Development of a Conceptual Framework for Enhancing Payment Practices in the UK Construction Industry

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by

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Certificate of Ethical Approval

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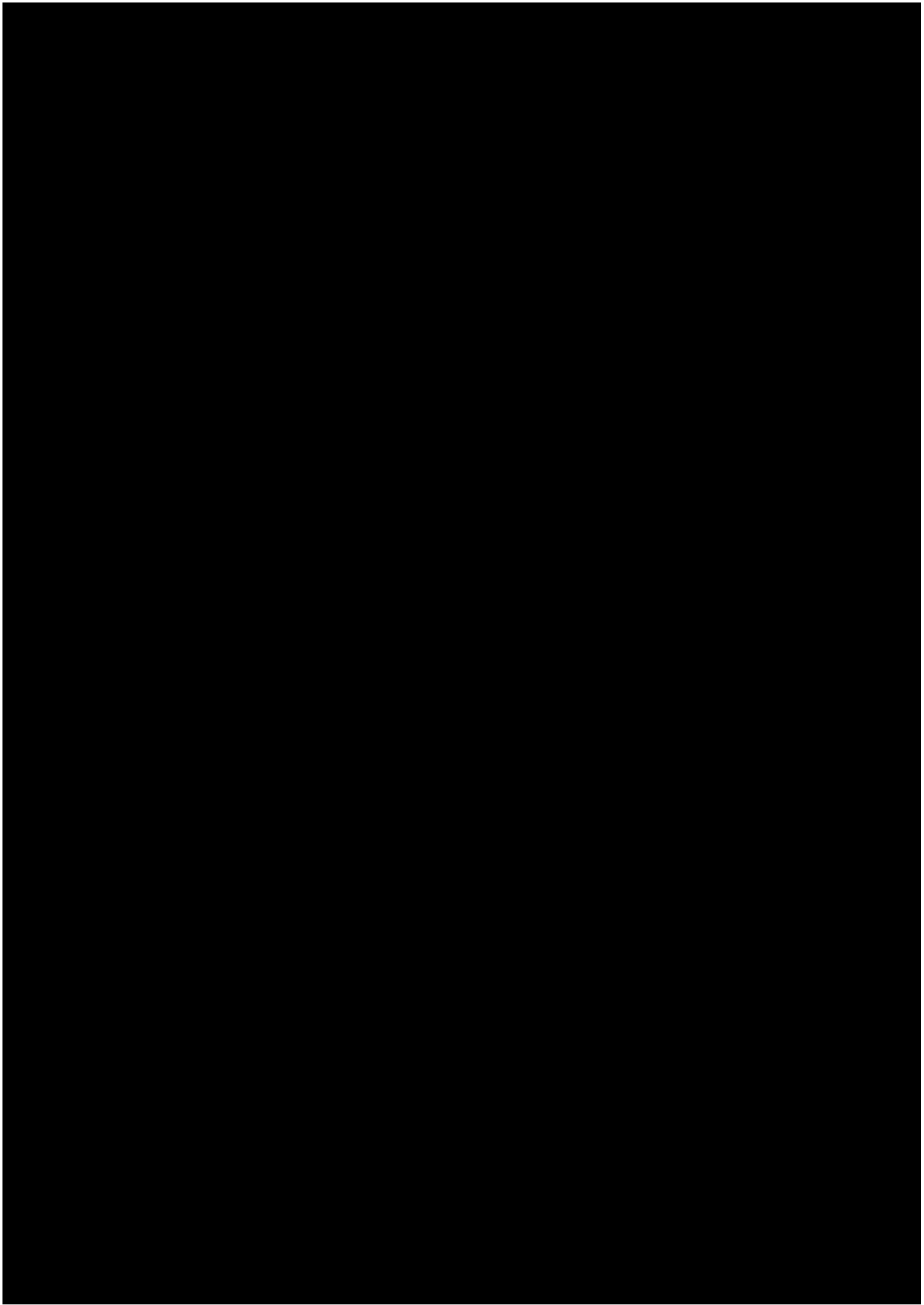

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Abstract

Globally, unfair payment practices remain a major commercial issue for many industries. The problem is exacerbated in the construction industry with huge negative impacts on contractors and other supply chains. For example, in 2016 there were over £30 billion worth of unpaid invoices to Small and Medium-Sized (SMEs) construction contractors in the UK. Also, recent report revealed that in the last three years, £7.8 billion of retention monies deducted by construction clients were not returned. A separate UK government report claimed that 72% of construction contractors are often compelled to sign up to contracts with disparities in rates of items, prolonged delays to payment periods, the imposition of rates and other prejudicial payment practices. Indeed, the industry's multi-tiered structure together with the commercial bargaining position of clients makes contractors and other supply chains in the industry susceptible to unfair payment practices. Moreover, the problem is endemic and chronic in the construction sector despite various government regulations and private initiatives designed to alleviate the problem. Yet, there is little research on how to enhance fair payment practices in the construction sector. Therefore, the aim of this study is to develop a framework for enhancing fair payment practices in the UK construction industry.

The key research questions are: How endemic are unfair payment practices in the UK construction industry? How effective is the proposed framework for enhancing fair payment practices in the construction industry? The study adopted concurrent mixed methods design; involving the use of archival data, questionnaire surveys and interviews with construction stakeholders in the UK. Data obtained were analysed and merged to provide better understanding of unfair payment practices in the construction industry. Data analysis techniques employed include descriptive statistics, Cronbach's alpha reliability, relative importance index, Pearson's correlation analysis, and content analysis.

Findings from the study show that Tier 2 clients accounted for 82% of unfair payment practices, while 13% and 5% of cases were linked to Tier 3 and Tier 1 clients, respectively. Indeed, Tier 2 has and does exert a strong commercial influence over their supply chain. Other findings reveal that the use of cash flow strategy, business model and the culture in the construction industry are the major causal factors of lingering unfair payment practices. The study also found that payment provisions in standard forms of contracts are often ignored and impaired for various reasons including payer attitudes, legal loopholes, current payment processes, the

use of adhesion contracts and weak bargaining powers. Moreover, the study also discovered that subcontractors and suppliers often find it difficult to challenge current unfair payment practices, because of client-contractor's relationships.

The study also reveals that unfair payment practices have snowball effect on construction supply chain; with direct consequences for business profit margins,wide ranging insolvencies and indirect effects leading to mental illness, stress and reputational damage for businesses.

Lastly, the study developed a framework to enhance fair payment practices for the construction supply chain. Validation of the framework by construction industry professionals revealed that it has the potential to enhance prompt payment of invoices from Tier 1 clients (private/public) to main contractors, subcontractors and other suppliers.

Glossary of Terms and Phrases

Cash flow	The word is used to denote money in and out of a business account.
Delay payment	Postponement of payment to a recipient or gross deviation from contractually agreed payment time frame.
Late Payment	Overdue or behind schedule payment to a recipient.
Payment	Remittance of what is due to a person or entity
FIDIC	International Federation of Consulting Engineers
JCT	The Joint Contract Tribunal
NEC	The New Engineering Contract
Project Bank Account	A ring-fenced account with the sole purpose of facilitating payment in construction project
ROCE	Return on Capital Employed
SFoC	Standard Forms of Contract
SPSSR	Special purpose payment system regulator
Subbies	Subcontractors
Supply chain	Chain of firms linked or formed by contracts
Tier 1 clients	Major construction clients (private or public)
Tier 2 clients	Main contractors acting as client to subcontractors or suppliers
Tier 3 clients	Subcontractors acting as clients to other sub subcontractor/suppliers
Trade credit	Deliver now and then pay later
Unfair payment practices	Terms or practices that deemed to be ‘grossly unfair’

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List of Abbreviations

ABFA	-	Asset Based Finance Association
BWF	-	British Woodworking Federation
BIS	-	The Department for Business, Innovation and Skills
BEIS	-	The Department for Business, Energy and Industrial Strategy
B2B	-	Business-to-business
B2C	-	Business to customer
CCS	-	Crown Commercial Service
CLC	-	Construction Leadership Council
EPR	-	European Payment Report
FSB	-	Federation of Small Business
FMB	-	Federation of Master Builders
NSCC	-	National Specialist Contractors Council
NFB	-	National Federation of Builders
ONS	-	Office National Statistics
IVD	-	Interim Valuation Date
SFoCs	-	Standard Forms of Contract

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CHAPTER 1
Introduction

1.1 Introduction

This chapter highlights the background to the study problem. The chapter provides an overview of the research problem, its background and context, the methodology used and its contributions to knowledge. The chapter is structured into seven sections: section one presents the context and rationale of the study. Section two presents the aim, objectives and research questions of the study, the third, fourth, fifth and six sections present the methodology used, the contribution to knowledge, the scope of the study and the structure of the thesis, while section seven present definitions of key terms and concepts.

1.2 Background to the research problem

Globally, unfair payment practices such as disparities in rates for items, delayed payments to suppliers and unpaid retentions to contractors, etc, remain a lingering commercial issue in the construction industry. The problem is exacerbated by many known and unknown factors; with huge negative consequence for contractors and other supply chains in the construction sector (The National Audit Office (NAO) 2018). In the UK, issues of unfair payment practices cut across strata and hierarchies of supply chains. For example, the Euler report (2015) asserted that there had been a substantial increase from 18% to 27% in the number of late-payment cases in the UK construction industry; with over £30 billion in unpaid invoices to Small and Medium-Sized (SMEs) contractors. Moreover, 82% of the total unpaid invoices were monies owed to ‘subbies’ (subcontractors) from different tiers of construction clients. The Federation of Small Businesses (FSB 2018) claimed that “over the past two years, a third of subbies in the UK construction industry have experienced longer payment periods of six weeks and beyond”. Arguably, small and medium-sized (SMEs) contractors (also known as subbies) are disproportionately affected by unfair payment practices; despite various industry and government initiatives designed to curb them.

For example, the Department for Business, Innovation and Skills (BIS 2015) report titled "*Challenging Grossly Unfair Payment Terms and Practices"* identified a catalogue of common unfair payment practices in the UK construction industry to include late payments, "pay when/if paid", disparities in rates for items, the exclusion of provisional remedies, delays to payments, longer payment terms, flat fees, discounts for prompt payments, the imposition of rates on subcontractors and unpaid retentions to contractors. Sadly,the identified unfair payment practices stated above are typical and endemic in the construction industry.

Peter and Arewa (2018) argued that late-payment predicament is not peculiar to SMEs alone; the main contractors in the industry also experience similar problems. Recent payment data published by the Department of Business, Energy and Industrial Strategy in the UK revealed that most private clients had standard payment terms of 90 days and a maximum of 120 days compared to the industry standard of 28 to 30 days payment agreements. The implication of such a protracted payment duration is that both main contractors and subcontractors are exposed to high business costs due to unfair payment practices that go beyond the agreed payment terms.

Late payment is perhaps the most common type of unfair payment practices for construction contractors. It is worsened by the nature and culture of the construction sector; characterised by fragmentations, complexities, multi-layered hierarchy contracts, diverse range of specialist skills and multifaceted works. Moreover, the use of a cascade system of payments where the payment flows from the upper tiers (client and contractors) to the supply chain seems to compound the deep-rooted payment problems in the industry (Latham Report 1994).

Apart from late payment quandary, there are a host of other unfair payment practices that are subtle to detect yet widely utilised by some clients to defraud their contractors and suppliers. For example, disparities in rates for items, the exclusion of provisional remedies and the discounting of items are all gross terms usually imposed on contractors and suppliers to exclude them from utilising any

sort of remedy in the contract. Consequently, these practices compel them to provide lower rates of payments to their clients. The Federation of Small Businesses (FSB 2018) claimed that 12% of construction contractors gave discounts to encourage prompt payments, 7% gave retrospective discounts to clients to facilitate their payments, clients paid 6% of their fees to remain on their chain in a preferred list of contractors and a 3% discount was provided to clients after goods and services had been supplied. While there is an overwhelming belief that unfair practices are unethical; they remain prevalent with little or no research on how to enhance payment practices in the construction industry.

Fundamentally, early payments to construction contractors is the lifeblood of the construction industry. Ameer (2005b) affirmed that early payments to contractors in the construction sector are important because of the large amount of money spent on purchasing materials, labour, plants and credit payments on a regular basis. Okeyo et al. (2015) opined that regular disbursements or timely payments are crucial to the supply chain, particularly for subbies, to ensure continuity and the completion of projects on time. Without regular payments for work done, it is practically impossible for most contractors, especially small and medium sized enterprises (SMEs), to complete works due to low capital investment. Besides, this category of contractors depends mainly on consistent interim payments to finance their operations and invest in future business growth.

Indeed, the greatest danger of unfair payment practices (especially late payment), is the existential risk to both large and small construction companies. For example, a recent survey by TSheets (2018) asserted that one in five contractors become insolvent annually as a result of cashflow problems which are directly linked to unfair payment practices. The Insolvency Service Report (2019) revealed that the bulk of construction insolvencies involving 3,013 companies registered in the UK emerged from unfair payment practices. The National Specialist Contractors Council (NSCC 2014) affirmed that “most construction firms are struggling to expand and invest in future development because of late and other unfair payment plagues particularly SMEs contractors”. Ye and Rahman (2010) argued that the

timeliness of payment is important to circumvent failure risks that could endanger a project's viability, as well as the profitability of the business.

Outside the UK, the European Payment Report (2019) revealed that delayed payments continue to soar throughout European countries' economies; with two-thirds (62%) of construction companies having their payments delayed due to unfair payment arrangements; thereby putting businesses at risk of insolvency. The report is similar to the European Commission Payment Directive (2011/7) that claimed "… tens of thousands of small and medium-sized businesses collapse annually in Europe as a result of late payments and other unfair commercial practices among businesses...". Similarly, the European Payment Report (2016) stated that "though signs of recession and debt risk are imminent in Europe; … unfair payment practices are the most problematic commercial issue to companies". The demise of Carillion Plc in 2018 as the UK's second-largest construction and facilities contractor, illustrates the scale of the late payment epidemic as an ongoing and worsening issue among large and small businesses in the construction sector.

Moreover, Carillion Plc's recent demise is unique to understanding the scale of unfair payment practices in the UK construction industry. For instance, the company was a signatory to the UK government's prompt payment code, yet it had the reputation of being a notorious late payer in the industry. Cherry (2018), the Federation of Small Businesses chairman, noted that Carillion had its suppliers wait for 120 days to receive payments for monies owned to them. He affirmed that "…I wrote to Carillion back in July 2017 to express concern after hearing from FSB members that the company was making small suppliers wait 120 days to be paid...". Carillion's demise is estimated to leave a debt of £2 billion in outstanding payments owed to 30,000 small and medium-sized subbies and suppliers (Loxley 2018a). Indeed, lessons learnt from Carillion's collapse have highlighted the impact of unfair payments in the UK construction industry. The recent payment data released by Build UK (2019) under the new rules of "benchmarking industry payment performance "revealed that none of the construction industry's biggest contractors paid within an average of 30 days and on time. For instance, payment

data published by Build UK illustrate that Murphy Group Plc had the longest record of paying their supply chain with an average of 66 days, whilst Willmott Dixon had a minimal of 33 days (Price 2018).

Besides, within the sphere of payment practices in the construction industry, there seems be scepticism regarding clients/contractor's commitment to various fair payment initiatives (such as existing codes, charters and regulations etc.) designed to alleviate the problem. Although various studies about late payment exist; these studies often look at the causes and effects of unfair payment practices. Yet, there is little research concerning how to enhance fair payments within the construction supply chain.

1.3 Context and Rationale of the Research

Unfair payment practices to businesses is undeniably a global phenomenon and the issue is not limited to the UK alone. The Federation of Small Businesses (FSB 2019) claimed that "late payment is endemic to construction companies whether big or small". For instance, a recent publication by the Asset Based Finance Association (2016) illustrates "a sharp rise of 22% in late-payment related cases, with most construction companies having to wait 82 days for their invoices to be paid compared to 28 days stipulated in their contracts".

The findings further revealed that a contingent payment factor often associated with long supply chains within the sector usually intensifies unfair payment practices in the construction industry. The Construction Excellence Board (2016) stressed that construction consists of a high level of disaggregation and fragmentation within its supply chain, therefore constraining the contractors' ability to receive timely payments.

A survey conducted by NSCC (2014) claimed that "archaic payment practices contribute significantly to late-payment" dilemmas in construction. For example, the NSCC (2014) survey showed that 700 construction firms wrote-off £250 million in late payment and retentions debts in one year. This amount consists of 6.6% of

their turnover. The report further reveals that 4 out of 10 specialist contractors faced various degrees of unfair payment practices annually. There is reason to believe that small contractors bear a greater burden of late payment compared to large contractors. Connell (2014) argued that from an entrepreneur's perspective, SMEs tend to suffer tighter financial conditions and economic losses when exposed to late payments. For example, small scale construction businesses spend on average 130 hours each year chasing payments, at an average cost of £1,500 per business (Construction Excellence 2016). The report further stressed that this category of businesses (SMEs) incurred £180 million in debt regarding interest charges on loans used to execute work for clients.

Another dimension to unfair payment practices in the UK construction industry is unpaid retentions. For example, research by the British Woodworking Federation (BWF 2018) affirmed that £10.5 billion of an overall construction turnover of £220 billion is held in retention by clients as part of the contractors' funds. Furthermore, the BWF (2018) report asserted that over the last three years, £7.8 billion in retention monies had not been paid to subbies and suppliers within the supply chain. Parallel research by Pye Tait Consulting (2017) on behalf of the Department for Business, Energy and Industrial Strategy (BEIS) affirmed that half of contractors' payments for completed work had been held in retentions for the past three years, up to 2019. Recent findings by the Construction Enquirer (2019) confirmed that adverse payment practices were common in construction businesses with a total amount of £21.6 billion in retentions illegally withheld by Tier 1 clients from their supply chain.

On the other hand, the Federation of Master Builders (FMB 2017) revealed excessive payment terms and practices were hindering construction businesses. The report affirmed that 70% of small and medium-sized contractors were exposed to 'cowboy clients', that would seek for longer payment terms or delay payments to recipients on spurious grounds. Sarah McMonagle (2017) claimed that "nearly a quarter of construction SMEs usually wait for more than four months to receive payments from their clients". The European Payment Report (EPR 2019)

acknowledged that the UK had longer payment terms compared to other European countries and that there was no evidence to suggest the problem was abating.

1.3.1 Government Context

In the last two to three decades, the UK government has enacted various legislations, rules and acts to alleviate unfair payment practices in the construction industry. For instance, the Housing Grants Construction and Regeneration Act 1996 (HGCRA) and the Scheme for Construction Contracts Regulations 1998 were designed to enhance payment practices and outlaw conditional clauses in the UK construction industry.

Kumaraswamy (2011) described HGCRA as a benchmark and catalyst for spearheading the development of different legislations and acts such as the Local Democracy Economic Development (LDEDC 2009), the Late Payment of Commercial Debts Regulation (2013), the Small Business, Enterprise and Employment Act (2015) and the Public Contract Regulation (2015). Furthermore, the Construction Excellence (2016) report examined 19 separate payment initiatives (charters, codes and regulations) launched by the government to curb unfair payment practices and discovered that despite various government legislations and private initiatives, there was a significant increase in the number of cases relating to unfair payment practices in the construction industry. For example, the Construction Supply Chain Payment Charter, a privately managed agreement, set out 11 fair payment commitments for their members to adhere to; such as enhanced payment practices including a collaborative culture and a sustainable supply chain for projects. An investigation by Construction Excellence (2016) showed that cases of unfair payment practices were widespread among members of the Construction Supply Chain Payment Charter. These are clear indications that the problem of unfair payment practices defies various government and private initiatives designed to curb them.

Additionally, most standard forms of contracts (SFoCs) are designed to provide adequate mechanisms to ensure payments are made promptly within the

construction supply chain. Standard forms of contracts such as JCT and NEC consist of strict payment timelines and the provision of a 28 days payment period (that is from the date a contractor submits their interim payment application to the project's quantity surveyor or client's representative for payment).

Apart from rules and regulations, some UK government departments have the right to pursue legal claims against organisations that default in paying their business partners. For example, the UK Department for Business Innovation and Skills (BIS) has the power to prosecute organisations and individuals that practice late and other unfair payment practices across in public and private sectors. The BIS works with the Crown Commercial Service (CCS) to enhance prompt payment policies for governments and public sectors. Griffiths et al. (2017) claimed that one of the most significant features of government-specific initiatives to control unfair payment practices was the introduction of project bank accounts (PBAs). PBAs was introduced by the National Audit Office (2005) as a second security for payment measures following a raft of late payment problems and the initiation of different legislations by many local and international jurisdictions.

On the other hand, the UK government and the leaders of notable top private companies have voiced their concerns against the problems of unfair payment practices in the construction industry. For example, Kelly Tolhurst, the Minister for Small Businesses, Consumers and Corporate Responsibility (2018), orated that "though we have introduced a package of measures to build a culture change in payment practices …*" the recent collapse of Carillion has highlighted the continuing prevalence of unfair payments affecting small and large companies".*

Rachel Reeves, the Chair of the Business, Energy and Industrial Strategy Committee (BEIS 2018) claimed that *"the problems caused by late payments from large contractors are well publicised and we know they can often have a devastating impact on small businesses ... It is high time to get a better understanding of payment practices that have potential to enhance the old construction industry commercial problem … as well as understand how big firms*

treat their small suppliers who are the lifeblood of the UK economy." This statement and other government initiatives mentioned above are direct confirmation that the UK government has a strong desire to find sustainable solutions to deep-rooted unfair payment practices in the construction sector.

1.3.2 Industrial Context

Historically, the construction industry has a chequered history of unfair payment practices. Construction Excellence (2016) claimed that "most construction companies spend on average 130 hours each year chasing payment; at an average cost of £1,500 per business". Available statistics show that SMEs doing business in the construction sector are often victims of unfair payments (Connell 2014). Moreover, many industry stakeholders have spoken openly concerning grossly unfair payment terms, acknowledging the need to improve endemic unfair payment practices in the construction industry. For example, it could be argued that the scale of the late payment problem in the construction industry led to the formation of the Construction Leadership Council (CLC) in 2014; consisting of major UK clients and contractors, suppliers and other stakeholders. The CLC's primary objective was to proffer long-lasting solutions to late payments in construction. The CLC (2014) came up with a payment charter backed by the UK government stating that all contractors under the umbrella of the Council must be paid for work done within 30 days.

Though the intent and purpose of CLC (2014) is undeniably a superb idea; there is no substantial evidence to prove that payment practices have improved considerably in the construction industry. Richard Beresford (2018) claimed that "… late payment and retention of funds remain the biggest problem to the UK construction industry, despite widespread recognition that late-payment practices are unacceptable; … there is no sign that the problem is likely to subside in the nearest future …".

