed rather than collaboratively negotiated. Whilst SV will still be created, the onus has shifted from a collaboration between main contractors and their supply chain to an expectation that supply chain partners have to meet alone. It appears that any positive changes in procurement behaviour and collaborative approaches with the supply chain that have developed over the past decade have been 'reset'. This research reveals that when faced with economically uncertain times some main contractors revert to aggressive supply chain management and a focus only upon immediate cost and not wider SV, despite the numerous advantages this brings. to the poor behaviours widely adopted by construction companies. The Covid-19 recession it appears, has served to reduce collaborative supply chain practices with regards to social value creation in the short term at least. This research compels those with responsibility for procurement to focus on a long term and value driven approach when collaborating with supply chain partners to maximise the SV created. This will be of more benefit to society and the wider economy than a short-term cost driven approach to supply chain management.

Limitations to this research include the sample size. Although it is viewed as satisfactory as representative, to make firm conclusions as to the changing nature of procurement behaviour post pandemic, a larger sample of QS's is required. Although the sample is from major parts of the UK, the number of interviews in each geographical region is limited and several geographical areas are not sampled. Therefore, the findings cannot be said to be generalisable across the UK. However, they do serve the purpose of identifying increasingly prevalent changes in QS behaviour that are not bound by any specific geographical location. The use of only QS's in this research can also be considered a limitation as the findings cannot be generalised more broadly to be representative of the perceptions of other construction professionals. However, this research sought to understand the views and actions of QS's only as they are at the face of any changes in procurement behaviours influencing collaboration with supply chain partners and the creation of SV. Building upon these findings, suggestions for future research areas include comparing the changing perceptions of main contract QS's with supply chain QS's and understanding how supply chain QS's are reacting to changing procurement behaviour.

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