Conversely, Suzannah Nichols (2016) argued that although there is a likely temptation to blame clients for not paying contractors on time; most late payments cases in the construction industry are usually contractors' faults

that stem from the technicalities of payment procedures or poor valuation exercises. Indeed, payment practices in the industry show that some contractors, especially the SMEs, rarely use experienced quantity surveyors or cost consultants to prepare their periodic valuations. Yet there have been attempts to ratify technical mistakes in some contractors' valuations; normally adding a week or more to the overall payment duration. Perhaps there is a need for industry practitioners to engage qualified cost and quantity surveying professionals to cross-check periodic valuations before onward processing by the clients.

Plimmer (2013) claimed that some industry practitioners and even stakeholders seemed to believe that unfair payment practices, particularly late payments, had become an acceptable norm in the construction industry. Arguably, one of the greatest challenges facing stakeholders is cynicism concerning the effectiveness and implementation of these government measures in addressing unfair payments.

Moreover 80% of business to business (B2B) transactions conducted within the UK are made under trade credit practices; with the business supplier agreeing to extend the payment period for goods and services (Paul and Wilson 2006). Trade credit is known as deferred payment on the basis of “deliver now and then pay later”. However, the consensus argument concerning the impact of unfair payment practices on small firms is often centred towards whether government interventions through legislations and credit management practices help to alleviate the problem.

Moreover, the Association of Chartered Certified Accountants (ACCA 2015) are of the view that although most trade credit is an important source of short-term funding for SMEs compared to bank lending or other formal finances; nonetheless, not all credit-based transactions proceed smoothly given that often, the timing of the payment does not match the expectations of either suppliers or buyers, resulting in further delayed payments.

In addition, there is little industry research about the role of the client-contractor relationship *vis-à-vis* unfair payment practices. Hinze and Tracey (1994) argued that little is known about the actual negotiated terms and amicable working relationships that exist between clients and contractors. Ashworth (2006), Russell (2007) and Chalker et al. (2016) all stressed that there was a need for further investigation into the client-contractor relationship, particularly between main contractors and subcontractors (MC-SC), asserting that MC-SC relationships were riddled with biased commercial intentions. They argued that this was based on the fact that most main contractors take advantage of subcontractors and suppliers by drafting contracts that are one-sided or non-negotiable 'take-it or leave-it' agreements.

1.3.3 Academic Context

There are notable academic works about unfair payment practices. For example, Cotter (2005) affirmed that unfair payments issues could be inadvertent; although the ripple effects were likely to affect the entire supply chain. Kenley (2002) suggested that unfair payment practices were deliberate strategies that could best be described as "collect the money early and delay passing the cash to the supplier chain". Most clients and contractors use this strategy to boost their liquidity or working capital. The Australian Procurement and Construction Council (1996) opined that multi-tiered hierarchical structures, together with cascade payment obligations, influenced unfair payments in the industry. Besides, Pettigrew (2005) argued that the industry culture of 'work first, get paid later' was another dimension to unfair payments.

Hughes' et al. (1998) publication about payment defaults in the construction sector asserted that the 'cannot' and 'would not' pay attitudes of payers largely influenced the existence of unfair payments to construction contractors. The authors further claimed that unpaid retentions had worse detrimental effects on a subcontractor's cashflow; although this is largely considered a risk protection mechanism for clients.

Furthermore, there are numerous academic works about commercial risks regarding insolvency due to unfair payment practices. For example, Latham's report (1994) titled 'Constructing the Team' stated that "the cascade system of payment in the construction industry normally follows a pattern of client to main contractor, main contractor to subbie and subbie to supplier or vendor … this type of payment mechanism is a recipe for delayed payment …. and has potential to expose small contractors involved in the supply chain to insolvency''. In terms of productivity and performance, Abdul-Rahman et al. (2009), Jiang (2012) and Auydha (2012) opined that timely payments to contractors contributed significantly to desirable project completion quality, cash flow positioning and the continuity of works on site.

Moreover, there is little research on whether timely payments influence the profitability and positive cash flow of contractors. From an academic point of view, there is little emphasis about contemporary causes of unfair payment practices, the scale (that is the magnitude) of the problem within the construction sector, the impact of unfair payments on contractors' profitability or development of an initiative with potentials to enhance fair payment practices.

Besides, many academic studies have proffered various solutions in the past; yet the problem of unfair payment practices seem to be increasing by leaps and bounds. Moreover, unfair payment practices are often generalised as a form of payment problem, late payments, under payments, retentions and non-payments. For instance, Azman et al. (2013) stated that irregular cash flow influences the finances of most organisations, but the exact effect of irregular payments on a contractor's financial performance is yet to be established.

Kenyatta *et al.* (2016) affirmed that payment defaults in the form of late or under payments has adverse effects on contractors and their supply chains. Ramachandra (2013), in a published thesis, argued that the problem persisted because late payment risks adversely affected lower tiers in the construction

supply chain. Mbachu (2011) and Ansah (2011) suggested that causes of unfair payment practices could be a self-made problem; that is attributed to client or contractor error. Hence, there is a need to examine the role of different construction clients, the robustness of standard forms of contract and the client-contractor relationship in persistent unfair payment issues in the construction sector.

Moreover, there is a need to investigate the magnitude of unfair payment issues in the construction industry because the literature differs considerably regarding the scale of the problem in the lower and upper structures of the construction supply chain. For example, the BIS Research Paper (2013) categorised the contracting relationship and its structure within the construction supply chain using “tiers classification”. The term “Tier”, as defined within the report, is a commercial relationship between clients, contractors, subcontractors and suppliers engaged in the delivery part of construction works. The literature review shows that most studies about unfair payment problems tend to generalise the client-contractor relationship from a single perspective, that is from the Tier 1 client (public or private) to the main contractor. However, Kenyatta et al (2016) argued that there is a need to understand unfair payment issues from different clients’ perspectives to enhance fair payment practices.

Therefore, for better understanding of the research problem, this study seeks to examine issues of payments practices from three distinct construction clients’ perspectives. **Tier 1 clients:** major clients that pay for high value construction deliverables e.g. government authorities, property developers, private institutions and other funders. **Tier 2 clients**: main contractors in the construction sectors acting as clients to subcontractors. **Tier 3 clients:** subcontractors working with main contractors/Tier 1 clients acting as client to other subcontractors.

1.4 Aim & Objectives

The aim of the study is to develop a conceptual framework for enhancing payment practices in the UK construction industry. To achieve the aim of the study, the following objectives were considered.

1. To evaluate the robustness of payment procedures in various standard forms of contract used in the UK construction industry.
2. To determine the scale of unfair payment practices between different tiers of construction clients.
3. To investigate contemporary causes of unfair payment practices in the UK construction industry.
4. To ascertain the relationship between unfair payment practices and construction companies' business performance.
5. To evaluate the role of the client-contractor relationship on chronic unfair payment practices in the UK construction industry.
6. To develop a conceptual framework for enhancing payment practices in the UK construction industry.

1.5 Research Questions

Based on the study aim and objectives, below are the key research questions:

1. What are the contemporary causes of unfair payment practices in the UK construction industry?
2. How effective is the proposed framework for enhancing payment practices in the UK construction industry?

1.5.1 Study Hypothesis

Table 1.5 below illustrate two sets of null and alternative hypotheses for the study.

Table 1.5 Research hypotheses identified in the study

S/No.	Null Hypothesis	Alternative Hypothesis
H1	There is no significant relationship between construction companies' business strategies and unfair payment practices.	There is a significant relationship between construction companies' business strategies and unfair payment practices.
H2	There is no significant relationship between unfair payment practices and contractors' business performance in the construction industry	There is a significant relationship between unfair payment practices and contractors' business performance in the construction industry

1.6 Research Method

The study intends to adopt concurrent mixed methods to collect both quantitative and qualitative data. The plan is to collect the data separately, analyse and then merge results to obtain a more comprehensive understanding of the research problem. Moreover, a documentary review of archival data and case studies will be retrieved by the researcher to produce new insights through subscribing to reputable commercial and construction payment sources such as Build UK and Companies House website. The study adopts an explanatory type of research to provide a meaningful and accurate picture of industry payment practice in the UK.

1.7 Contribution to Knowledge

This study contributes significantly to the commercial, finance and construction project management body of knowledge. The study explores the commercial strategies adopted by construction businesses and clients, the realities of unfair payment issues and their influence on business performance in construction. The study developed a novel framework to enhance efficient payment arrangements in the construction industry. In specific terms, the study contributes to the enhancement of “commercial best practices” between clients, contractors and other supply chains. This contribution is based on the study’s novel drive to improve fair payment practices between client, main contractor and other supply chain.

The proposed framework has the potential to build a congenial atmosphere; with potentials to curb systematic commercial abuse that exists between clients, main contractors and subcontractors in the UK. Moreover, the study suggests ways to improve the current construction payment provisions and legislations by proposing strict legal measures to help curb the problem of unfair payment in the construction sector. Hopefully, the proposed framework will address chronic unfair payment practices ingrained in the construction sector.

Culturally, the study's contribution will reinvigorate the industry's poor image and practices that have existed for years. The prevalence of an unfair payment culture in construction will be minimised by the proposed framework that encourages the prompt and adequate payment of invoices from Tier 1 clients to subcontractors and suppliers in the project. Thus, the current cascade payment culture will be revolutionised towards a direct payment method to the entire supply chain. Moreover,the proposed framework seeks to remove conditional contract clauses such as "pay-when-paid" or "pay-if-paid" to improve the industry's culture.

The economic benefit of the study cannot be overemphasised because the proposed framework will enhance contractor cashflow, reduce long payment periods and inject needed transparency into the payment culture of the construction industry. Consistent cashflow improves financial health and business performance, with potential for job creation, more business opportunities, productivity, investment, innovation and economic stability. Moreover, sufficient cash drives a good and entrepreneurial spirit that enables both the diversification of business and a multiplier effect to other sectors. Moreover, the proposed framework will provide adequate cashflow to construction contractors that will help businesses generate more wealth and boost economic growth. Overall, the viability of construction businesses will help to alleviate chronic insolvency that is common to businesses in the sector.

The study is sustainable because the developed framework is capable of reducing time wastage (time organisations spend) in chasing payments and costs incurred due to unfair payment practices.

1.8 Scope of the Study

The study's scope covers the UK construction industry; commercial management, contract and construction project management, payment regulations, acts, payment mechanisms, business performance and relationship management between clients and supply chains. The researcher is aware that many studies have been carried out on late payment problems rather than unfair payment practices, which broadens the generalised context. Also, the study will provide a robust evaluation of contemporary factors that influence unfair payment practices and will contribute to the development of a holistic approach to enhance fair payment practices.

1.8.1 Structure of the Study

The study is divided into ten chapters. The structure of each chapter is summarised as follows:

Chapter 1 sets out the introduction and background of the study problem. The chapter provides the research aim and objectives, the research questions and hypotheses, insights into the research method, contribution to knowledge, scope of the study and brief definitions of key terms and phrases.

Chapter 2 provides an overview of the literature and fundamental knowledge and concepts related to the research study. This entails a review of the UK construction industry, payment trends, forms of payments, types of unfair payment practices, their causes and business performance in the construction industry.

Chapter 3 is an extension of the literature review chapter that examines existing legislations and regulative measures designed to curb unfair payment practices in the UK. The chapter also reviews contractual theories and clauses related to payment practices.

Chapter 4 provides details about the research methodology adopted for the study. The chapter provides the research philosophy, research design, population sample, justification for the chosen research method, data collection techniques and analysis, reliability, validity and ethical consideration of the study.

Chapter 5 presents quantitative data analyses obtained via questionnaire surveys and archive data from UK Companies House.

Chapter 6 presents the results of archival analyses based on documentary evidence obtained from Build UK, UK Companies House, case studies and other reliable sources.

Chapter 7 presents the qualitative data analyses and summary of the interviewees' perceptions of the study problem. All interviews in this chapter were based on designed semi-structured interview questions.

Chapter 8 provides a robust discussion concerning the findings from the quantitative, qualitative and archival analyses. The chapter also compared findings from the study with the reviewed literature.

Chapter 9 entails the development of a framework to enhance fair payment practices between clients, contractors and other supply chains in the UK construction industry. This chapter is divided into two sections: the development of the framework and its validation by construction professionals.

Chapter 10 highlights the conclusions and recommendations of the study based on the study's set objectives in Chapter 1.

1.8.2 Terms, Concepts and Definitions

Payment: refers to monies used for remuneration or compensation in exchange for services, goods, work done or performance for an obligation. Kokkola (2010) defines 'payment' as a transfer of funds which discharges an obligation on the part of a payer *vis-à-vis* a payee. Payment to a construction contractor is a monetary consideration for the performance of works or services given in the contract.

Late payment: the phrases '"late" or "delay" payments are often used interchangeably in many literatures and studies. Late payment is defined as the failure of the paymaster to pay within the period of honouring the certificates as provided in the contract (Harris and McCaffer 2003). Late payment normally occurs when payment is delayed after its contractual due date or is paid outside of the agreed payment period.

Unfair payments: refer to anything that is a gross deviation from good commercial practice and is contrary to good faith and commercial dealings. It also includes the nature of the goods or services in question; and whether the purchaser has any objective reason to deviate from the stipulated/contractual payment terms (BIS 2017).

SMES: these are generally defined as enterprises with less than 250 employees. The European Commission affirms that for an enterprise to be considered as small or medium-sized, two preconditions must be met. The number of employees must be between 49-250 with an annual turnover less than £30 million.

Cash flow: the movement of money into and out of the business or project. Money going into a construction project comes from payments received for work completed, payments for progressing work, payments for materials on site and payments for services rendered to other organisations. Money going out is payment for materials, subcontract payments, staff salaries and repayment for loans as well as the purchase of capital equipment. The difference between money going in and out is called net cashflow. As Lord Denning once orated, "...cash flow

is the lifeblood of the construction industry...” and regular flow is essential to a project’s success as well as the contractors’ business performance.

Valuation: the process of determining a fair price for a product, property or even service rendered by individuals or organisations. In a construction context, valuation is the measurement of the value of the construction work installed or erected on site during the commencement of works.

UK Construction industry: the segment of the UK economy that is mostly concerned with the provision of construction materials and products, building services, manufacturers, professionals, installers of construction related work and construction clients. Basically, the construction industry consists of organisations that are related to the design, build, operation and refurbishment of buildings.

Standard forms of contract (**SFoCs):** pre-drafted forms of contracts issued by construction professional bodies and trade organisations (such as the Royal Institute of British Architects RIBA, the Royal Institution of Chartered Surveyors RICS, the Institute of Civil Engineering ICE, the Construction Confederation and the National Specialist Contractors Council, etc.) to codify contract administration practices, allocate risks and regulate the economic transactions of parties within a contract. According to Powell (2012), SFoCs are simply a standardised set of terms designed to suit different types of project and various types of procurement arrangements

Adhesion Contract: readymade terms or contracts drafted by the party with greater bargaining power, leaving the weaker party with one choice; either to accept the contract’s terms or reject it. Most adhesion contracts are non-negotiable but enforceable at times.

Subbies: this abbreviation is commonly used in the construction industry to denote or refer to subcontractors.

Tier: denotes the chain and level of firms linked through the series of contracts in the project. The UK Construction Industry Strategy report (2013) titled “Supply Chain Analysis into the Construction Industry” describes the construction supply chain as tiers, whereby Tier 1 is termed the main contractors; Tier 2, specialist contractors and Tier 3, labour-only sub-contractors.

Tier 1 clients: in the context to this study, a Tier 1 client is deemed to be the main client of a construction project (for instance public authorities, developers, private individuals, institutions and funders) that pays for high value construction deliverables.

Tier 2 clients: refer to principal contractors with a high turnover of billions of pounds operating and procuring high value construction works. For example, Balfour Beatty Limited, Carillion Plc (before its insolvency in 2018), Laing Rouke Plc, Costain Limited, Kier, Vinci, Interserve, Willmott Dixon, Galliford Try and other large construction companies listed among the top 100 construction companies in the UK from 2015 to 2020.

Tier 3 clients: refer to subcontractors and specialist contractors with a direct commercial relationship with Tier 1 and Tier 2 clients.

Tier 4 clients: refers to subcontractors and suppliers employed by Tier 3 clients.

Project Bank Account: often abbreviated to ‘PBAs’ in the construction industry. A PBA is a ring-fenced bank account that transfers payment directly and simultaneously to main the contractor, subcontractors, suppliers and other members of a construction supply chain (Cabinet Office 2012a).

Business performance: this term is often used interchangeably to denote the financial outcome of a business. According to Smith and Reece (1999), business performance can be defined as the operational ability of a company to satisfy the desires of major stakeholders and must be measured to an organisation’s accomplishments. In construction, business performance hinges on the profit and

turnover of contractors. Profits are residual amount of monies obtained by a contractor on settling project expenses like preliminaries, subcontractors' accounts rendered, payments for materials, labour, overheads and many more. Turnover is the total income accrual for a company's accounts per year.

1.9 Summary

This chapter provided introduction to the studied problem. The chapter examined the background and context of the research and its rationale, aim and objectives. Subsequently, the chapter explained the scope of the study, the research questions, the study's contribution to knowledge and some brief definitions. The next chapter seeks to review the existing literature in the area of construction costs and project management.

CHAPTER 2

Unfair Payment Practices in Construction

2.1 Introduction

This chapter reviews the existing body of literatures surrounding unfair payment practices in the UK construction industry. The chapter reviews the key features and trends of unfair payment practices. The chapter commences with an overview and composition of the UK construction industry, forms of payment and types of construction organisations. The background to unfair payment practices from the global to UK context is also reviewed. The chapter also appraises contemporary causes and effects of unfair payments and their causal sequence for business performance in the construction industry.

2.2 Composition of the UK Construction Industry

The construction industry is considered the largest economic sector in the UK and a key driver for national growth. The Office of National Statistics (ONS 2019) affirmed that the industry contributes about £117 billion to the UK economy with 2.4 million jobs; equivalent to 7% of the total UK workforce.

According to the Department for Business, Energy and Industrial Strategy (BEIS 2017), the UK construction industry is classified into three main sectors: construction contracting, services and related products. This is further broken down into nine sub-categories that provide a range of activities, such as building construction, civil engineering, specialised construction activities, architectural services, quantity surveying, whole/after-sale of products and materials, renting and leasing, installation, manufacturing and other services. Nevertheless, traditional contracting businesses are the largest sub-sector in the UK construction industry accounting for 70% of the total value added and sectoral jobs, as illustrated in the figure below:

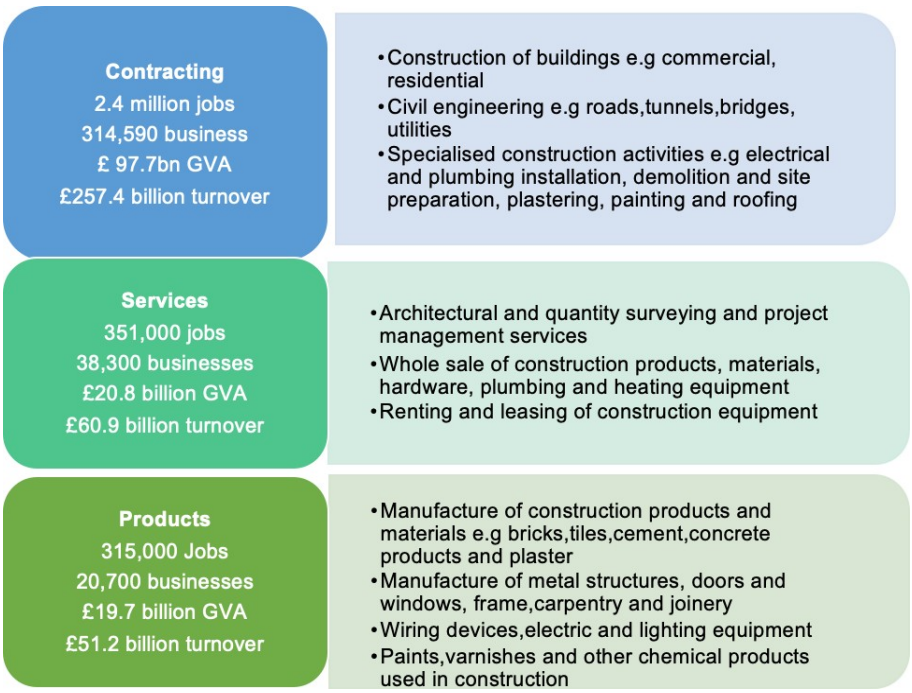


Figure 2.2: Composition of the UK Construction Sector (adapted Rhodes 2019)

2.2.1 Size and Distribution of Firms

Figure 2.2.1 presents a pictorial view of construction firm categorisation. The data show that majority of firms that make up the construction industry consist of less than 50 people and that less than 20,000 firms employ 250 or more persons. Moreover, 80% of construction firms are sole proprietorships owed by single individuals or are family businesses.

Construction companies that employ more than 250 persons are normally referred to as large contractors and they are most susceptible to using unfair payment practices against subcontractors and suppliers in the industry.

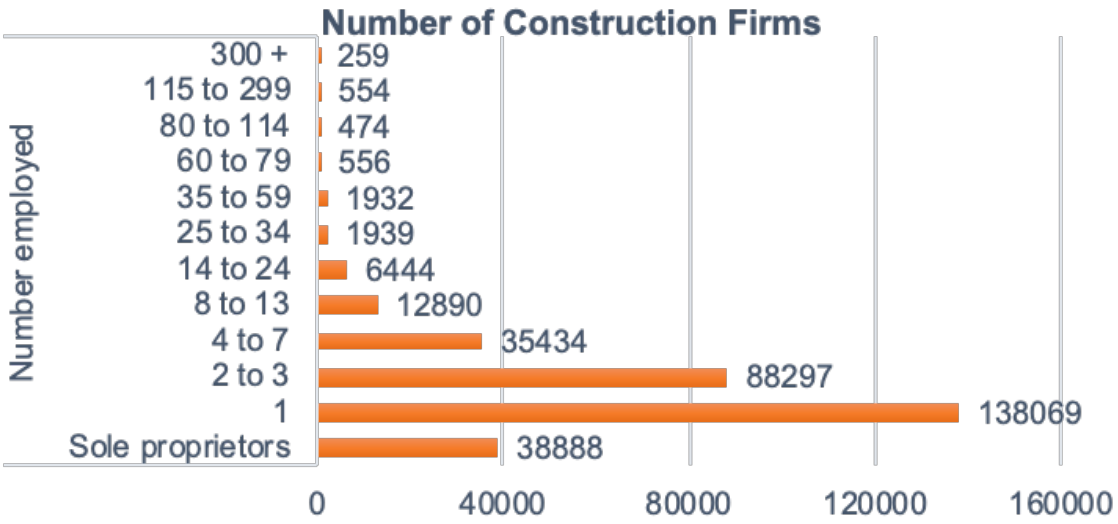


Figure 2.2.1: Number of Construction firms in the UK in 2018 (adapted from Statista 2020)

2.2.2 SMEs

In the UK, traditional contracting businesses are heavily reliant on SMEs. The UK Department for Business Energy and Industrial Strategy (2019) asserted that 99% of businesses operating in the UK construction industry are SMEs. The definition of SMEs in construction varies from one country to another, therefore the real meaning is often difficult to state in a simple or straightforward manner. Arocena and Nunez (2010) classify SMEs as including artisans, ground works firms, painting and decorating firms, joinery firms, brick work firms, mechanical firms and plumbing firms, etc.

Brisoce et al (2001) categorised SMEs as including most subcontractors and suppliers within the construction industry. Conversely, the UK Company Act 2006 asserted that the definition of SMEs sets a company threshold of less than 250 employees, a balance sheet of less than £12.9 million and an annual turnoverof less than £25.9 million. Therefore, in this study, the term SME's denotes construction companies and all subcontractors, suppliers and tradesmen offering an array of construction work and services.

BERR (2008a) argued that as the majority of traditional contracting business are SMEs, their involvement within the supply chain is inevitable. For instance, a

typical supply chain for a project consists of a huge number of SMEs that play a significant role in the successful delivery of construction. Yet, this category of companies is mostly prone to unfair payment practices.

Euler (2017) report acknowledged that very often, SMEs encounter many challenges and complexities in running and growing their businesses, with deferred payments and unfair payments practices on goods and services deemed to be their greatest risk and concern. In addition, the BEIS report (2018) articulated that “most SMEs in construction are adversely affected by a range of payment problems when dealing with large companies or forming part of their supply chain”.

The FSB report (2018) revealed that in the last five years, two-thirds of suppliers had experienced lengthened payment terms imposed on them by main contractors. For example, Carillon Plc, the UK’s largest construction company before its insolvency, had standard payment terms of 90 days with a maximum of 120 days. Kier, another large company, had standard payment terms of 60 days with a maximum of 150 days, while John Sisk had standard payment terms of 75 days with a maximum of 120 days.

Furthermore, the report asserted that 12% of SMEs surveyed had been asked for discounts for prompt payment, with flat fees of 6% to remain in a large contractor’s supply chain and 3% discounts on good and services that had already been supplied. This is clear evidence that SMEs are exposed to an array of unfair payment practices, including longer payments terms and unfavourable practices imposed by main contractors.

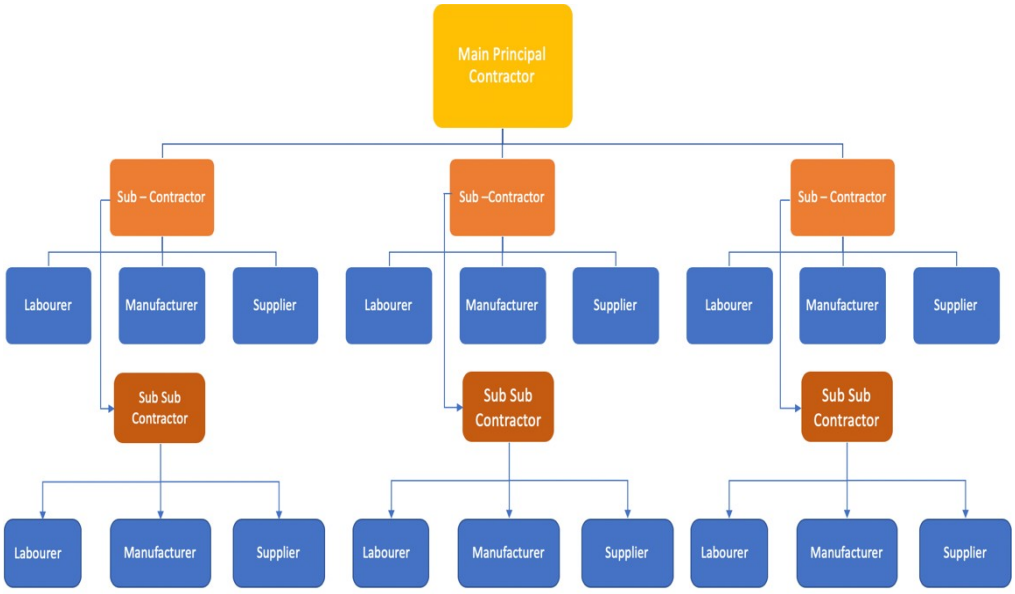
Wheeler (2016), the Managing Director of Construction Finance at Bibby Financial Services claimed that “….all too often we see the battle of David versus Goliath in the construction industry, whereas larger contractors and clients often wield the power to impose some sort of terms or practices ...; and SMEs are usually reluctant to negotiate or challenge unfair payment terms imposed on them for fear of losing future work and reputation...”

2.2.3 The Construction Supply Chain

SMEs form a significant part of the construction supply chain and this category of companies is described as complex and fragmentary in nature. Briscoe et al. (2001) argued that whether a small or large project is undertaken in construction, a number of hundreds if not thousands of small and medium-sized contractors cut across the supply chain spectrum.

BIS (2013) claimed that the best way to describe the construction supply chain is through relationships developed by all parties to a contract. For example, Tier 1 contractors consist of main contractors with a direct commercial relationship with their clients. Tier 2 contractors are predominantly subcontractors and suppliers with a direct commercial relationship with the main contractors. Meanwhile, Tier 3 contractors are normally at the lower end of the spectrum in the contracting chain. This category of contractors is made up of subcontractors and suppliers with a direct relationship with Tier 2 subcontractors. Arguably, this study seeks to view the structure of the construction supply chain from three distinct construction clients' perspectives: Tier 1 clients (private or public) to Tier 2 clients (main contractors), Tier 2 clients to Tier 3 clients (subcontractors), Tier 3 clients to Tier 4 clients (subcontractor-subcontractors) and Tier 4 clients and Tier 5 clients (suppliers or vendors).

Figure 2.2.3 illustrates a hierarchical structure of the construction supply chain, where payments flow from the client to main contractor, then to subcontractor and down to the other parties within the supply chain. If the flow of payment is delayed or disrupted by one party, the consequences will then cascade to all parties within the supply chain.



Schematic representation of construction supply chain

Figure 2.2.3 Schematic Representation of the Construction Supply Chain

2.3 Insolvency Risk

Key challenges originating from financial, economic and political crises always impede the value of construction output and in most cases, lead to insolvency risks. Unfair payments practices (especially late and unpaid retentions) have left many construction firms on the brink of cashflow problems and liquidation, such that it has become the nature of how firms operate in the industry.

Recently, a government report by ONS (2019) confirmed a sudden 12% increase in insolvency cases in construction companies in 2018 which had been increasing since 2013. Figure 2.3 illustrates companies' insolvencies by industry, with construction having 3,106 cases; followed by administrative and support services with 2,585; and then wholesale and retail with 2,409. The data further suggested that out of 1,857 firms that had collapsed, 62% of construction firms had specialised in different activities such as groundwork, demolition, electrical and plumbing installations, while 32% had constructed building projects and civil engineering works.

Peter and Arewa (2018) alluded that insolvencies experienced by most firms were attributed to lack of cash due to thin profit margins and financial pressures. Kelly (2020) confirmed that despite a firm's unique traits towards insolvency, most companies experienced cashflow problems as a result of unfair payments. Besides, different researchers have argued that the "issue of late, delayed and non-payment has left many construction companies grappling with cash flow problems" (Ramachandra 2015).

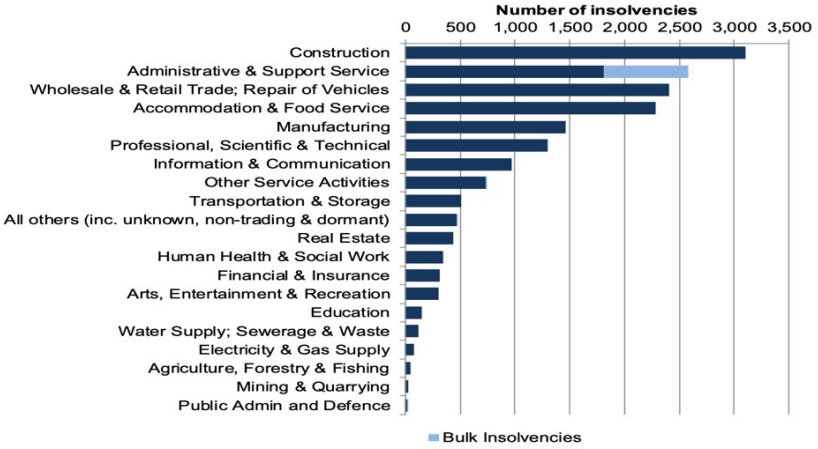


Figure 2.3: Total new company insolvencies in England and Wales (adapted from the Office of National Statistics 2019)

2.4 Payment Forms and Related Issues

Payment is a key metric of the exchange and transfer of funds for all transactions, whether they involve the acquisition of goods, services or financial assets.
In construction, payments to contractors are often spelt out in contract arrangements and are normally monetised. Payment is monetary consideration for work done or work that is yet to be performed within a stipulated time frame.

Amer-Ali (2006) argued that unlike other industries, payment is a major concern for construction companies due to contractors' large outgoings and longer payment durations, the expensive nature of the works to be carried out and most importantly, contract payment clauses based on the completion of the construction works. For a better understanding, contractors are in most cases required to perform for up to one month before applying or receiving payments from clients.

This payment method contrasts to what is seen in other industries such as aviation, tourism, pharmaceuticals etc, where payments are made before services are rendered. Moreover, the longer duration and huge capital outlay involved in the construction process creates financial burdens and cashflow pressures for many construction contractors, as most of them operate on poor margins with a strong dependency on payments.

2.4.1 Significance of Payments to Contractors

Regular payment to construction contractors is a significant element that allows the contracting organisation to pay for expenses incurred in carrying out works on site, thereby permitting completion of a project. Jiang (2012) and Hasmori et al. (2012) posited that the importance of payments cannot be overemphasised in projects, because the cashflow position of any contracting firm has a greater deal to do with performance. Figure 2.4.1 illustrates a typical example of a contractor's cashflow, with payments coming from interim/stage payments, payments for completed works, retentions, final payments, bank loans, sale of company assets and shareholders' funds, etc.

While the outgoing payments in figure 2.4.1 denote money going out of a contractor's account such as office running costs, management staff salaries, payments to subcontractors or suppliers, payments for plant hire and site labourers. The difference between the cash inflows and outflows is termed as net cashflow. The industry norm however, is that the contractors spend a huge amount of monies in carrying out works before receiving payments from the client. This means project cashflow is dependent on the contractor's working capital or on receiving funds from banks, such that any delayed or later payments could lead to contractors completing with a negative balance in their accounts.

Indeed, most contractors rely on interim payment as a major source of income for the successful running of a construction business. This aligns with Lord Denning's famous phrase: "payment is a lifeblood of the construction industry". The National Construction of Sri Lanka (NCSL 2008) argued that timely payments to contractors

are pivotal in the construction business because it's help boost working capital, drive efficiency and optimise the construction process.

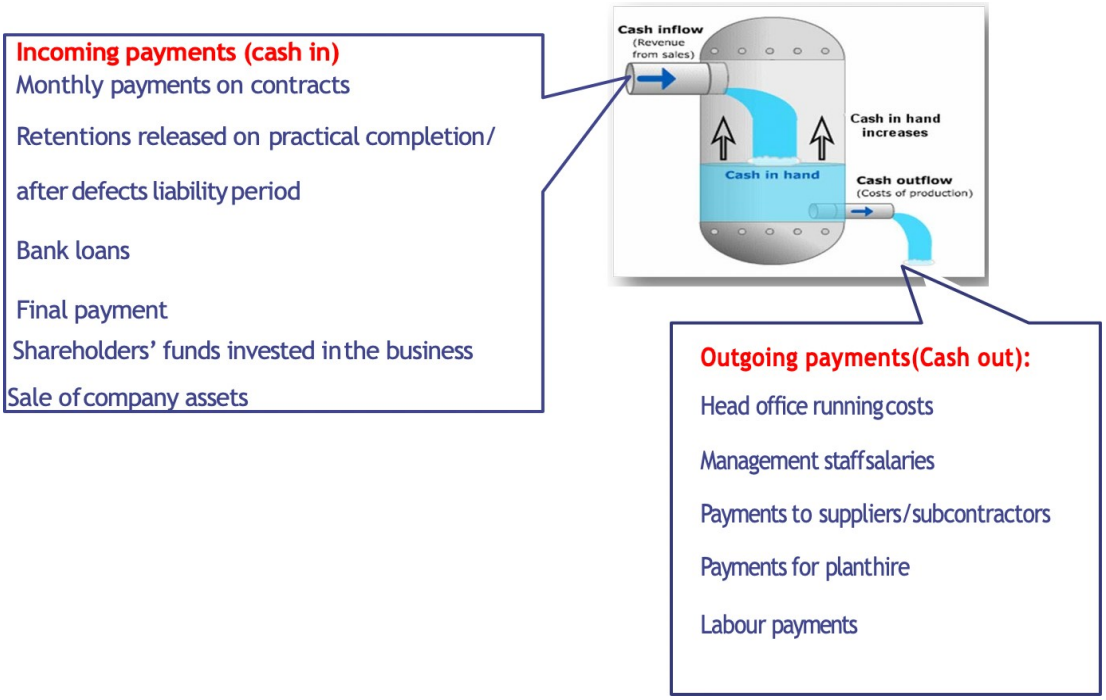


Figure 2.4.1 Contractor's incoming and outgoing payments (adapted from Arewa 2017)

2.4.2 Payment Mechanisms

Traditionally, payment mechanisms from clients to contractors are based on work done and through instalments. Payments in instalments are referred to as interim or progress payments and are mostly affected by the issuance of an 'interim certificate'. Judi and Rashid (2010) affirmed that depending on the type of contract, the weekly or monthly disbursement of payments to contractor is based on the valuation of work carried out by a quantity surveyor.

Basically, the purpose of an interim payment is to ensure that the contractors are paid for work carried out on site and that they have sufficient funds to progress with the remainder.

Eugenie (2016) described progress payment as a disbursal portion of construction monies from client to contractor after the completion of a certain stage of works in a project.

Generally, most construction projects take a substantial amount of time to complete and a large amount of money, which is greater than the financial strength of the contractor (or subcontractor). Therefore, regular payment by instalments curbs the need for a contractor to seek for additional funding as well as the cost of borrowing (Murdoch and Hughes 2000). Halpin and Woodhead (1998) argued that often there is a time lag between when contractor incurs expenses and getting paid for the work done, meaning not receiving regular payment on time tends to drive contractors to brink of insolvency.

Similarly, a retention payment is an amount withheld by a client to ensure that the work is properly executed and to mitigate the risk of defect liabilities. Hughes et al. (2000) were of the opinion that a retention payment is an act of performance catalyst and a deterrent against defective work. In the UK, most SFoCs provide an adequate mechanism for pre-agreed amounts of retention payments (usually 3-5%) and for their disbursement at intervals in the project.

An advance payment is also a common type of payment in the construction industry. It is a payment agreement that allows clients to pay contractors in advance for work not yet performed up to a limit of 15% to 20% of the contracted sum. This type of payment gives contractors a financial boost to commence the works, without seeking for additional funding or external borrowing. However advance payments are common in developing countries due to insufficient financial outlays and are often perceived to encourage corruption (Arewa and Farrell 2015).

In a nutshell, common types of payment mechanisms in construction can be categorised based on time and performance factors as follows:

a) Periodic payments: these are based on a length or portion of time. It is a situation where the contracting parties agree to payment terms based on a certain length of time. The frequency of periodic payments can vary from monthly to yearly, depending on the contractual arrangement.
b) Phase/Stage: this refers to a situation when payments are made at specific phases or stages of the works as agreed in the contract conditions.
c) Performance payment: a payment system based on the total value of the works executed by the contractor at intervals or on a periodic basis. The frequency of periodic payments could vary from fortnightly to monthly, depending on the contractual arrangement. In reality, quantity surveyors are usually engaged to measure the work performed on an interim basis, for which contractor will be paid accordingly.
d) Advance payment: this refers to a situation where a sum of monies is paid to a contractor before the execution of works on site.
e) Final payment or payment after completion: this refers to another form of payment triggered by the completion of all activities scheduled before issuing payment to a contractor.

Apart from the types of payment mechanisms stated above, other forms or methods of payment that are commonly used in construction include target cost, reimbursable, cost-plus fee, fixed fee, guaranteed maximum price; lump sum, open book accounting, mechanic lien, incentive contracting and trade credits, etc. These types of payment are normally prescribed by collaborative forms of contract such as NEC, ACE PPC 2000, CIOB Complex Construction Contract 2013, etc. Generically, regardless of the types of payment in the construction sector, certain project conditions and client circumstances usually influence when contractors are paid.

2.5 Types of Unfair Payment Practices

The UK Department for Business Innovation and Skills (2017) report titled "Challenging Grossly Unfair Payment Terms and Practices" defines "unfair payment" based on the Late Payment Act (1998) provision, Section 4 subsection

(7A), under three specific aspects such as: (i) anything that is a gross deviation from good commercial practice and contrary to good faith and fair dealing; (ii) the nature of goods or services in question; and (iii) whether the purchaser has any objective reason to deviate from the stipulated/contractual payment term.

This denotes that the word “grossly unfair” covers all contractual terms and practices that relate to late payments or unfair terms drawn up for general use. The report subsequently identified common grossly unfair commercial practices in the UK construction industry: late payment to contractors/suppliers, “pay when paid”, disparities in rates for items, exclusion of provisional remedy, discounts, the imposition of rates on subcontractors and unpaid retentions to contractors.

Peter and Arewa (2018) expounded that the phrase “late” or “delayed payment” are often used interchangeably to mean payment not received as when due. However, this study recognises delayed payments as a failure to honour payments within the stipulated time frame and in accordance with the contract’s conditions. A late payment is delayed or missed within the time stipulated in the contract documents. As previously discussed in Chapter 1, the issue of late payment is deep rooted and chronic in nature for construction contractors.

‘Pay-when-paid’ or ‘pay-when-certified’ stems from conditional clauses whereby payment by one party is dependent upon one party receiving payment from another. This type of payment is mainly synonymous with contractors in charge of settling subcontract or supplier payments initiated by the client. Although the conditional clause is prohibited by section 113 of Construction Act 1996, the practice is still widely adopted and used in the construction industry.

Disparities in rates for items, the exclusion of provisional remedies and discounts for items are gross terms usually imposed on subcontractors and suppliers to exclude them from utilising any sort of remedy in the contract or providing lower rates of payments. For instance, the FSB (2018) reported that 12% of suppliers had given discounts for prompt payments, 7% for retrospective discounting and

6% for a fee to remain in a contractor's supply chain and 3% discount applied after goods and services had been supplied. Table 2.5 below represents common types of unfair payment practices, nature of clients and parties at risks.

Table 2.5 Types of Unfair Practices and their Commonality to Construction Clients at Risk.

No	**Nature of Clients**	**Types of Unfair payment practices**	**Parties at risk**
1	Tier 1 Client (Public or Private)	Late payment, disparities in rates for items, discounts and lower interest	Tier 2, 3, 4 and 5 clients
2	Tier 2 clients (Main Contractors)	Late payment, disparities in rates for items, discounts, lower interest, unpaid retentions, longer payment terms, pay-when-paid, flat fees	Tier 3, 4 and 5 clients
3	Tier 3 clients (Subcontractors)	Late payment, unpaid retentions, discounts, flat fees	Tier 4 and 5 clients
4	Tier 4 client (Sub-subcontractor)	Late payment, unpaid retentions, disparities in rates for items, discounts, flat fees	Tier 5 clients
5	Tier 5 clients (Suppliers)	Late payment, unpaid retentions, disparities in rates for items, discounts, flat fee	Tier 5 clients

2.6 European Perspective – Unfair Payment Practices

According to the European Payment Report (EPR 2019), late payment in the construction industry is a deep-rooted problem for both small and large businesses in Europe. The report affirmed that a range of payment issues adversely affects most businesses and there is evidence that bad payment habits of large and public sectors are deteriorating. The EPR indicated that on average, large businesses paid their invoices after 40 days, up from 34 days in 2018, while the public sector settled invoices after 42 days, up from 40 days in 2018.

Findings from table 2.6 reveal that in 2019, most businesses in the UK offered longer payment terms compared to other European countries whereby business-to-business (B2B) had average payment terms of 45 days, an increase of 16 days compared the 2016 report. Business-to-customers (B2C) had an average of 25 payment days to settle their invoices. Comparing these figures to Europe as whole, average payment terms were 34 days B2B and 25 days B2C, respectively.

Furthermore, the report acknowledged that 56% of UK businesses were asked to accept longer payment terms than they were comfortable with, by both large and small companies as well as the public sector, as seen in figure 2.6.

Overall, the report acknowledged that the UK had longer payment terms compared to other countries and that there was no evidence to suggest that the problem was abating.

Table 2.6 Average payment terms across European countries (adapted from European Payment Report 2019)

Country	Average business-to-business payment terms (days)	Average time business-to-business customers actually take to pay (days)	Public Sector pay terms (day)
Austria	22	20	42
Belgium	38	22	60
Bosnia and Herzegovina	33	16	42
Bulgaria	26	11	12
Croatia	41	21	38
Czech Republic	31	17	31
Denmark	24	16	26
Finland	23	14	23
France	48	21	48
Germany	28	16	27
Hungary	25	11	39
Ireland	33	31	23
Italy	24	24	67
Latvia	20	12	14
Lithuania	25	11	13
Netherlands	45	37	40
Norway	23	18	27
Poland	26	23	25
Portugal	63	25	75
Romania	41	23	45
Switzerland	34	27	42
United Kingdom	45	17	28

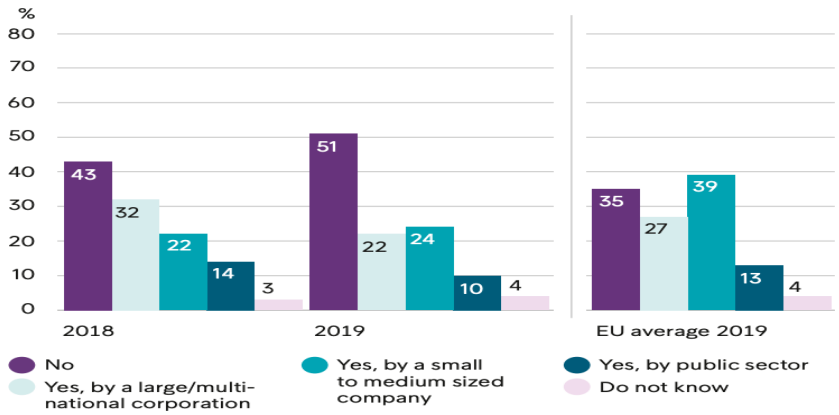


Figure 2.6 Percentage of agreement to longer payment terms by UK Companies 2019 (adapted from the European Payment Report 2019)

2.7 Historical Perspective – Unfair Payment Practices

In the last 50 years, unfair payments have remained a reoccurring issue in the UK construction industry. Banwell (1964) opined that "*…*the operation of the payment system is not always smooth… payments to the main contractor by the clients are often slow and uneven, with consequential delays in payments to suppliers and subcontractors. This has an adverse effect on the efficiency and stability of the whole industry *..."*. Similarly, Latham's (1994) report titled 'Trust and Money' stated that payment difficulties in the construction industry was one of the greatest difficulties faced by contractors, as most businesses in the sector were usually afraid that they would not be properly paid by clients when due, or as a result of errors in certifying monthly payments. The report claimed *"...* the cascade system of payment in the industry, from client to main contractor, main contractor to subcontractor and down the supply chain exposes different ventures to insolvencies*…."*

The National Audit Office Report (2005) titled 'Improving Public Services through Better Construction' concluded that "in general unfair payment practices such as unduly prolonged or inappropriate cash retention have undermined the principle of integrated team working and the ability and motivation of specialist suppliers to invest in innovation and capacity".

Moreover, the report by the Business and Enterprise Committee 'Construction Matters' (2008), stated that "…there remains a deep-seated culture among main contractors of delaying, reducing or simply avoiding paying their subcontractors for many years." These findings may not be completely unsurprising, as both Banwell and Latham's reports highlighted the existence of payment problems in the construction industry.

Undoubtedly, different legislations and initiatives have been enacted over the years to tackle unfair payment practices, yet to date, the problem remains deep-rooted in the construction industry. Recent data released by Build UK under the Duty to Report on Payment Practices and Performance (2019), asserted that some

of the biggest UK contractors still settled their invoices within 50 days and beyond, despite growing pressure, legislation and initiatives to alleviate poor payment practices.

2.8 Causes of Unfair Payment Practices

A thorough understanding of the causes of unfair payment practices will help to identify and implement measures towards alleviating the occurrence of this problem in projects. Hughes et al. (1998) stated that there were two primary causes of late or unfair payments based on clients' circumstance: **'cannot'** and **'would not'** pay attitudes. The **'cannot pay'** situation refers to a payer's financial difficulties due to insufficient capital and improper cash flow management. A **'would not'** pay situation however is when a payer refuses to pay a contractor or delays the payment for reasons such as incomplete work, mistakes in valuation and disputes from claims, etc.

The **'would not'** pay attitude is common among Tier 1 and 2 clients, thereby delaying payment to subcontractors and suppliers in order to sustain their cash flow for other projects and reduce overdraft facilities. Some school of thought believe that the **"would not"** pay attitude can be a deliberate act or perhaps the reluctance (unwillingness) of the subcontractor to protect their client-contractor relationship by any means. Besides, there is little or no empirical research to corroborate the scale of clients' deliberate acts of **"would not"** pay as opposed to genuine reasons for unfair payments. Danuri et al. (2006) mentioned that a client's financial incapability, local culture/or attitude, the use of conditional clause 'pay when paid', failure to implement good governance in business and delays in certification are the main causes for late payments in the construction industry.

The authors stressed that the industry practice of most consultants and even clients was to withhold or delay the certification of payments for biased reasons, even when the contractor has submitted an appropriate claim for work done. Euginie (2006) and Sin (2006) opined that this reason and other factors fuelled by

SFoC's used in construction permit the client/contractor to withhold or to refuse outright to pay monies owed to their supply chain.

On the other hand, there seem to be technical problems associated with unfair payment practices. For example, Abdul-Rahman et al. (2006) claimed that the following were major reasons for unfair payments in the construction industry: poor technological know-how concerning contract management; clients' lack of payment knowledge; payment modalities; delays in preparing valuations; certification of interim payments by client representatives (e.g. QS); insufficient documentation; poor data management; inaccurate valuations for work done; involvement of too many parties in honouring certificates; and conflicts between parties and misinterpretations of clients' variation orders. Frimpongs et al. (2003) are of the view that unnecessary bureaucracies in some public departments were responsible for the chronic unfair payments that are deep rooted in the sector.

Additionally, there appear to be strong cultural attributes to late payment issues in construction. For example, Abdul-Rahman et al. (2008) avowed that project culture significantly influenced late payments. The authors argued that in countries where the rule of law was ultimate; late payment was significantly minimised and vice versa. Ayudhya (2012) identified 24 causes of late payment in Thailand's building projects. The first five factors were identified as owners' financial problems, delays in work approval, major accidents, inaccurate bills of quantities and sub-standard workmanship.

Similarly, Yao (2014) affirmed that in poor financial management, delays in certification, contractual provisions, use of conditional 'pay-when-paid' practices, industry's culture and technical problems were some factors that influenced late payments. On the other hand, there is reason to believe that the nature of construction ventures has altogether contributed to unfair practices, such as 'all-comers' businesses; stringent competition, low business capital/asset-base, reliance on cash flow to sustain operations and lack of effective use of Information and Communication Technologies (ICT). For example,

Gibson (2000) and Pettigrew (2005) argued that the nature of traditional contracting enabled companies or individuals with little investments and limited experience to set up construction businesses. As a result, most of them suffered from financial difficulties when the settlement of their payment claims became irregular.

Besides, the industry has a unique cascade system of payment, whereby payment flows from the upper to the lower tiers; together with a prevalent condition of payment culture of 'paid if or when paid' that have made late payments and other similar practices deep rooted in the industry (Ramachandra and Rotimi, 2015). In summary, the literature review regarding causes of unfair payments can be largely attributed to the following factors: cultural (or attitudinal), regulations, technical and industrial processes. For clarity, the author wishes to recapitulate these factors into four main categories.

2.9 Cultural (or Attitudinal) Factors

a) Pay when paid

The historical inclination of the 'pay when paid' notion has been described as one of the worst factors for Tier 3 and Tier 4 clients in the UK construction industry. The 'pay when paid' notion instils a conditional payment provision for the main contractor in respect to the subcontracted works carried out. In other words, 'pay when paid' operates on the principle that a main contractor should not be liable to pay his subcontractors until payments have been received from the client. McCann (1999) ascertained that the rationale for use of such a draconian measure in the construction industry was to release the contractor's liability from payments and transfer the risk of the client defaulting to subcontractors further down the supply chain.

Arguably, due to the disorder caused by the use of 'pay when paid' in the construction industry, the Housing Grants, Construction and Regeneration Act (HCGRA 1996) worded a clause to counteract and prohibit this unlawful practice. Section 113 (1) of HGCRA states that 'a provision making payment under a

construction contract conditional on the payer receiving payment from a third person is ineffective unless that third party or person under contract is insolvent'. This means that if the client is solvent, the main contractor is prohibited to withhold payment or impose the 'pay when paid notion' on the subcontractor.

Moreover, it can be argued that the conditional payment notion cannot be completely rooted out from the industry, as most main contractors are still enforcing the use of such practices on subcontractors and even suppliers to date. For instance, in an event of a client withholding payments from a main contractor, the subcontractors and other members further down the supply chain are also exposed to risks of delayed payments or 'pay when paid' practices.

b) Client-contractor relationships

In the construction industry, relationships are often criticised for being adversarial and dynamic in nature. Client-contractor relationships, in particular client to main contractor (C-MC), main contractor to subcontractor (MC-SC), subcontractor to sub-subcontractor (SC-SCC) and sub-subcontractor to suppliers or labourers (SCC-S/L's), are subject to a partnering ethos, ranging from trust comportments, long term-commercial gains and 'who you know' in the construction industry.

Regardless of contractual connections, most of these relationships are deemed to be more cordial and long-term, often established with elements of familiarity and protectionism. For instance, many subcontractors and suppliers may not chase late payments or reject any unfair practices that are imposed on them becauseof the desire to protect their client relationship. This intuition has empowered some main contractors such as Carillion and many others to instil longer payment terms of 120 days and beyond. Bresnen and Marshall (2000) argued that whilst traditionally adversarial working relationship are deep-seated in construction there are elements of relationship trust and 'cosiness' that have evolved as well.

c) "Cannot" pay attitude of clients

The "cannot" pay attitude of clients refers to a situation when their ability and commitment to pay on time is impeded. A client as a singular

person or entity in construction will commission the building of a project under a particular budget, that is sourced through the client's own monies or a consortium of investors interested in the project.

However, most clients are irregular purchasers of construction work and may be unaware of industry risks that tend to allocate a certain amount of money for a project. When the allocated budget runs into deficit, the client experiences financial difficulties and cash pressures in running the project, which results in late payments to the parties involved in the project.

Arguably, it has been affirmed that the 'cannot pay' attitude of many construction clients is influenced by financial and economic problems such as a shortage of funds, difficulties in obtaining loans, inflation, decline in bank lending, insufficiencies, market instability, poor credit and the mismanagement of financial resources, etc.

d) "Would not" pay attitude of clients

In contrast with the 'cannot pay' attitude, the typology of 'would not' relies on a client's willingness and intention to pay. Clients are obliged in most forms of contracts to take sole responsibility for carrying out all payments for completed works on site. However, a common practice for clients is to invent or seek a spurious claim that will eventually delay or withhold payments. Kenley (2002) argued that some construction clients deliberately withhold payments from their main contractors inorder to pay for other ongoing projects or personal benefits.

Griffiths et al. (2017) further argued that main contractors also exert considerable commercial pressure on their subcontractors and suppliers by withholding or extending payment terms in order to boost their working capital position and thereby gain cheap finance. Withholding payment as legally enforced in SFoCs, is a condition precedent of a 'pay less' notice issued by a client to a contractor within five days of the final payment.

Conversely, it could be argued that the 'would not' pay attitude of a client may be influenced by the diversion of project funds, corruption, client behavior, disputes, unsubstantiated claims, errors in valuation, failure to comply with an architect's instructions and so forth.

2.10 Industrial Factors

a) 'Cowboy' bullying

The UK construction industry is generally perceived to have 'cowboy' clients and contractors in its rank and file. The Department of Environment, Transport and the Regions (DETR 1998a) defines cowboys as persons being mendacious, incompetent and tax evaders within construction. Typically, cowboys are said to be clients and major contractors who seek to instigate or influence bullying tactics on SMEs for their own commercial gains or individual agendas.

For instance, the Federation of Master Builders report (FMB 2018) affirmed that cowboys are a serious threat to three quarter of construction firms and that they are often involved in bullying tactics; as most of these clients deliberately delay or withhold payments without any good reasons or on spurious grounds. The report further revealed that a quarter of SME's claimed that they have to wait more than four months to receive payments from clients or large contractors. Of late, the BEIS (2018) reported that over the past two years, a third of small suppliers and subcontractors had witnessed drastically increased payment terms due to cowboy bullying.

b) Corruption

Construction contractors are generally undercapitalised and any major interruption to their working capital may result in ripple effects for the entire supply chain. Arguably, the reliance on subcontracting that dominates the entire construction industry has stemmed an increase in corrupt and fraudulent practices by many contractors. It can be common practice for a main contractor to take advantage of their subcontractors and suppliers by inducing cowboy bullying, aggressive accounting strategies and lengthening payment terms.

Humphreys et al. (2003) argued that main contractors have realised that their greatest potential for saving costs lies with their use of subcontractors' payments. Thus, when a contractor is paid for completed works on site by a client, the contractor shores up the cash to boost their cash position and liquidity whilst exposing their subcontractors and suppliers to late payments. This practice is perhaps the leading cause of why late payments persist in the construction industry.

c) Low barriers to entry and exit

As previously discussed, the UK construction industry is populated with a large number of SMEs and a small number of large companies. SMEs, which are mostly Tier 3 and 4 clients, are predominant in the provision of building construction and specialised activities such that to date, it is inevitable that main contractors cannot carry out projects without engaging them.

For this reason, the demand for interdependent SMEs in the construction industry has escalated to a point whereby any sole trader or individual can set up a small-sized firm with narrow expertise and poor capital to meet the industry's varied demands. Hence, when assessed in terms of barriers to entry and exit, the industry is proven to constitute low (no) barriers that permit the entry of small, undercapitalised companies with a heavy reliance on credit (Hughes et al. 1998). Low barriers to entry and limited capital results in cash flow difficulties that result in a contractor extending payment periods or even paying later than agreed.

Perhaps, it could be argued that majority of contractors replenish their working capital by taking advantage of payments for completed works either by deferring payments or paying their small subcontractors and suppliers later than agreed date.

d) Supply Chain finance

Fundamentally, access to working capital and finance for small to medium-sized enterprises (SMEs) remains a key challenge to the UK construction industry. Of late, the global economic financial crisis, regulatory changes and tightened lending standards have resulted in limited access to finance and cash flow pressures for many construction companies. Evidence from the RSM report (2017) shows that 63% of SMEs (mostly subcontractors and suppliers) had experienced financial difficulties for their business that forced most of them to rely on supply chain finance (SCF).

Supply chain finance (or reverse factoring) as an alternative source of finance, is mainly adapted by Tier 1 clients to improve and maintain their suppliers' working capital and cash flow through accelerated payments. Furthermore, SCF operates with Tier 2 clients working with third party funders mostly in financial institutions like Santander, Lloyd's Bank, NatWest and many others, to carry out supplier payments in conditions precedent to a specified date with interest being charged. However, it could be argued that despite its advantages, the SCF tool has become a tool of exploitation by main contractors whereby suppliers or subcontractors are forced to agree to longer payment dates or even being paid later that agreed. For instance, Carillion had adopted 120 days payments on its SCF to suppliers and subcontractors that exposed most of them to insolvency risks.

Although the SCF initiative was deemed to be a good idea to relieve SMEs from financial debt, recent findings have shown that contractors that signed up for the initiative became trapped, because the main contractor took advantage of the initiative by eventually paying their subcontractors over longer periods.

2.11 Technical factors

a) Defective works

As stated in most SFoCs, the contractor is obliged to carry out and complete works in a proper and workmanship-like manner, as stated in the contracts. The employer then ought to pay for the value of works that have been completed. Typically, the

main contractor will be held liable for defective works done or materials carried onto a site by a nominated subcontractor or supplier.

In the case of a client QS notifying the contactor of any defects, the subcontractor will be responsible for rectifying them before payment has been made by the main contractor. In practice, any defective works done by a subcontractor will constitute a reasonable excuse or claim for a main contractor to withhold or delay paying the subcontractor.

b) Delay in approval of works

Delaying approval for works done on site is likely to cause late payment problems for contractors and other members within the contractual payment chain. Ansah (2011) ascertained that a consultant usually delays the approval of completed works either due to faults or for other reasons; for example, failure to comply with an architect's instructions, disputed work, defects, errors in claims and delays in project resources. These reasons will likely cause the client to refuse to initiate payments which will result in later payments to the contractor and their suppliers.

c) Errors in submitting claims and the valuation of work

Reeves (2003) argued that errors in submitting claims and valuation ofcompleted works on site are among the main causes of late payments. Errors including incorrect calculations, wording of contracts, deductions to previous payments or retentions, omission of variation orders and failure to comply with an architect's instructions will result in later payments. When a contractor submits an interim application with errors, the quantity surveyor is forced to reject the application through the issuance of a payment notice that will require the contractor to resubmit, hence resulting in later payments.

d) Insufficient documentation and information

According to Hamzah et al. (2014), insufficient documentation and information submitted by a contractor will cause the client QS to withhold payments or even pay later that agreed. Insufficient documentation will give rise to the disruption of the entire payments process, whereby both contractor and QS will be forced to

carry out proper checks on documents before submitting them to the main client. Thus, delayed payments are likely to occur to project.

2.12 Regulator Factors

a) Complex payment legislation

In recognition of the pervasiveness of late payments in construction, the UK government has enacted a number of different legislations and initiatives to address the problem. For example, the Housing Grants Construction and Regeneration Act (HGCRA 1996) stipulates a 28 days payment timeframe to any construction contractors with a total delay period of 45 days, after which interest on the delayed payment will apply. In addition, the Local Democracy, Economic Development and Construction Act (2009), the Scheme of Construction Contract Act (1998), the Late Payment of Commercial Debts Regulation (LCDR 2013) and the Construction Supply Chain Payment Charter are believed to include some stringent measures in tackling late payments.

Griffiths et al. (2007) argued that despite the positive effects of legislative interventions, late payments have continuously plagued the construction industry. Sood (2016) claims that complexities and lack of knowledge surrounding most payment legislations have enabled few to benefit, whilst difficulties remain for many in applying them in real practice.

b) Complexities and ambiguities within legislations provisions

Peter and Arewa (2018) argued that all SFoCs constitute payment mechanisms that enable parties to deal with payments in an efficient and timely manner. The payment mechanism advocates on the right to periodic payments, procedures and time-frame in triggering payments and role of the payer (certifier) under contract.

Certainly in real construction practice it rare for parties to adhere to the payment mechanisms in SFoCS due to the following: deliberate withholding of payment, the

use of ‘pay when paid’, local cultural attitudes, the ‘cannot’ or ‘would not’ pay attitudes of clients, insufficient documentation, poor communication, etc.

c) Use of adhesion contracts

Sharkey et al. (2014) argued that frequent amendments or modifications to SFoCs help to distribute and allocate risk to parties with weak bargaining power, thus leaving one party at a disadvantage. Adhesion contracts termed ‘back to back’ are mostly drafted by Tier 1 and 2 clients with the purpose of favouring themselves over other tiers as a result of their commercial bargaining power and predominance in the supply chain.

Normally, the practice is for the client or contractor to draft SFoCs by stipulating terms and conditions which are mostly deemed to be ambiguous and unfair to lower tiers, for instance the inclusion of longer payment terms, discounts for prompt payments, supply chain fees/flat fees, exclusion of provisional remedies and right to withhold payment, etc.

d) Multi-tiered contractual frameworks

The multi-tiered, or in other words hierarchical structure, of the industry’s contractual frameworks places construction at a susceptible risk of late payment. Contractors within the contractual supply chain receive payments from clients above them and thus responsible for delivering those funds to the subcontractors and suppliers below their chain. This tiered or ‘water flow payment structure’ constrains the ability to receive timely payments and increases the receipt of later payments.

2.13 Role of Cashflow in Unfair Payment Practices

One of the most crucial yet difficult aspects of construction is to ensure that all members in the supply chain have sufficient cash to fund their businesses. Most project cash-inflows are designed to be on a regular basis for all parties, though often this does not happen as planned. The reason is that there is a significant time lag from the point at which a contractor receives payments to the point when

they have to pay their supply chain. ‘Work first then get paid later’ is an old adage of construction practices, as the contractor will have to commence works at a site by forgoing incoming payments.

Cashflow refers to the flow or movement between the incoming and outgoing payments of a business (Cooke and Jepson 1986). According to this school of thought, incoming payments are usually termed as positive cashflow and are credited to company balances. Meanwhile, outgoing payments are termed as negative cashflow and are debited from company accounts during the project’s execution.

Figure 2.13 illustrates a typical relationship between income (cash in), expenditure (cash out), time and the cumulative costs of a contract (Hendrickson 2008). The cash time curve, referred to as the S-curve, represents the cashflow forecast of a construction project. A key deduction from both the statutory and staircase points in the S-curve depicts a huge amount of expenditure (as cash out) spent by the contractor from the beginning of the project (due to site mobilisation and the erection of expensive fixtures on the ground) and the minimal amount of income received into the project. The difference between total income and total expenditure is termed as ‘project deficit’, covering short-term borrowings, bank loans, trade credits, short sales and other measures that will boost cashflow for a project.

It is often reported that construction is fundamentally undercapitalised; most contractors do not have sufficient capital to run their businesses and execute projects on site. Moreover, many measures are subject to high interest rates and scrutinies that force contractors to seek additional ways to boost their cashflows through inputting unpropitious measures or terms to their supply chain, for instance longer payments terms, delayed payments, etc.

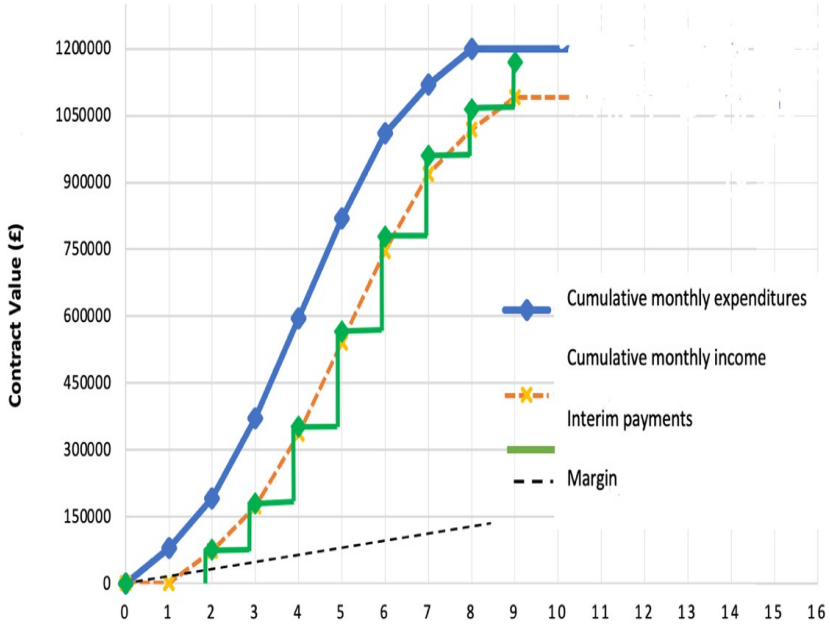


Figure 2.13 Typical S-Curves of Contractors' income versus expenditure on projects

2.14 Effects of Unfair Payments Practices

Undoubtedly, unfair payments lead to untold consequences for contractors, particularly SME's. The imbalance between company's revenue and outgoing payments, proliferation of longer payment terms and unfair practices have impacted businesses' ability to manage their cashflow and plans for further investment. Amoako (2011) claimed that late payments create financial hardship for contractors; negatively effecting the supply chain, delaying project completion, causing disputes and cashflow problems, finally coercing businesses into liquidation (or insolvency).

Ramachandra and Rotomi (2011); Abdul-Rahman et al (2014) Danuri et al. (2006) all argued that the gravest effects of late payments include cashflow problems, increased financial difficulties and stress for contractors. Other authors such as Howorth and Wilson (1998), Munaaim et al. (2007) and Akinsiku and Ajayi (2016) all argued that late payments erode the profitability of companies, increase the risk of insolvency and strain client-contractor relationships.

Furthermore, the BEIS report titled "Late Payments, Retentions and Government Procurement" (2018) asserted that knock-on effects of both late and unfair payment practices on small businesses in the UK include cashflow problems,

failing profit performance, delayed payments to suppliers and wider impacts on the entire supply chain and the economy as well. The report further highlighted late payment's impact on business growth, future investment and administrative burden, as valuable amounts of time and money are spent in chasing payments owed to clients or main contractors. For instance, the BACS report (2019) confirmed that on average, small to medium companies spent 1,060 hours per year chasing late payments, with approximate costs of £9,000 per business.

Besides, there is little research concerning direct and indirect relationships between unfair payments and construction business performance. Moreover, it would be necessary to advance research on the effects of unfair payment practices on construction; such as business continuity, reputation, quality of construction deliverables, health and safety, productivity, staff retainment and even people themselves.

Conversely, it is incumbent to measure clients' views or attitudes to the effects of unfair payments on construction businesses because the root causes of late payments stem from them. There would likely be a temptation to focus on causes and effects of unfair payments without looking at clients' attitudes to the problems. Understanding whether clients' attitudes to unfair payments are deliberate or inadvertent will help proffer a flexible solution to the problem.

2.15 Unfair Payments and Construction Business Performance

Notably, there is an overwhelming body of literature that acknowledges how unfair payments constrain a contractor's cash flow and its domino effects on the contractual supply chain. For instance, Wu et al. (2008) argued that persistent cash flow problems have potential to force company into insolvency.Ramachandra and Rotimi (2015) asserted that immediate effects on cash flow drives contractors (including subcontractors and suppliers) to seek for additional funding by means of overdrafts, loans, trade credits or other means to sustain them. Similarly, Ang (2006) and Singh and Lakanathan (1992) claimed that poor

rates of business continuity or the survival rate in the construction industry is a result of late payments. On the contrary, Love and Holt (2000) affirmed that within mainstream construction management literature, business performance and continuity receives scant attention due to the complexity of its objectives and the role it offers in improving business.

Ward et al. (1991), Love and Holt (2000) and Kagioglou et al. (2001) argued that traditionally, a contractor's performance in construction predominantly focused on project specifics in terms of time, cost and quality. However, due to changes in the economic situation and a shift towards business development strategies, business performance and continuity are critical issues for clients, contractors and stakeholders. For example, the collapse of Carillion in 2018 raised many issues concerning construction business performance and continuity especially as it related to the never-ending late payment quandary. Carillion as one of the UK's largest Tier 2 clients had used late payments as its business model to hide its true financial performance and continuity.

The adverse influence of late and incomplete payments on a contractor's business and performance has been highlighted; for example, contractor non-payment is a cause of escalating disputes (Carmichael 2002), and "the risk of late payments [y] is very common in the 30 ECAM 20 industry and has driven many consulting firms to the edge of bankruptcy" (Kometa et al. 1995a).

Yet, there is little or no research that directly measures the relationship between unfair payments, business performance and continuity in the construction industry. Franco et al. (2007) asserted that the definition of the term or meaning of business performance lacks cohesiveness due diverse views and its contribution towards the body of knowledge. Moreover, the performance of a business's success or failure in achieving its goals can be illustrated in a number of ways.

Arguably, business performance in construction is considered to be synonymous with assessing financial performance and chances of business continuity using

financial ratios. Ellis (2007) argued that financial ratios such as profitability, return on assets, return on capital employed, fixed assets, return on equity, debt ratio and liquidity ratio could be used to measure business performance over time and assess its chances of continuity and also compare it with other competitors. As for this study, the researcher has used four financial ratios, namely operation profit margin, return of capital employed, liquidity ratio and debt ratio to assess a contractor's business performance in relation to unfair payment practices in the UK construction industry.

Usually in calculating any financial ratio for a business, income statements and balance sheets (financial statements) published in acceptable accounting standards are evaluated to determine the business performance of a construction firm. On the contrary, small and medium contractors are often reluctant to publicly reveal their financial statements whilst bigger companies are compelled by regulations to publicly announce and even publish their own. However, it is pertinent to note that the indicators used by accountants and economists to assess the financial performance of entities are not an accurate assessment of business performance.

For example, in 2018/19, KPMG are currently under investigation by the UK government and Financial Reporting Council (FRC) for allegedly signing off Carillion's inaccurate figures that publicly portrayed the company in a good light. Nonetheless it could be argued that most of the UK's large construction firms tend to impose aggressive account strategies such as cash boosting their working capital and maintaining profits by extending their payment terms or even paying suppliers and contractors later than agreed. McCall (2016) argued that for any construction contractor, working capital is a key financial performance of a contractor's ability to cover its short-term obligations whilst funding the ongoing project.

Thus, it is unsurprising that most small and medium-sized construction companies are more constrained by working capital pressures and later payments that lead to

higher risks to business continuity and even insolvency. Pheng et al. (2010) affirmed business continuity as identification and readiness of construction businesses in maintaining adequate levels and continuous well-being of a firm in times of disruption such as inadequate capital, cash flow pressures, price fluctuations, late payments and so forth. He further argued that most construction companies appear to lack a properly integrated knowledge and approach towards its business continuity. Hughes et al. (1999) stated that most construction companies are developed without formal qualification and low capital such that it is common for a company to collapse whilst leaving others at risk of late payments.

2.16 Summary

This chapter examined a host of issues surrounding unfair payment practices, payment forms and mechanisms, the magnitude of unfair payments and the relationship between construction business performance and unfair payments.

Furthermore, the choice of literature adopted for this study does not negate any other contributing factors and effects of unfair payments associated with clients and construction contractors, despite the existence of specific payment legislation and initiatives.

CHAPTER 3

Contractual, Legislative and Regulative Measures to Payment Practices

3.1 Introduction

This chapter examines existing literatures concerning contract legislation and other *inter alia* measures regarding payment practices in the construction industry. Although it is essential to have a thorough understanding of existing measures, it is also useful to review the efficiency and credibility of payment practices such as the right to receive prompt payments, the provision of interim payments, the right to a pay lessnotice or deductions, interest on late payments, withholding of retentions and other payment related provisions.

The chapter also reviews contract theories, contractual clauses, procurements, legislative provisions, payment charters, codes, administrative procedures and other measures introduced to mitigate the problem.

3.2 Overview of Contract theories

Many contract theories exist. For example, there are traditional contract doctrines, modern contract theory, classical and neoclassical, transactional cost economic theory, principal-agent and relational contract theory. Hart and Holmstrom (1986) claimed that “the collection of contract theories is partly a reaction to our rather thorough understanding of the standard theory of perfect competition under complete markets; perhaps because of the realisation that these paradigms are insufficient to accommodate some important economic phenomena”.

For instance, both neoclassical and transactional cost economic theories assert the opportunistic attributes or self-vested interests of parties bound by costs in carrying out an exchange. Diamond (1984) argued that often, contract theories are drawn from economic bargaining power and imperfection as a natural way to enrich

and amend an idealised competitive model. Fundamentally, contracts establish contractual relationships to parties and economic analyses that facilitates *quid pro quo* i.e. a favour in return for an action or deed. This study seeks to review principal-agent theory, modern contract theory and relational contract theory, the reasons being that the study's variables relate to situations where clients use their vested power (commercial bargaining power) to withhold payments from their sub-agents (mostly contractors, subcontractors and suppliers).

Principal-Agent theory seeks to maximise one's utility, an ideology where the principal uses his or her commercial bargaining power to utilise value over sub-agents, in this case of contractors. This theory is vital to this study because most literature about unfair payment practices reveals that most clients use their commercial bargaining power and vested interests to withhold money from subcontractors, because the clients are principal agents in contractual arrangements. Arguably, the sub-agents (contractors) rarely seeks readdress (legal means) from the principal agent because of their relationship and business continuity.

Relational Contract theory was put forward by Macaulay (1963), emphasising the continuity of contractual relationships. The theory states that contractual parties do not use the complete contract when they feel their counterpart is a necessary part of their business. The theory emphasises that contractual parties prefer to negotiate and re-arrange a contract in order to keep its continuity rather than terminating it. Perhaps this theory perfectly explains why most contractors in the construction industry involved in unfair payment practices will not tolerate the option of termination (although this is an option in a contract) because of business continuity.

Arguably, modern contract theory was put forward in early 19th century England during revolutionary economic and political changes (Gluck 1979). Possibly, modern contract theory would not be complete without reference to 19th century classical Liberal thinkers such as Adam Smith, John Stuart Mill, James Mill and

Jeremy Bentham. The most influential of these Liberal thinkers was Adam Smith who outlined the doctrine of economic *laissez-faire* (that is, allowing things to take their natural course without interference).

This doctrine became the cornerstone of 18th century economic thinking. The theory proposes that "if individuals were allowed to pursue their self-interest free from government interference, they will inevitably maximize their own profits and, therefore the wealth of society as a whole". In addition, Adam Smith insisted that government should only have a negative role in economic life (national defence and internal security) because competition among individual self-interests would result in social harmony through the agency of the "invisible hand".

Adam Smith's supposition is not significantly different from principal-agent theory, possibly because the two theories emphasise domineering power and profit maximisation by one agent over another. However, Adam Smith's theory is relevant to this study because of his assertion that government should only have a negative role in economic life. In contrast, the government's role should not only be negative but rather a positive, regulatory role. For example, the enactments of the Housing Government Construction Regulation Act, Local Democracy Economic Construction Act, Construction Contract Act, etc. are positive roles placed by the government to regulate unfair payment practices.

3.2.1 Historical Perspectives on Standard forms of Contracts

Most economists and lawyers believe that the Adam Smith doctrine gave birth to modern contract theory *vis-a-vis* standard forms of contracts (SFoCs). Kessler (1943) argued that the principles of contracts enunciated in the 19th century worked well, in as much as freedom of entrance (i.e. offer, acceptance, consideration, fraud, duress, misrepresentation and *non est factum*) are acceptable defence in contracts. This rule was imperative at the time because contracts were negotiated on an individual basis. Gluck (1979) asserted that while the above contract principles existed; the process of contract formation had

changed considerably by the turn of the 19th century, due to direct responses to the economic realities of the times.

Production was seriously driven by manufacturing in large quantities and standardisation became an integral part of the economic order. Profit margin was linked to efficiency and it quickly became obvious that manufacturers did not have time and money to enter into individually negotiated contracts. The preferred solution at the time was the introduction of printed, mass-produced contracts that could be used repeatedly. It could be argued that SFoCs were a complementary and natural development from mass-produced contracts (Kessler 1943).These forms of contract were subsequently developed by various interest groups into longer and much more complex forms used in virtually every aspect of commercial life today.

From the standpoint of risk allocation, the literature has arguably been scarce about the determinants of contract agreement's usefulness. This is imperative because valuable insights have emerged that contracts are generally imperfect, and that they do not fulfil *Pareto* optimality theory. *Pareto* efficiency or optimality theory explains a state of allocation of resources from the point of view that it is impossible to reallocate preference criterion that makes one party better off, without making the other party worse off. In reality, the nature of construction contracts usually favours clients and their representatives and risks are often transferred to contractors. For example, contractors normally bear the payment risks allocation in a typical construction contract.

Thus, it could be argued that *Pareto* optimality is at variance with the very nature of construction contracts. Sharkey et al. (2014) posited that standard forms of contracts in construction are frequently amended to move risk to parties that have weaker bargaining power; thus alluding to contracts of adhesion (take it or leave it); which are common phenomena between main contractors (acting as clients) and subcontractors. Theoretically, the fact that SFoCs are often drawn in advance makes them fit into "Enforcement of the contract theory or asymmetric information

contract models". These models explain that the enforcement of a contract based on lack of information may subsequently warrant breach of a contract. For example, project's parties will agree in advance to have a firm and binding contract, without the flexibility to change or alter the clauses once signed.

It is often the case that employers will allow for changes in a contract; therefore, a typical construction contract is prone to late payments (Zaghloul and Hartman 2003). Yet, the literature's references to standard forms of contract portray a perfect contract position. In practice and from a legal perspective however, there are rarely standardised forms of contract due to variations and amendments that often characterise construction contracts. Nevertheless, it is pertinent to notethat there is barely any explicit contract theory that expounds on performance indicators of SFoCs.

Figure 3.2.1 illustrates SFoCs that are mostly used in the UK. Whilst JCT and NEC forms remain the most popular and commonly used in construction, bespoke forms are still predominant although their use has fallen over the past few years. Chappel et al. (2008) argued that regardless of their nature and extent, all SFoCs consist of payment provisions. These provisions are usually guided by the Housing Grants, Construction and Regeneration Act (1996) that emphasises adequate mechanisms or procedures to secure payment for contractors and other members within the supply chain. SFoCs such as JCT(SBC/Q2016), NEC4 and FIDIC used in the construction industry will be discussed in subsequent sections.

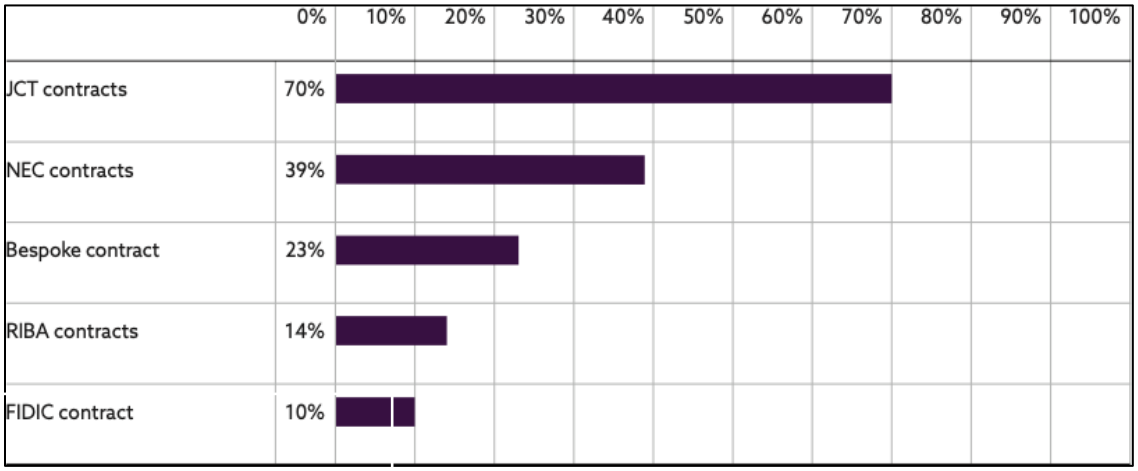


Figure 3.2.1 Most utilised SFoCs in the UK construction Industry (adapted from National Construction Contracts and Law Report 2018)

3.2.2 Payment provisions in JCT Standard Building Contracts

In contrast to its subsequent forms, the JCT (2016 SBC/Q) introduced significant changes in payment provision to all main contracts, subcontracts and sub-sub-contracts forms. The changes were deemed to supersede government payment regulations, charters and codes by synchronising payment processes and provisions throughout all tiers of the construction parties. The JCT 2016 aimed to deliver a fair payment system that would secure cashflow for the main contractor down to subcontractors and sub-subcontractors within 30 days in industry terms. These changes to JCTs constitute the introduction of an interim valuation date (IVD), the reduction of the final date for payment to 14 days (as opposed to 21 days from the due date) and the valuation date remaining consistent for contractors in the project.

As for IVDs that modifiy and restructure JCTs, they establish a common valuation date for all parties to the contract and all tiers involved in the building project. Clause 4.7.3 of JCT requires a contractor to submit an interim payment application before the IVD and if the application is late, the due date for the interim payment would be 7 days after the relevant IVD. As a quantity surveyor (QS) validates the interim application, the employer is required to issue payment notice not later than 5 days (Clause 4.7.2) after the due date. Moreover, if the employer wants to issue a payless notice on a contractor's application as illustrated in figure 3.2.2, a notification must be made within 5 days (Clause 4.9.5) before the final date for payment. Again, the JCT stipulates both the final date for an interim payment and the final payment, which must be issued not later than14 days from the due date (Clause 4.9.1).

The main purpose of an IVD is to streamline payments for all the tiers by setting a due date that follows the same valuation date. For example, JCT subcontracts set a due date of 12 days after the IVD, that will require the main contractor to pay a subbie for outstanding invoices; and the same for sub-sub-contracts, setting the due date for 17 days after the IVD.

Arguably, the general issue remains that over 60% of SFoCs including JCTs are often amended by the employer and main contractor to reflect their self-interests, which in turn affect the payment arrangements of the supply chain. This is evident with most of the work procured by Tier 2 clients (for instance the liquidated construction giant Carillion); where bespoke forms are mostly drafted to protect their cash flows by inputting longer payment terms and unfavourable practices or measures on subbies and suppliers.

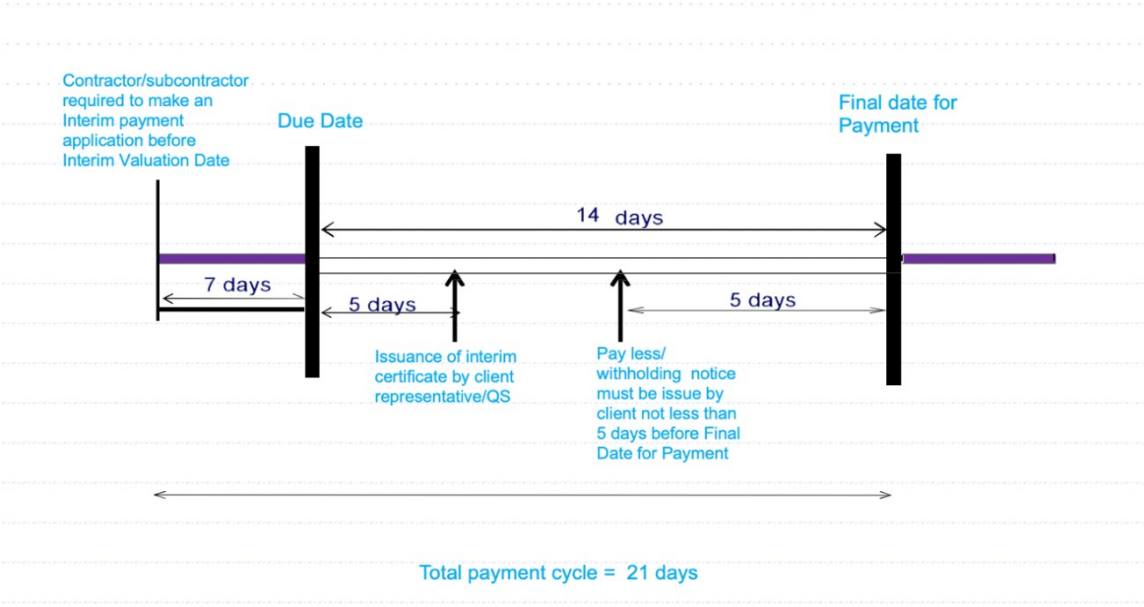


Figure 3.2.2 Payment Timeline – JCT Design and Build Contract 2016

3.2.3 Payment Provision in NEC4

In NEC 4, payment provision and procedures are synchronised in Clause 50 and secondary optional clauses for six of its main options (i.e. a priced contract with an activity schedule, a priced contract with bills of quantities, a target contract with an activity schedule, a target contract with bills of quantities, a cost reimbursable contract and a management contract). For instance, clause 50.2 of NEC 4 stipulates its contractor's obligation to submit an interim application to the project manager before the assessment date. Failure to do so would penalise the contractor in accordance with the contract (clause 50.4).

The project manager is responsible of assessing and certifying the amount due to be submitted at each assessment date not later than one week from its assessment (clause 51.1). It must be noted under NEC4, assessment dates are made at intervals of no more than 5 weeks (clause Y2.2) and determined by the project manager himself or herself.

Again, the final date for payment must be made within 3 weeks of the assessment date (clause 51.2). In the event of failure, interest would be charged on late payments (clause 51.3). Overall, all payment procedures and provisions relating to NEC4 are dependent on the project manager's due diligence to adhere to timescales and conditions (Mcleron and McClements 2015), which in a practical sense is burdensome and risky, given the nature of the construction industry.

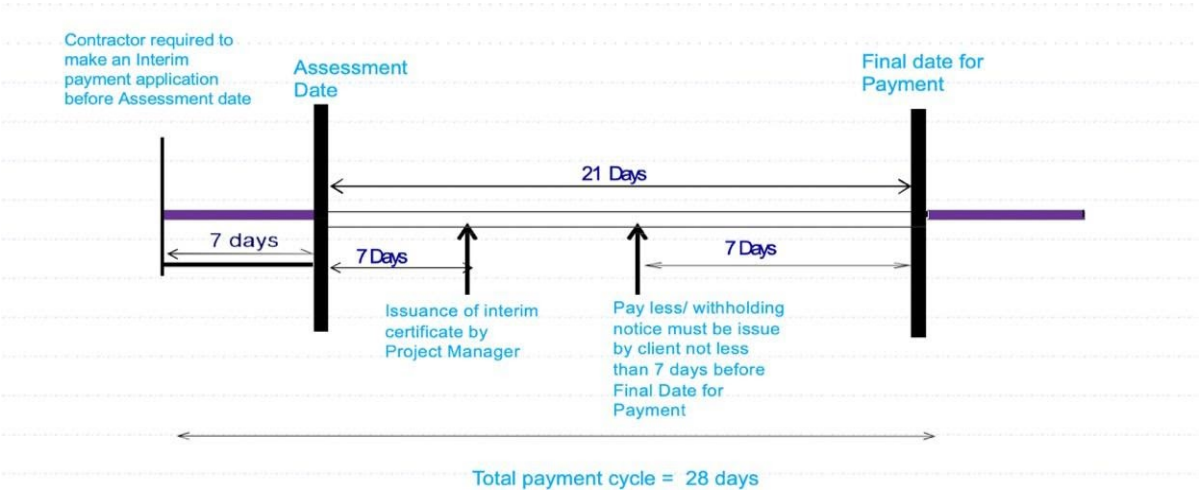


Figure 3.2.3 Payment Timeline – NEC 4 Contracts

3.2.4 Payment provision in FIDIC

Clause 14 of FIDIC forms provides common and fundamental payment provisions for managing costs. This includes assessing amounts at 8 week intervals (Clause 14.7), the certification of payments within 4 weeks of the due date (Clause 14.6) and issuance of a taking-over certificate within 12 weeks of the contractor's completion. The clause also provides provisions for advance payments (Clause 14.2) and remedies the non-issuance of interim payments such as the suspension of works.

The project engineer, as the main certifier in FIDIC, is responsible for assessing and validating a contractor's interim application and advising the client on the amount to be included in the final payment. The contractor is obliged to submit an interim application to the engineer by the end of month specifying the amount of completed work and the details behind its assessment. Preferably, the contractor is advised to submit supporting documents (such as invoices, photos and receipts) that will substantiate his or her claim for monies. The engineer has 4 weeks to issue an interim payment certificate as stated in the contract. In addition, the client is subjected to pay the contractor within 56 days from the submission of the interim application to the engineer (see figure 3.2.4).

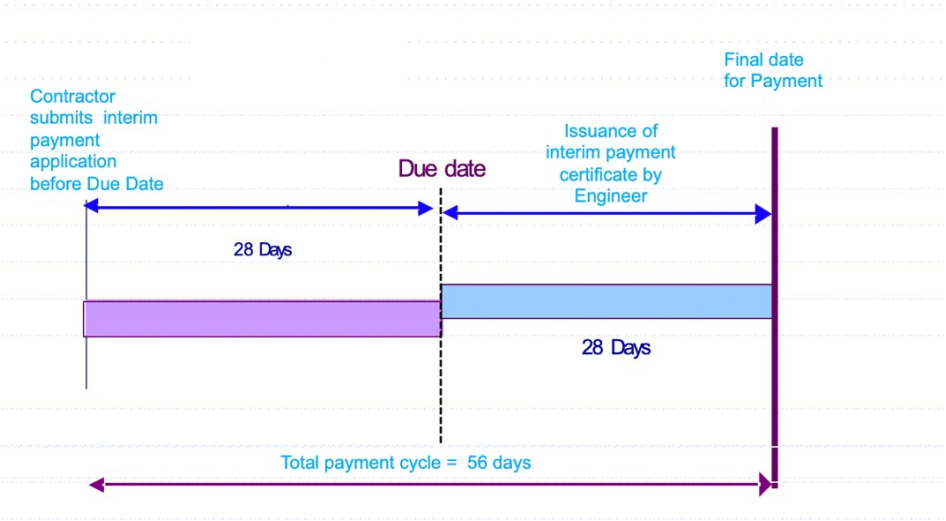


Figure 3.2.4 Payment Timeline – FIDIC Contracts

Overall, the reviewed standard payment terms for JCT, NEC and FIDIC contracts stand between 21 and 28 days, indicating an approximate 30-day contract period, which may seem reasonable. FIDIC meanwhile has an average payment period of 56 days from the day of certifying an interim valuation. However, there is a need to bear in mind that FIDIC has provision for advance payments at 42 or 21 days respectively.

Conversely, it could be argued that payment provisions stipulated in SFoCs rely on a contractor's or client's due diligence to adhere to timescales, conditions and responsibilities that are uncertain. Normally, a main contractor would be handling a multitude of projects and dealing with an array of subcontractors that would place a considerable amount of risk and uncertainty as to whether provisions would be adhered to or not. Moreover, it becomes an overarching objective when terms are amended or tailored in the contracts. For instance, in Henia Investments Inc. v. Beck Interiors Ltd. (2015), the court pointed out the failure of both parties to understand the SFoCs wording of "payment in accordance with timescale in the contract" that escalated to a dispute concerning the validity of an interim application payment submitted by the contractor. On the contrary, there is no literature that suggest that SFoCs have better payment performance; but the nomenclatures and fundamentals of NEC standard form of contract has potential to encourage better payment practices.

3.2.5 Retention and Unfair payment practices in Construction

Most standard forms of contracts (SFoCs) in construction incorporate provisions that govern the use of retentions. Retentions are usually a percentage sum of a construction contract deducted and retained by the client; with half released during the practical completion and other after the expiry of the defects liability period. Retentions, as industry practices, are designed to provide insurance against contractor failure or insolvency risks to a project. Hughes et al. (1998) argued that typically, retention is set at 3-5% in most SFoCs; whereby a client withholds part of the payments due to the main contractor who then deducts the same amount of monies due to their subcontractors.

This normal practice is deemed to encourage project efficiency, yet evidence suggest that withholding practices are proven to intensify traits of unfair payments in construction. For instance, a recent report by Pye Tait (2017) asserted that over the past five years, £7 billion in unremitted retentions had been withheld from UK contractors. Significantly, 65% of surveyed contractors, mostly tier 3, had experienced longer delays and even non-payment of retentions monies due to

upstream insolvencies. Perhaps it could be argued that retentions provisions stipulated in SFoCs have detrimental effects on a subcontractor's cash flow because of uncertainties that surround client's finances in the event of main contractor insolvency. This is evident with the recent collapse of Carillion Plc and Dawnus construction, whereby a total of £700 million and £50 million in cash retentions was written off by their supply chain.

3.2.6 Procurement and Payment Practices

The fundamental principle of most procurement strategies in construction is the ability to apportion design, time, variation and cost risks to the contractual parties. The issue about who takes the risk and the certainty of payments differs from the procurement form selected by the client. Laryea and Hughes (2006) and Sherif and Kaka(2003) argued that the connection between procurement strategies, the suitabilityof the selected payment mechanism and uncertainties associated with cashflow would affect multiple layers of contractors and subcontractors involved in the project.

The industry's fundamental problems are its dependence on a contractor's cashflow and the risks associated in the financing of projects. Ardti and Yasamis (1998), Sherif and Kaka (2003), Hughes et al. (2006) and Masterman (2002) were of the view that regardless of the procurement strategies, contractors are expected to use their resources to execute the job and wait for payment later. Moreover, the use of management contracting procurement in the UK is seen to encourage unfair payment practices as the main contractors retain the upper hand in commercial power, with a domineering position in the supply chain to dictate and/or control payments to subcontractors/suppliers.

3.3 Legislative Provisions

Following the recommendations made by Latham (1994) and Egan (1998), the UK enacted different payment legislations and acts to address unfair payment practices in the industry. For instance, the promulgation of the Housing Grants, Construction and Regeneration Act (HGCRA 1996) was deemed as an initial step

to enhance prompt and timely payments within the supply chain. Griffiths et al. (2017) argued that although legislations have been modelled to varying degrees, UK is renowned for spearheading the development of most payment legislations. Table 3.3 presents various acts and legislations enacted by different countries to improve payment practices, with a brief discussion of UK payment legislations which will be discussed subsequently.

Table 3.3: Different payment legislations and acts enacted in different countries

No.	Country	Legislations and Acts	Function	Payment duration/ response
1	NORWAY	Norwegian building and civil engineering contract NS 8405:2008 and general conditions of contracts for design and build contracts NS 8407 (2011)	Entitlement to progress payment	Payment duration and response must be made within 30 business days (BD) or must be agreed by the parties to the contracts
2	NETHERLANDS	Uniform Administrative Conditions for the Executions of Works and Technical	Improve payment practices	Payment claims must be made within 30 days after progress claim is submitted and notice of
3	NEW ZEALAND	Construction Contracts Acts (2015)	Facilitate prompt payments, speedy dispute resolution and remedies for non-payments and retentions	Payment becomes due within 20 working days after receipt of invoice
4	SINGAPORE	Building and Construction Industry Payment Act	Improve cash flow	Payment schedule and response must be made within 14 days of the assessment date
5	AUSTRALIA	Building and Construction Industry (Security of Payment) Act (BCIPA)2009 Construction Contracts Act (2004)	Facilitate regular and timely payments	Payments become due within 40 days from receipt of invoice and a notice to “reject / dispute part of claim” must be given prior to the final date
6	USA	Miller Act and Prompt Payment Act	Enhance progress payments within the supply chain	Payment is made 30 BDS and 15 BDS from the time the claim is made
8	CANADA	Bill 69 Prompt Payment Act 2014	Entitlement to progress payment	Payments to contractors and subcontractors become due within 20 days from when payment claim is submitted
9	MALAYSIA	Construction Industry Payment and Adjudication Act (2012)	Restrict conditional payment practices (‘pay when paid’ and ‘pay if paid’)	Same as UAV 2012

3.3.1 Payments under the Housing Grants, Construction and Regeneration Act (1996)

The development of the Housing Grants, Construction and Regeneration Act (HGCRA1996) was influenced by negative effects of the industry's traditional payment and withholding system. Latham's report (1994) highlighted the industry's cascade payments and withholding practices that had exposed contractors, subcontractors and so forth down the supply chain to late payments. As orated in his seminal report titled 'Constructing Team'; *"…* the cascade system of payment in the industry ...makes exposure of other parts of the process to insolvency and later payments of participants*".* Therefore, in recognising this detrimental effect, the government enacted HGCRA to expedite timely and regular payments as well as encourage speedy dispute resolutions for parties.

Under section 109 of HGCRA (1996), a party to a construction contract with an excess of 45 days in duration is entitled to interim, stage or periodic payments for any works. Periodic or interim payment is essential for contractors (mostly subcontractors) due to regular injections of cash into the project. As stated by Lord Denning in Dawnays Ltd v FG Minter Ltd, regular payments (cashflow) is "the lifeblood of construction".

The HGCRA, also known as the 'Construction contract', stipulates a requirement for contracts to provide an adequate mechanism for determining what payment become due and when. Section 110 (1) (a) of the act states that parties must agree on the payment process and intervals at which they become due and the final date for payment claims to be made. In addition, the act also ousted conditional payment clauses (such as 'pay when paid' and 'pay if paid') and withholding notices by payers. Griffiths et al. (2017) affirmed the positive effects of the legislation in improving payment culture and practices in the UK, yet late and delayed payments continue to impact small and medium-sized contactors.

3.3.2 Payments under the Local Democracy, Economic Development and Construction Act (LDEDC)

The Local Democracy, Economic Development and Construction Act (LDEDC) 2009 came into effect in both England and Wales in 2011.TheLDEDC Act constitutes changes within the operation of construction contracts that focus on amending payment provisions set out in section 110 and 111 of the Housing Grants, Construction and Regulation Act (1996); suspension of works upon non-payments; adjudication and the inclusion of unwritten contracts.

As for the revised sections, the LDEDC made payment provisions clearer and more straightforward together with the eradicating of conditional payments that had such a huge impact on subbies. This consisted of payment notices to be issued within five days prior to the due date together with specifying the notified sum. The payee is entitled to serve a payment notice in any given circumstances, the payment notice must contain the basis upon which the notified sum is calculated and the payer must give notice if they intend to pay less than the notified sum and state the withholding amount. Besides, the act does not alter the provision of an adequate mechanism in determining payments and intervals together with the entitlement of the party to receive regular payments.

Overall, the LDEDC act calls for a new payment notice regime that involves the issuing of payments and specified lesser amounts within five days prior to the due date, the introduction of pay less notices and the bolstering of payee rights to the suspension of late payments (RICS 2015).

In essence, both the HGCRA and LDEDC were formulated with the intention of facilitating timely payments; the right to receive progress payments; the prohibiting of conditional payments; and solving payment disputes by adjudication together with inducing payment rules and notices within the standard forms of construction contracts.

3.3.3 Payments under the Scheme of Construction Contracts (England and Wales) Regulations 2011

In contrast to previous legislations and acts, the Scheme of Construction regulation provides fall-back provision for a contract that does not constitute an adequate payment mechanism. Ancillary to HGCRA (1996), the scheme sets out provisions for parties that have a written contract but with void payment rules and non-compliant payment provisions. Pettigrew (2005) argued that although the scheme appears to be complex and confusing at times, it provides a proper mechanism for the valuation of completed works and payments.

The provisions stipulated under the scheme include the right to interim or stage payments, the notification of payment notices, the suspension of performance due to late payments, the omission of withholding notices and conditional payment clauses. In essence, the scheme focus on notice requirements within construction contracts, whereas the payer must give a payment notice not later than 5 days after the payment due date and pay less notice before the final date for payment. This distinction was outlined from the 1996 act, whereby the withholding notices had a consequential effect on payee invoices. The scheme replaces the regime with a pay less notice to encourage positive and good payment practices by the payer.

Undoubtedly, despite these legislative interventions, anecdotal evidences suggest that late payment problems continue to persist in the UK, particularly within the construction industry, whereby 60% of small suppliers witnessed payment terms increasing over 60 days and beyond. Wood (2016) argued that most acts are enclosed in complex processes that tend to be difficult to apply and have benefited only those who fully understood them. This is evident for most lower-tier parties (sub-contractors and suppliers) within the construction industry that lack of knowledge and understanding of the regulations and acts, such that they merely use the stated provisions.

Moreover, most subcontractors and suppliers are reluctant to employ payment provisions such as interest on late payments or suspension due to non-payment because they fear being removed from the Tier 2 supply chain.

3.3.4 Public Contracts Payment Regulation 2015

The public contracts regulation 2015 stipulates payment provisions and procedures for public bodies when dealing with and paying suppliers that commit to fair and good practices in their supply chain. The legislation was specifically enacted by the government to promote fair and consistent payment periods and ethical commercial behaviours within public supply chain contracts.

Regulation 113 of the contract imposes a duty on public bodies to ensure that payments to their Tier 1 contractors are made within 30 days andthat same effect is contained in each tier of the supply chain. The mandate of the 30-day payment rule is deemed to be applicable to all public construction contracts and payments made later than the 30 days term will be subject to statutory interest.

3.4 Construction Payment Charters and Codes

In recognition of this late payment culture, the UK government has enacted different codes and charters to minimise the occurrence of such financial detriments within construction. These codes and charters are designed to create transparency and fair payments for parties working on construction projects. Specific to supply chain payments and finance, the charters and codes are focused on enhancing prompt and timely payments, 30 days of industry's terms, zero retentions and good practices within construction contracts. The following codes and charters were introduced by the government in line with the Construction 2025 strategy that aims to "... create conditions for construction supply chains to thrive by addressing access to finance and payment practices….".

3.4.1 The Prompt Payment Code

Formulated by the Chartered Institute of Credit Management (CICM) the Prompt Payment Code ("the code") calls for changes in payment culture across all businesses, particularly construction, where payments are often delayed. The code, as a representation of the UK government's image, sets out

principles for the construction industry to follow when dealing with and paying their suppliers within an agreed time frame.

The code requirements stipulate three specific areas that signatories must adhere to and commit fair and transparent practices within their supply chain. These requirements include paying suppliers on time, giving clearguidance to suppliers and encouraging good practices within their supply chain.Moreover, the code calls for signatories to the three requirements to undertakereductions in payment timelines from a maximum of 60 days towards 30 days as an industry norm and to avoid any unfair practices that could adversely affectthe supply chain.

The FMB (2017) argued that although the code had gained the majority of Tier 2 signatories including the Top 100 construction companies; it had failed to readdress the late payment problems facing many suppliers. This is highlighted by the recent demise of Carillion which enforced payment terms of 120 days and beyond, despite being a signatory to the code.

3.4.2 The Fair Payment Charter

The fair payment charter sets out values and arrangements relating to fair and transparent payment practices for construction contracts. The charter builds on existing legislations and policies that aim to create a collaborative culture and sustainable supply chain in projects. Administered by the Construction Leadership Council (CLC), the charter sets out 11 commitments to be adhered to by clients and contractors working to achieve the best and fair practices within their supply chains.

The 11 commitments stipulated by the Fair Payment Charter include the following: the right to receive full payment, fair payment, transparency, open book accounting, equitable distribution of cash flow, 30-day payment rule, issuance of pay less notice and prohibiting the withholding payment rule, etc. (Office of Government Commerce 2007). Again, the charter entitles the use of the document as not being legally binding for its members and that it should not

to be used in constructing any contractual commitment. In other words, it implies that the charter is voluntary for its members to commit to and must not be intended as a legal document.

Cartlidge (2013) argued that although nine companies had committed to adopting the charter, there are concerns regarding how the charter would be policed and enforced, since there is no legislation or sanction governing it.

3.4.3 The Construction Supply Chain Payment Charter

Corresponding to the Prompt Payment Code, the Construction Supply Chain Payment Charter (CSCPC) seeks to establish fair and transparent payment practices for construction projects. The CSCPC stipulates 11 fair payments commitments that aimed to reduce supply chain terms to a 30-day payment rule by 2018 and zero retentions by 2025 (Build UK 2017). The CSCPC again called for payments not be made after more than 60 days, for all construction contracts for works carried out or supplied from 2015.

Moreover, other commitments stipulated by the CSCPC include the abolition of the withholding payment rule, the use of project bank accounts and electronic payments, zero retentions and the adoption of a supply chain finance scheme for all parties. Mason (2016) argued that contractors and organisations that had signed up to the charter should be monitored against a set of key performance indicators (KPIs) for the purposes of compliance and the performance of their supply chain when awarding contracts.

Overall, it could be argued that the voluntary approach imposed in these aforementioned charters has proved to be a drawback in readdressing payment problems that sit at the heart of contractors' businesses and the industry's economic structure. The Department for Business, Energy and Industrial Strategy (2017) report asserted that it was clear that both codes and charters were having no desired effects or sanctions on companies that had signed up to or adhered to its stipulated principles, requirements or commitments.

3.5 Alternative Measures of Enhancing Fair Payments in Construction

The use of administrative measures in construction is deemed to be an industry attempt to deal with payment problems that affect most contractors. The measures are normally included in SFoCs and construction contracts to minimise and provide remedies related to late payments. For instance, JCT 2016 Design and Build affirms the use of escrow (or trust) accounts to hold money, particularly retentions for completed works on site.

An escrow (or trust account) is a ring-fenced account set up by client where a sum of money is deposited for the project. It is normally managedand delivered by a third party (escrow agent) in a condition precedent for a contractor's performance in the contract. Latham (1994) argued on the use of escrow or trust accounts as form of protection against a client's insolvency, whereas if the client failed to pay the amount due to the contractor, the escrowfund would release payment according to the progress of the works.

Furthermore, Hughes et al. (1998) affirmed the withholding of money in a trust account to be a powerful means of returning contractors to a site and rectifying defective works. On the contrary, it could be argued that in construction, holding money in a single account creates cash flow pressures on a contractor's, particularly Tier 2, which results in unfair payments. Moreover, Davis(1991), Hughes et al (1998), Supardi et al (2011), and Ramachandra(2013) argued that the use of bonds, guarantees, insurances, charging orders,notices and direct payments as security for subcontractors and suppliersagainst insolvency nevertheless risks unfair payment practices by clients or contractors in a project.

Arguably, a significant feature in all administrative measures has been the use of project bank accounts (PBA) in readdressing the late payment problem. Kilgallon (2013) affirmed a PBA as a ring-fenced bank account from which payments would be made to ensure that the contractor and its supply chain received timely payment for the amount due. The PBA model, as compared to an escrow account, is either held by the contractor himself or herself (the single

authorisation model) or both client and contractor (the dual authorisation model) for a particular project (Griffiths et al. 2017).

Under a PBA, the subcontractor submits an interim application to the main contractor showing a breakdown of payments claimed by each supplier with the purpose of counterchecking if necessary, should any adjustment be required by the contractor. Once approved, the client will pay the total amount of monies into the PBA, through which payments are directly made to each member of the supply chain. If the client wants to reduce or adjust payments due to a contractor's defaults, the contractor will be required to make a top-up payment to the account so that the subcontractors and suppliers can be paid on time. Moreover, to avoid a deficit of payments, a client must ensure that the balance remains at an agreed minimum level under a PBA (Kilgallon 2013).

Arguably, the novelty behind the aforementioned PBA model has been the government's recommendation to achieve public spending savings and readdress chronic unfair payment practices in the construction supply chain. The National Audit Office report (2005) posited that "… there is need to provide specialist small and medium sized contractors or suppliers with greater certainty that they will be paid on time … if this does not exist the supply chain will have little incentive to innovate". However, a serious number of concerns and dissatisfactions have been raised by practitioners concerning the administrative burdens and the costs of setting up PBAs. In particular, strong opposition has been queried by Tier 2 clients (main contractors) as it undermines their commercial advantage to withhold payments.

3.6 Potentiality of Emerging Technologies in Minimising Late Payments

Peter and Arewa (2017) stressed that there was no gainsaying that emerging technologies (such as 5D-BIM, Automated Payment Systems (APS), Smart contracts, Agresso Unit 4 and Artificial Intelligence) had the potential to minimise late payment problems in construction. For instance, the use of the 5D-BIM model enables users to extract comprehensive and accurate cost information by creating a relationship between the elements, specifications and

properties of individual elements and objects within the project. Boon and Prigg (2012) defined 5D-BIM as “data–rich” objects that support the function of cost modelling; assemblies of cost components added either by incorporating cost data in the model itself or “live-linking” it to estimating software tools. The 5D-BIM model itself links the cost data to the information model (normally 3D) that forms the foundation of a living cost plan (Mitchell 2012). This allows simultaneous changes to finance, funding, budget variances, cost forecasting, investment decisions as well as negotiations with contractors. Forgues et al. (2012) argued that such features assisted practitioners (especially quantity surveyors) to achieve cost certainty, effectivedesign, time savings in take-off of quantities, estimation; transparency and increased control and predictability of project stakeholders.

Moreover, other contemporary technologies have been proven to have great leverage over construction payments. Barber (2012) posited that digital devices such as Automated Payment Systems (APS), Smart Contracts and Agresso Unit 4 provided opportunities for instant and timely payment practices that were accurate, efficient and easily interrogated within project base organisations. These devices have dynamic links to modelled information that allow for easy recompilation of quantities that enhance the progress of payment calculations visible to the supply chain.

Peter and Arewa (2017) were of the view that these technologies had potentials to minimise administrative inefficiencies, inaccurate valuations, bureaucratic tendencies, multi-tiered hierarchical structures, delinquencies and the industry culture of ‘pay-when-paid’ that influence late payments to construction contractors.

3.7 Contractual Relationships and Unfair Payment Practices

In most construction practices, there exist three types of contractual relationships: client to main contractor (C-MC), main contractor to subcontractor (MC-SC), subcontractor-sub-subcontractor (SC-SSC) and sub subcontractor-suppliers/vendors (SSC-S/V). Although each of these working

relationships are interdependent, most are characterised by a high degree of fragmentation such as less cooperation, limited mutual trust, self-vested interests, ineffective communication and hostile-dependent relationships, etc. (Chan et al. 2004; Clough et al. 2015; Moore et al. 1992). For instance, within both main and subcontractor boundaries, the subcontractors are expected to work for the main contractor and carry out a specialised area of construction works on their behalf, whereby the former is responsible for supervising and ensuring that the construction works are carried in accordance with the client's requirements.

Again, at the sub-subcontractor and sub-supplier contract's interface, the subcontractor will engage other sub-subcontractors to carry out the whole or a portion of the construction works while the latter will coordinate a group of suppliers or vendors to obtain construction works or materials. To be precise, all parties from the client, the main contractor and the subcontractors are integral to the process and are interdependent. Arguably, within the construction industry, most of these aforementioned relationships are characterised by either long-term or short-term business relationships or hostile-dependent relationships (Tan and Xue 2017).

To begin with, long-term business relationships are deemed to exist between C-MC or MC-C with the purpose of achieving specific business objectives and comparative advantages in their resources. Long-term business relationships are deemed to be used interchangeably with the term 'partnering' in construction as this emphasises greater performance and improvement through a collaborative or long-term business relationship. In other words, partnering is benchmarked by parties working together in an open, trusting and long-term relationship based on mutual objectives, agreed methods to problem resolution and continuous improvements (Construction Excellence 2004).

For instance, the ability of the main contractor to form long-term relationships with subcontractors stems from a good performance record and cooperation over a number of years that takes the form of relational contracting. Such relationships are deemed to be fair, adequate and well established by both

parties, with the purpose of treating each other as long-term partners or teammates (Eom et al. 2015). Similarly, a long-term business relationship occurs between the client and the main contractor if the project goals (cost, time and schedule) are constantly satisfied by the contractor or a similar partner that undertakes construction activities for clients.

As for short term or one-off business relationships, these are formed mostly between MC-SC or SC-SCC as a result of one party or member possessing specific abilities or competencies in carrying out specialised construction work, then disbanding once completed (Chiang 2009; Dainty et al. 2001; Moore et al. 1992). Although most of these relationships are one-off or specific to a project, most are deemed to be somewhat adequate and cooperative between the main contractor and the subcontractor.

A hostile or unsatisfactory relationship exists between SSC-supplier; as it focuses on individual interests and commercial gain as opposed to the former (Chalker et al. 2016). Relationships between SSC-supplier are thus conflicted. Figure 3.7 depicts the nature of client-contractor relationships between C-MC, MC-SC, SC-SSC and SC-SCC. It could be argued that long-term businesses have contributed to an adequate relationship with the upper tiers in construction while the lower tiers are seemingly susceptible to short term and hostile-dependent relationships.

For instance, the Group Scape (2019) survey asserted that 93% of subcontractors and suppliers prioritised and protected the long-term relationships between themselves and Carillion, thus enabling the contracting company to hide its true financial difficulties. Arguably, most Tier 1 and Tier 2 client relationships are generally deemed to be cordial in terms of payments and their relationship can also be adjusted to be fair. However, the literature considers relationships between Tier 2 and Tier 3 or Tier 3 and Tier 4 to be chequered when it comes to unfair payments.

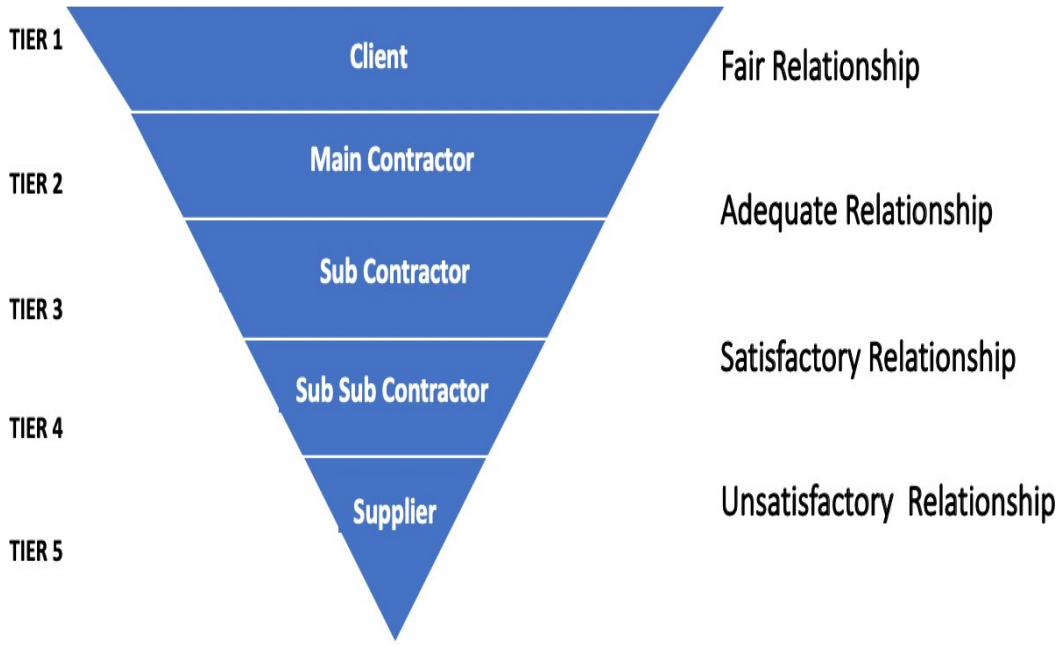


Figure 3.7 Nature of the Client-Contractor Relationship

3.8 Summary

Overall, this chapter has reviewed existing solutions and measures for late payment dilemmas in construction. The solutions and remedies were reviewed within contractual, legal and administrative as well as technological contexts. In terms of contractual provision, the chapter has focused on payment provisions in SFoC's that are used in the UK construction industry. Furthermore, within a legislative and administrative context, the chapter has reviewed various charters, legislations, codes and measures that attempt to minimise unfair payment practices. The chapter has highlighted that the efficacy of contractual and legislative provisions is to reinforce certainty of payment and protection for the supply chain in case of a client's or contractor's insolvency. Furthermore, there are proven potentialities (i.e. qualities that can likely be developed) within emerging digital technologies for minimising unfair payment practices in construction. Henceforth, the next chapter will explain the research methodology used in investigating the study problem identified in the reviewed literature.

CHAPTER 4

Research Methodology

4.1 Introduction

This chapter reviews the research methodology and methods used in this study. The elements described in this chapter are research philosophies, paradigms, approaches, methods, strategies, time horizons and data collection techniques and procedures. In addition, the chapter explains the validity and reliability of the research findings and ethical principles adhered to by the study.

Key elements of research methodology and methods are described in Saunders' et al. (2016) 'research onion' concept in Figure 4.1. The figure explains the connection between theories and arguments that inform the research and methodological choices for data collection. Churchill (1979) and Crotty (1998) ascertained it is essential for research to provide a direction (or means) for collecting and analysing data at a certain period of the study.

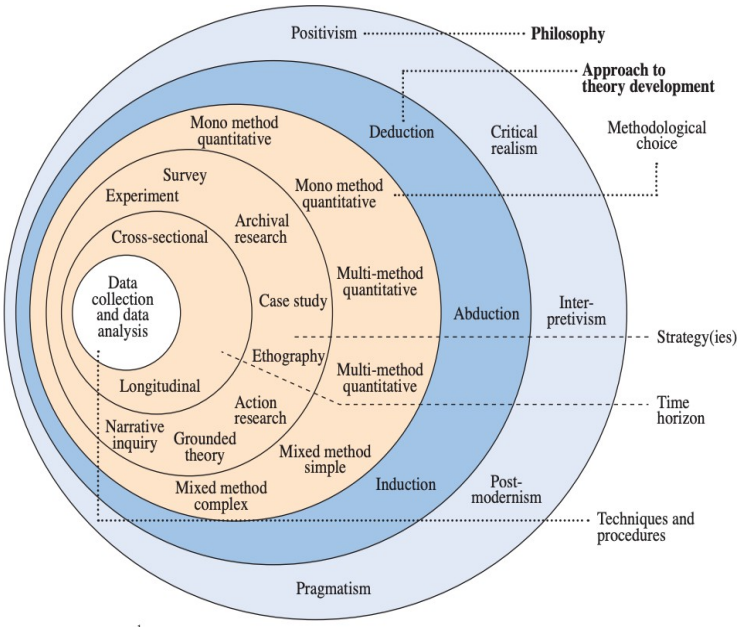


Figure 4.1 Research Onion Concept adapted from Saunders et al. 2016

4.2 Research Philosophy

A research philosophy is “a basic set of beliefs and assumptions” that guide the actions or worldviews of the researcher (Guba 1990). Burrell and Morgan (1979) claimed that whether consciously aware or not, a significant number of assumptions are made or encountered at each stage of a research that influences the understanding of the research questions. These philosophical assumptions include the following:

- Ontology: refers to assumptions about the form and nature of realities. In the broader sense, ontology is concerned with questions of existence about what truly exists, what does it look like, what units make a research problem and how does it interact? (Blaike 2000) For instance, do unfair payments truly exist? Which tier of construction clients are prone to unfair practices? Why does the current contractual or legislative measures fail to address the problem?

- Epistemology: refers to assumptions about knowledge, what is constituted as acceptable, valid and legitimate knowledge and how knowledge is acquired (Burell and Morgan 2012). As for this study, the research problem spans from systemic inquiry to a constructive view of knowledge. For instance, both descriptive and explanatory knowledge (statistical data, textual and visual, facts from interpretations and narratives) are all considered acceptable in illustrating the nature of the problem.

- Axiology: refers to values and ethics that influence a research process (Saunders et al. 2019). Does the researcher input some of his or her own presumptions to the studied problem? Does the researcher espouse his or her own values on the data collection and analysis of the results?

On the other hand, many researchers like Bogdan and Bilken (1998), Patton (2002), Neuman (2009), Lincoln et al. (2011), Mertens (2010) and Creswell and Creswell (2018) have argued that sometimes the term ‘worldview’ is referred to as paradigm.

4.3 Research Paradigms

A paradigm is a loose collection of logically related assumptions, concepts or propositions that guide and inform a researcher's thinking (Bogdan and Biklen 1998). MacNaughton et al. (2001) defined paradigms as beliefs about the nature of knowledge, methodologies and the validity of undertaking a research study.

According to Mackenzie and Knipe (2006), there are many research paradigms discussed in literatures, including positivist (and postpositivist), constructivist, interpretivist, transformative, emancipatory, critical, pragmatic and deconstructive. Definitions of some of the most common paradigms and the choice of the chosen paradigm will be discussed as follows.

4.3.1 Post-positivist Paradigm

Known as the scientific method or empirical science in research, post-positivism is a deterministic philosophy in which causes are used to determine effects or outcomes (Creswell and Creswell 2018). Post-positivism reduces ideas (or causes) into small discrete sets that can be experimented on or measured using instances of research hypotheses, questions, or theories.

In social science, O'Leary (2004) argued that post-positivism sees the world as ambiguous, variable and multiple in its realties. He described this notion based on human behaviour that can be vague and inconsistent, stating that "what might be true for one person or cultural group may not be truth for another". For instance, what is perceived to be fair to the client or main contractors may perhaps not be fair to subcontractors or suppliers, i.e. interest or discounts for prompt payments. He further suggested that this paradigm or worldview is intuitive, comprehensive, inductive and investigative in findings that are quantitative in nature.

However, Mertens (2005) contended that positivism gives emphasis to the assumption that the social world can be studied in the same way as the natural world. It is a method of studying the social world that is value free and thus explanations of a causal nature can be provided.

4.3.2 Interpretivist Paradigm

The interpretivist (or constructivist) paradigm is based on an interpretive understanding called hermeneutics (Mertens 2005). The interpretivist paradigm seeks to have an understanding of the world from given subjective experiences or backgrounds. Creswell and Creswell (2018) argued that interpretivists "focus on the specific contexts in which people live and work in order to understand the historical and cultural settings of the participants".

Hence, interpretivism requires researchers to provide open-ended questions and even observations that will obtain information and study the meanings which individuals have formed. Creswell (2007) argued that rather than starting a new theory as in positivism, interpretivists generate or inductively develop theory from their data collection methods. Mackenzie and Knipe (2006) ascertained that interpretivist research is hinged on qualitative data collection methods and analyses or a combination of both qualitative and quantitative methods (mixed methods).

4.3.3 Pragmatic Paradigm

The pragmatist paradigm emanates from actions, situations and consequences opposed by antecedent conditions as post-positivism. Patton (1990) and Creswell (2003) argues that pragmatism focuses on 'what works' and 'solutions to problems' instead of engaging in philosophical arguments about laws of reality (ontology), theories of knowledge (epistemology) or values (axiology). Thus, the pragmatic paradigm emphasises the use of all research approaches and methods to understand the research problem and questions (Creswell 2003).

Similarly, Creswell (2018) asserted that pragmatism holds the door to multiple methods, different worldviews and different assumptions, that form and permit the use of different data collection and analyses. Therefore, the pragmatic paradigm is seen as providing the underlying philosophical framework of mixed-methods research (Tashakkori and Teddlie 2003; Somekh and Lewin 2005).

4.3.4 The Transformative Paradigm

According to Mertens (2010), the transformative paradigm upholds that the research inquiry needs to be intertwined with politics and a political change agenda that confronts social oppression at each stage at which it occurs. In essence, research needs to contain an action agenda that will advocate and reform the lives of participants, the institutions where they work or live and the researcher's life as well (Creswell 2014). For instance, there are key issues that need to be addressed that impact construction contractors in the UK, such as unfair payment practices, the use of adhesion contracts, imbalance in the supply chain, cowboy tactics and asymmetric business relationships. Mackenzie and Knipe (2006) claim the transformative paradigm utilises both qualitative and quantitative (mixed) methods in same way as interpretivists/constructivists. Again, Somekh and Lewin (2005) affirmed that integrating a mixed methods approach in a transformative paradigm provides a complete understanding of "our social world through the use of multiple perspectives and lenses".

Based on the predefined objectives and questions of this research study, the pragmatic paradigm was chosen. This is because the nature of the research study itself, i.e. 'unfair payment practices', is investigative, practice oriented and a real industry problem in construction as illustrated in table 4.3.4a. Again, the researcher acknowledges 'unfair payments practices' are pluralistic in nature as there is more than one contributing factor and seeks to understand the 'what' and how' (research questions) using different methods, as seen in table 4.3.4b.

Table 4.3.4a Paradigm language commonly used in research (adapted from Mertens (2005) and Creswell (2003) cited in Mackenzie and Knipe (2006)

Positivist/ Postpositivist	Interpretivist/ Constructivist	Transformative	Pragmatic
Experimental Quasi-experimental Correlational Reductionism Theory verification Causal comparative Determination Normative	Naturalistic Phenomenological Hermeneutic Interpretivist Ethnographic Multiple participant meanings Social and historical construction Theory generation Symbolic interaction	Critical theory Neo-Marxist Feminist Critical Race Participatory Emancipatory Advocacy Grand Narrative Empowerment issue oriented Change-oriented Interventionist Queer theory Race specific Political	Consequences of actions Problem-centred Pluralistic Real-world practice oriented Mixed models

Table 4.3.4b Research paradigms, methods and tools (adapted from Mertens (2005) and Creswell (2003) cited in Mackenzie and Knipe 2006)

Paradigm	Predominant research methods	Example of data collection tools
Positivist/ Postpositivist	Quantitative	Experiments Quasi-experiments Tests Scales
Interpretivist/ Constructivist	Qualitative methods	Interviews Observations Document Reviews Visual Data Analysis
Transformative	Qualitative methods with quantitative and mixed methods.	Diverse range of tools – that will particularly avoid discrimination, e.g. sexism, racism and homophobia.
Pragmatic	Qualitative and/or quantitative methods. Methods are matched to the research questions and aim.	May include tools from both positivist and interpretivist paradigms, e.g. interviews, observations, testing and experiments.

4.4 Research Approach

Saunders et al. (2016) stated three principal approaches to research: deductive, inductive and abductive. The deductive approach is the collection of data with a view to testing or verifying one's theory. The deductive approach derives conclusions via a set of premises or analyses that contain some form of truthfulness or knowledge (Ketokivi and Mantere 2010). The deductive approach is also known as 'top-down', allowing the researcher to begin with a broad area and then move to specific suppositions that can be tested (i.e. collecting data from literature, then developing theories or ideas to test it).

On the other hand, the inductive is the process by which theory is developed after observations are made. Saunders et al. (2016) asserted that the inductive approach explores phenomena and identifies themes and patterns that will develop the research hypotheses. Therefore, the inductive is the converse of deductive, as it generates theories after observations as opposed to verifying existing theories (i.e. observations, patterns, tentative hypotheses, theories).

Miller and Brewer (2003) affirmed that the abductive approach uses both empirical observations and theoretical suppositions to create new ideas. The abductive

approach is a mixture of deductive and inductive approaches and its main characteristic is the continuous movement between the empirical world and the modelled world (Dubois and Gade 2002), with a continuous interplay of both concept and data (Van Maneen et al. 2007). In simple terms, the abductive approach seeks to discover new ideas and variables, rather than conform to existing theories and theory generation.

This study adopted the abductive approach because it matches the nature of the research objectives and the extent of the subject matter. The approach underpins the fact that it takes account of a sizeable amount of theories, literatures and knowledge concerning unfair payments. Moreover, the researcher uses different approaches to extract and reveal data from inductive and open-ended research settings whilst using deductive attempts to verify hypotheses (Yin 2003). Moreover, the abductive approach supports the nature of the research study as 'pragmatic' and attempts to integrate systemic empirical observations and theoretical models to understand the study problem.

4.5 Research Strategy and Time Horizons

Denscombe (2017) described a research strategy as a distinct logic, actions and goals driven to achieve a specific objective. It entails the process and the direction in which the research is to be conducted. Saunders et al. (2009) ascertained that the selection of an appropriate research strategy is guided by the research questions, the objectives, the amount of existing knowledge, time, the resources available and the underpinnings of the researcher's own philosophical assumptions.

Based on this criterion, different researchers have proposed various types of strategies. For instance, Trochim and Donnelly (2008) have classified research strategies into the following: experimental and non-experimental (surveys). Hair et al. (2007) described strategies as exploratory, causal or descriptive. Other strategies proposed by Saunders et al. (2009) and Crotty (2004) include case studies, action research, grounded theory, ethnography and archival etc. Table 4.5 provides a list of different research strategies corresponding to their purposes and methods used in research.

This study will use concurrent research strategy to provide a comprehensive understanding of the research problem. The concurrent strategy uses or merges both quantitative and qualitative methods to collect and analyse data in the study (Creswell 2003). Todd (1979) ascertained that the concurrent strategy allows researchers to have more confidence in their results, to stimulate the creation of inventive methods and find new ways of capturing a problem and understanding the phenomenon beyond the study.

Table 4.5 Research strategies and their corresponding purposes and methods (adapted from Creswell 2018)

Strategy	Purpose of Research	Method
Surveys and Experimental	• Measures trends, attitudes or opinions of social phenomena • Gathers facts to test a theory • Identifies the cause of something	Quantitative
Case studies	• Understands the complex relationship between factors, for instance if they operate within a particular social setting	Qualitative
Ethnography	• Describes cultural practices and traditions • Interprets social interactions within culture	
Grounded theory	• Analyses concepts or produces new theories	
Action (or Narrative) research	• Solves practical problems • Produces guidelines for best practice	
Phenomenology	• Describes the essence of specific types of personal experience • Understands things through the eyes of someone else	
Concurrent Explanatory or Exploratory	• Evaluates anew • Combines strategies or aspects • Compares alternative perspectives of a phenomenon	Mixed method

Conversely, Saunders et al. (2009) ascertained that it is imperative to consider the time frame for the investigation of a research problem. According to Bryman and Bell (2015), there are two types of time horizon: longitudinal and cross sectional. A longitudinal study is a process that covers a period of time, often years or decades. In other words, longitudinal research is a design that collects data from a sample (or cohort) at a repeated number of times or observations.

Longitudinal study has the ability to answer questions about causes and consequences by comparing results obtained in different ways. Cross-sectional research is defined as a design conducted at a particular point in time,known as a “snapshot”. A cross-sectional study collects data to make inferences abouta population of interest (universe) at one point in time. Punch (2013) however noted that with consistent change in a population’s characteristics, the actual situation may not be much reflected by a cross-sectional study.

Arguably due to the time constraints of this research, a cross-sectional study was deemed to be appropriate. Saunders et al. (2009) ascertained that often, a cross-sectional study ‘snapshot’ uses descriptive surveys and employs the mixed method strategy as well.

4.6 Research Method

A research method refers to the procedures or techniques used to collect and analyse data. Myers (2013) defined a research method as a strategy of inquiry that moves from underlying philosophical assumptions to the research design and data collection. Research methods are broadly categorised into three methods: qualitative, quantitative or mixed methods (Saunders et al. 2019). The following subheadings will explain these methods briefly, followed with an explanation of the adopted research method.

4.6.1 Quantitative and Qualitative Methods

According to Mack et al. (2005), quantitative methods focus on data collection techniques (questionnaires) or analysis procedures (statistics) that generate numerical data. Quantitative methods seek to explain phenomena and analyses using mathematical methods. Easterby-Smith (2002) and Amaratunga et al. (2002) argued that quantitative methods are advantageous in the following: the search for causal explanations and fundamental laws, the formulation of hypotheses for subsequent verification, the simplification of a problem to facilitate analysis and the determination of reliability.

Conversely, Bryman and Bell (2007) argued that qualitative research methods were originally developed in social science to study phenomena that were not explained through numbers and indices, but through world views via human perceptions. Qualitative methods constitute part of interpretive paradigms that seek to “describe, decode, translate and otherwise come to terms with the meaning, not the frequency, of certain more or less naturally occurring phenomena in the social world” (Van Maanen 1983).

Yin (2003) ascertained that the strength of qualitative research lies in its explanation of complex issues within the natural setting of a research phenomenon, Skyes (1990) opined that qualitative methods offer greater flexibility and responsive interactions between researcher and participants.

4.6.2 Mixed Method

The mixed research method denotes the integration of both quantitative and qualitative methods in a single study. A mixed method research considers multiple viewpoints, standpoints, data collection and analysis techniques, using both quantitative and qualitative research (Johnson et al. 2007). The purpose is to draw the strengths and minimise the weaknesses of both, rather than replacing or using either method in a single study (Johnson and Onwuegbuzie 2004). According to Creswell (2003), using mixed methods in research helps to provide comprehensive evidence for studying a research problem and answering questions rather than using quantitative or qualitative methodologies alone.

Creswell and Clark (2018) argued that in overlapping mixed methods,research designs would vary depending on whether qualitative and quantitative data would be collected either sequentially or concurrently. Figure 4.6.2 illustrates the mixed method research and its core design (note → stands for sequential and + for concurrent).

The sequential design refers to the collection and analysis of one form of data prior to a second form of data, for instance the QUAN → QUAL concept, meaning the quantitative method is the lead data collection instrument. Quantitative data is first

collected and analysed, then qualitative data is collected, analysed and used to validate the quantative findings. The concurrent design however requires the collection and analyses of both quantitative and qualitative data in a single phase, as the researcher had to implement and prioritise both qualitative and quantitative methods to collect and analyse the data, then merge both sets of results for the overall interpretations.

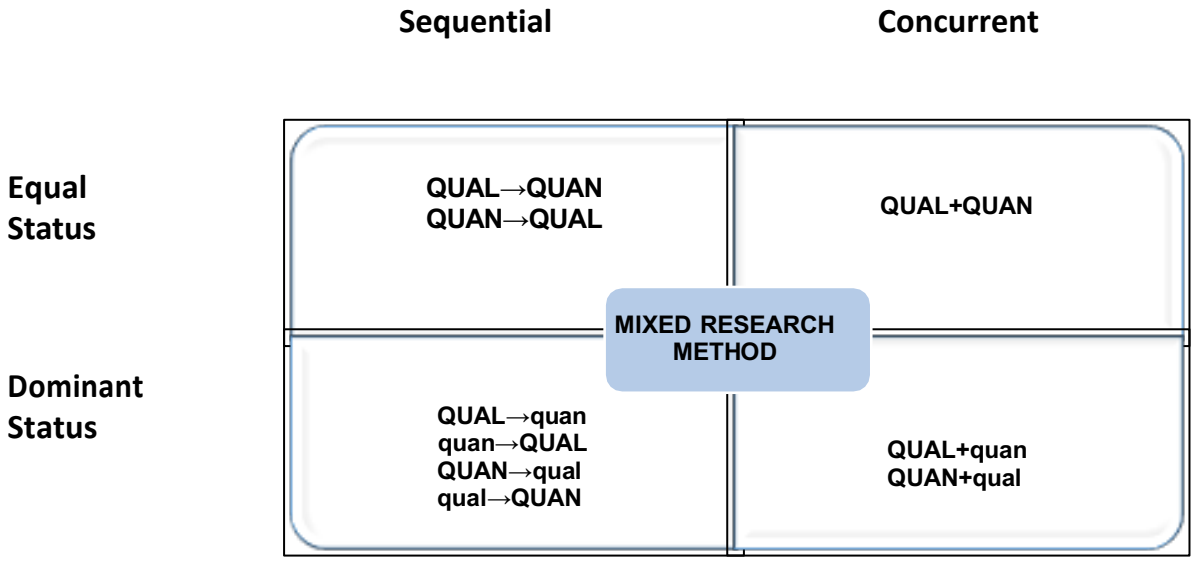


Figure 4.6.2: Mixed-method design adapted from Johnson and Onwuegbuzie (2004)

4.7 Justification for the Chosen Method

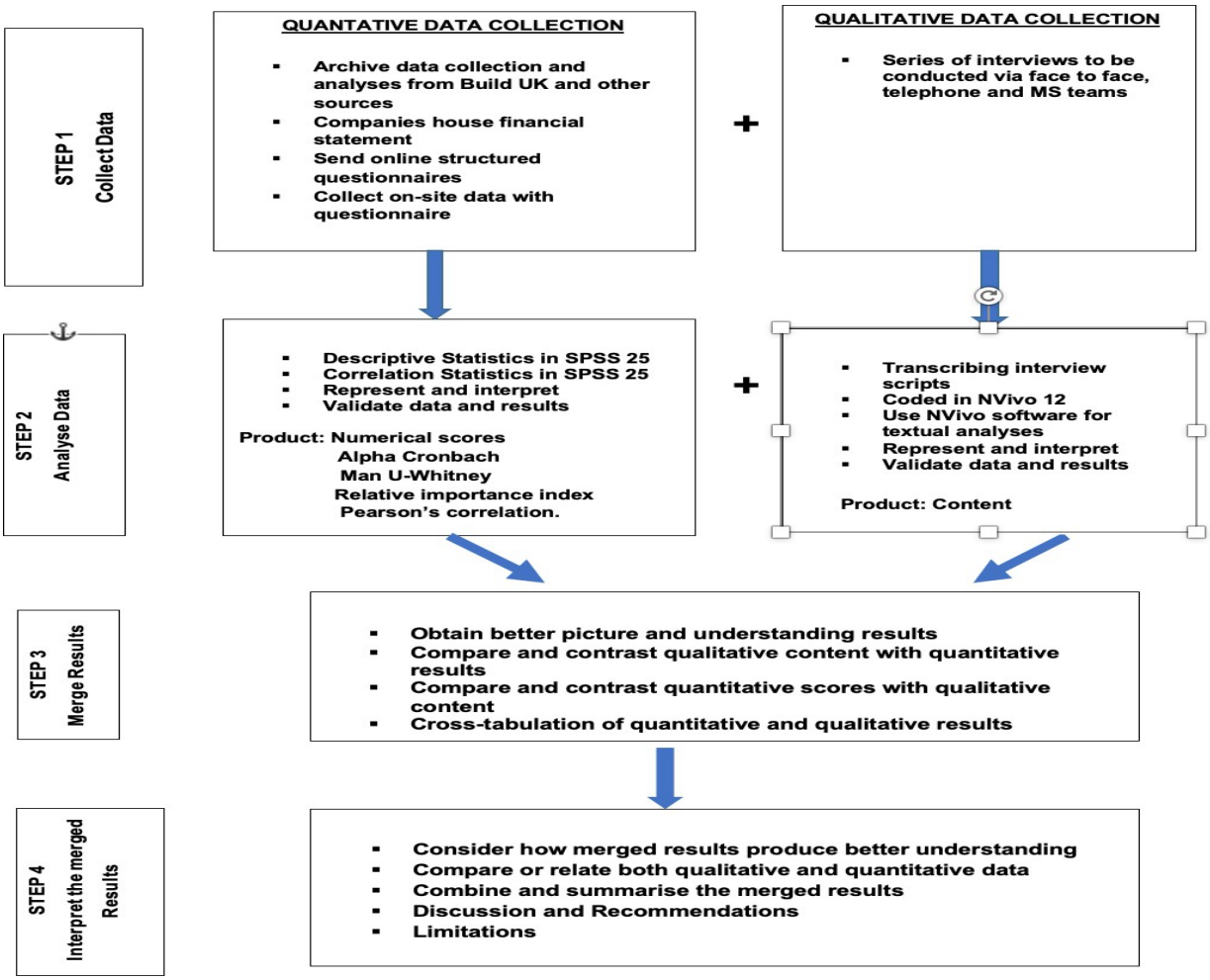
The study adopted the concurrent mixed research method to enable the researcher to capture the study problem using multi-methods that help to achieve both the reliability and validity of the study's outcome. This is further deemed to be in line with the researcher's philosophical position and the strategies adopted to support the use of the mixed method.

The concurrent mixed method used in this study follows the precedent of the researcher collecting both qualitative and quantitative data, analysing them separately and then merging the results to obtain a more comprehensive understanding of the subject matter (Creswell and Creswell 2018).The key deduction of this method is that both qualitative and quantitative data often provide different types of information. For instance, detailed experiences of the participants can be captured qualitatively and the instrument scores from the quantitative results can be merged to interpretate the

findings (Creswell and Creswell 2018). Johnson and Onwuegbuzie (2004) identified that using the concurrent mixed method could help to strengthen both confirmation and validation in a single study.

Thus, the study's quantitative data were collected from both archival documents and questionnaire surveys. The study's archival data relating to payment performance and practices was obtained from reputable sources such as Build UK, individual companies' published data and the Companies House Website. In addition, a semi-structured interview was carried out to gain an in-depth standpoint on the prevalence of unfair payments in UK construction. Table 4.7 represents a flow chart of the research method that denotes the use of the concurrent mixed method in the study.

Table 4.7: Flowchart of the Procedures in Implementing the Concurrent Mixed Method in the study



4.7.1 Quantitative Method of the Main Study

To meet the aim of study, both a closed and open-ended questionnaire was developed and used to gather data from participants regarding their perceptions and opinions about unfair payment practices in the construction industry. Saunders et al. (2009) and Bryman and Bell (2007) argued that questionnaires are considered to be one of the most commonly used methods or tools for eliciting data from a sizeable population in research.

The authors further state that questionnaires allow the researcher to extend the knowledge and findings concerning the research problem prior to understanding the subject. However, both the nature of this study and the objectives and population sample influenced the researcher's decision to use a questionnaire survey as one option for the data collection. Thus, the following sub-section will provide an explanation of the questionnaire design, the selection of the participants, the piloting of the questionnaire, the data collection procedures, the measure scale and design of the questionnaires and the strategies used to improve them.

4.7.1.1 Questionnaire Design

The questionnaires for this study were designed to answer a predefined aim and the research questions (Burgess 2001). A semi-structured questionnaire constituting both closed and open-ended questions was used to capture all the necessary information needed for the study. Open-ended questions were used to give the participants a degree of freedom in answering and in gathering their insights concerning unfair payment practices in the UK construction industry. The closed-ended section in the questionnaire meanwhile was designed to elicit specific response from them (Fellows and Liu 2008). The closed-ended questions were fixed to a likert scale by the researcher whereas the open-ended questions were left to the participants to input or give their own wording of their answers or experiences to the study problem and the questions asked.

The researcher developed two set of questionnaires for the study, whereby questionnaire survey 1 captured the general understanding of the research problem and questionnaire survey 2 measured clients' perceptions of it. The two sets of

questionnaires were distributed at different time intervals to enhance the study's reliability. Questionnaire survey 1 consisted of two sections. Section 1 consisted of 18 questions with corresponding likert scales aimed at obtaining participants' perceptions or opinions of unfair payment practices in the construction industry. This section included both multiple and open-ended questions that yielded in-depth information and insights from the participants. The second section consisted of demographic information such as professional designation, years of experience, form of contract, nature of business and type of organisation. Questionnaire survey 1 consisted generic question about unfair payment practices and covered the study's objectives.

Similarly, Questionnaire 2 consisted of two sections. Section 1 consisted of several likert-scales and multiple-choice questions, while section 2 consisted of demographic data. Questionnaire 2 was more specific with its questions regarding the nature and extent of unfair payment practices, payment durations and clients' perceptions of unfair payment practices.

4.7.1.2 Piloting of the questionnaire

The designing of the questionnaires was carried out in two phases. The first phase consisted of sample questionnaires for piloting purposes. This phase included obtaining information needed for the questionnaire, the type of questionnaire and method of administration, the content of the questions (knowledge, behavioural or perceptions), the form of response, the sequence and wording, the layout and output and then piloting of the questions. Peat et al. (2002) argued that it is important for a researcher to pilot their questionnaires prior to data collection in order to appraise the reliability of the questionnaire's findings.

Critique and feedback from the pilot study were used to refine and redesign the questionnaire to enhance reliability. See appendices A and B for questionnaires A and B, designed to measure the opinions of participants regarding unfair practices in the UK construction industry.

4.7.1.3 Measurement of the questionnaire

The measurement section of the questionnaire was designed to capture the perceptions of the study participants about unfair payments in the industry. Holt et al. (2013) suggested that the design of scale must consider the type of data it will generate as well as the analysis model that will be used.

The measurement scale of the study's questionnaire was designed using a likert scale to obtain the participants' opinions, perceptions and the extent to which they agreed with the statements in the questionnaire. A five point likert-scale (0 to 5) was used, ranging from (i) '0=very strongly disagree' (ii) '1=strongly disagree' (iii) '2=disagree' (iv) '3=agree', (v) '4=strongly agree' and (vi) '5=very strongly agree'. The "unsure" option was added and marked as = -'. Effects of unfair payment practices as independent constructs were also assessed using a likert scale, though the terms used were (i)'1=very low effect (ii) '2=low effect (iii) '3=moderate effects', (iv) '4=high effect agree' and (v) '5=very high effect'.

Table 4.7.1.3 below illustrates the designed questionnaire's measurement scale section and percentage scores for the codes assigned to each measurement scale.

Table 4.7.1.3: Questionnaire measurement scale

Research question		Very strongly agree	Strongly agree	Agree	Disagree	Strongly disagree	Very strongly disagree	Unsure
What role does standard forms of contract and clients-contractor relationship play on chronic unfair payment practices in the UK construction industry?	Number assigned to each response to question	5	4	3	2	1	0	-
	% score of each range	18X5/90=100%	18X4/90=80%	18X3/90=60%	18X2/90=40%	18X1/90=20%	18X0/90=0%	-

Note: the calculation of percentage scores in Table 4.7.1.3 are based on assumptions for 18 questions in the designed questionnaire. A code of 5 was assigned to 'very strongly agree' down to zero (0) 'very strongly disagree' and 'unsure'. For instance, by

multiplying the total questions in the questionnaire (in this case 18) by the maximum assigned code of 5, giving a total of 90, the percentage score for 'very strongly agree'= 18 x 5/90 = 100%, 'strongly agree' = 18 x 4/90 = 80%, and so on. See the percentage calculation of each 'response scale' in Table 4.7.1.3 above. Note that no number was assigned for the option 'unsure' on the likert scale because it was assumed to be purely an indecisive response within the scale.

4.7.1.4 Participant selection and sample

Easterby-Smith (2002) argued that it is important for researchers to select participants who can provide insights concerning the research problem. Hence, the selected participants for this study were based on a population sample with practical experience and robust perceptions of construction industry payment practices. Dornyei (2007) argued that a group of participants taking part in an empirical investigation is a population sample for a study.

Purposive sampling was used to select participants who were proficient and well-informed about the study problem. Denscombe (2017) argued that although random or systematic sampling portrays the ideal basis for a representative sample, purposive sampling provides the opportunity for the researcher to extract the best information from persons or instances with valuable experiences of or insights into the research topic.

Purposive sampling, however, was particularly used by the researcher based on prior knowledge of specific people or events and particular participants were deliberately selected to explore their perceptions and explanations of the study problem (Miles et al.2014).Hence, a sizeable population of professionals and other construction practitioners were selected such as quantity surveyors, project managers, architects, consultants, clients, contractor and subcontractors working the UK construction industry.

4.7.1.5 Data collection and procedures

To ensure that the data obtained from the questionnaires truly reflected the circumstances surrounding the research problem, certain procedures were adhered

during collection. These procedures constitute methods used during the distributionof the questionnaire and time constraints inputted to complete it.

To begin with, the first stage of the questionnaire distribution was carried out through site visits, whereby questionnaires were distributed to participants to complete and return. This was crucial to obtain first-hand information about the research problem and build a good rapport to facilitate the subsequent qualitative data collection (interviews).

The second stage was carried out through a web-based questionnaire that was designed and sent to the participants via emails and contact addresses obtained from online searches, telephones, conferences or workshops, networking and referrals. An online tool called Online Surveys (or BOS) was used to design and collect the questionnaires, via a Uniform Resource Locator link (URL) created and sent to ease the collection of responses from the participants and import the collected data into statistical packages for analysis.

Note that it was important for the researcher to collect both on-site, remote and self-administrated questions to yield better responses and accurate results for the study. As to the time constraints inputted in the study, the questionnaires were planned to be collected from 6 to 12 months on the basis of follow-ups and other efforts made by the researcher. The questionnaire link was created and was sent from 14th September 2018 to the closing date of 23th November 2019. However, for the online questionnaire, participants started to respond from 1st November 2018 because of the time taken in sending individual links to reach out to participants and professionals from the industry. The questionnaire was kept open for a further for 2 weeks until 9/12/2019. The on-site and on-line questionnaires were collected simultaneously.

4.7.2 Qualitative Method for the main study

To gain in-depth understanding of the research problem, this study conducted qualitative interviews. The collection of qualitative data helped the researcher to obtain information about the experiences, perceptions and opinions of construction

practitioners with regard to unfair payment practices in the UK construction industry. This research method was also merged with the study questionnaire to buttress and complement the weaknesses of both.

According to Qu and Dumay (2011), the use of qualitative interviews provides a powerful means to discover new knowledge and capture the accounts of experts in the field in a more open, consistent and systematic manner. To obtain qualitative data, semi-structured interviews were conducted with seasoned construction professionals. The researcher prepared a list of questions that intended to address the study's aim and objectives (see appendix C). Saunders et al. (2009) claimed that semi-structured interviews give the researcher freedom to probe further about the research problem; with the flexibility to cover or change certain themes and questions that will emerge from the interviewee's answers.

4.7.2.1 Interview design and measure

In order to conduct an effective structured interview, Klenke (2016) argued that having a guide or protocol is essential to the entire process. The interview protocol or interview guide is list of questions or topics that the participants will be asked about. The interview guide is helpful to cover the key research questions and probe aspects of what the participants say.

A semi-structured interview was used, comprising a set of prepared open-ended questions that enabled the researcher to gather answers and to probe for any issues raised that were related to the subject matter. Consequently, the first phase of the face-to-face qualitative data method commenced with a few personal or factual comments about the researcher, the purpose of the study, individual consent, the duration of the study and any foreseeable risks or discomforts to the subject. This was done to build rapport between interviewer and interviewees.

A set of prepared questions was then used to cover different areas of the subject matter, while open ended questions encouraged the interviewees to make further considerations while enabling the interviewer to probe aspects of what they were saying. Probing questions were constructed from any follow-up questions, gestures or

verbal excerpts from the participants during the course of the interviews to generate further interpretations from them. During the interviews, the researcher opted to be a keen or good listener rather than speaking more to extract further information or insights given by the interviewees.

4.7.2.2 Participant selection and the sample

The study participants considered for the interviews were construction clients, project managers, quantity surveyors, contract managers, commercial managers, contractors, subcontractors, representatives of construction trade bodies and construction specialist providers. The selection of participants was mainly drawn from questionnaires administered during site visits, a contact directory via https://www.linkedin.com/home, construction professional bodies, building magazines and networking from continuous professional development programmes (CPD).

As previously discussed in the quantitative method, purposive sampling was also employed by the researcher to select interviewee who were proficient and well-informed about the study problem. The purposive sampling was comprised of seasoned industry practitioners and contractors that possessed construction experience and were recognised as members of high professional bodies. These groups were carefully considered to extract their practical and industrial experiences of unfair payment practices in the UK construction industry.

4.7.2.3 Procedure and data collection

After obtaining the participants' consent to take part in the proposed interviews from site visits and online sources, arrangements were made as to the scheduled date, time and location of the interviews. Prior to the interviews, the participants were sent a Research Participant Information Sheet (PIS) that outlined the details of the research, the consent form and the ethnical checks carried out by both the researcher and the research directors (see appendix D). Moreover, due to geographical and access constraints to reaching some of the participants, the researcher engaged the use of some digital technologies such as Skype, Microsoft Teams, Zoom and others to conduct interviews depending on the availability and preferences of the interviewees.

4.7.2.4 Equipment

The equipment used in conducting the interviews were a digital tape recorder, phone recorder and the physical jotting of key points. The digital recorder was used by the researcher in recording and preserving the participants' opinions given in the interviews, as note taking proved to be cumbersome. Moreover, before the commencement of an interview session, the participants were notified in advance by the researcher regarding the purpose of the study, the duration of the interview and their right to participate or withdraw from the process. Hence, a participant's information sheet and consent form were sent out prior to the interview.

4.7.3 Archival data method for the study

Apart from quantitative and qualitative methods used in the study, archival data from Companies House was extracted and analysed to measure the effects of unfair payments on contractors' business performance. Financial statements of some UK companies involved in the study were sought to investigate the companies' performance and payment practices (Table 6.3, 6.3 and 6.4).

A total of 40 UK construction companies' financial data were obtained from networking and from interviews conducted by the researcher: 14 were mechanical and electrical companies, 9 were concrete companies, 4 were roofing companies, 4 were interior designers and installers, 1 was a floor screeder; 3 were lift companies, 2 were demolition companies and 3 were specialist ground works contractors. Afterward, the researcher went to obtain their financial performance data constituting profit and loss accounts from 2014 to 2018. Other financial data were retrieved from Companies House via the website: https://www.gov.uk/government/organisations/companies- house .

The archival data are presented in section 6.4.1 and 6.4.6 of the analysis of business performance. The list of construction companies together with their operating profit margin, turnover, return of capital employed, current assets and current liabilities is attached in appendix E. Moreover, 15 case studies were added as part of the archival data to investigate the prevalence and effects of unfair payment practices on construction companies.

Moreover, documented payment data from a government website was obtained and analysed in order to have broader view of payment practices and the performance of different tiers of construction clients. The data was sought from the Build UK Group Limited and is available at the following URL link https://builduk.org/information/ and presented in Tables 6.3.1, 6.3.2 and 6.3.3.

4.8 Data Analysis

4.8.1 Quantitative data analysis

For a robust quantitative analysis, all data obtained were edited and any questionnaires with invalid or inaccurate responses were eliminated. The data were then coded by assigning numbers to the questionnaire's options (i.e. 'very strongly agree'=5, 'strongly agree'=4, 'agree'=3, 'disagree'=2 and 'very strongly disagree'=1) as illustrated in Table 3.4. Full details of the analysis on an Excel spread sheet is attached in Appendix F. Using the Excel spread sheet, a cross tabulation of data was manually carried out. Data were inputted with each question succeeding another on the basis of how they were returned or received.

Each questionnaire was denoted as Participant 1, 2, 3, etc. (up to the total number received) on the vertical axis and question variables were arranged on the horizontal axis to match with each response to the question. Using the Statistical Package for the Social Sciences (SPSS.25), different statistical tests were then conducted to analyse the collected data and test the research questions. Nachmias and Nachmias (2008) argued that it is vital for researchers to carry out statistical analyses from data obtained from questionnaires and surveys.

Descriptive statistics such as mean, standard deviation, rank scores and relative important index (RII) were carried out to provide a description of the robustness of standard forms of contracts, the magnitude of unfair payment practice and the causes and effects of unfair payment practices. Moreover, internal reliability and data consistency tests such as Cronbach's Alpha test, Mann Whitney U-test and the skewness test were conducted. Inferential analysis techniques such as Pearson'

coefficient correlation test were also used to investigate the relationships between the study variables.

4.8.2 Qualitative data analysis

Data obtained through the interviews were analysed using content analysis. This method of analysis helps to examine written texts, verbal or visual communication messages by making replicable and valid inferences from the data to a few content categories (Elo and Kyngas 2008). Often it is argued that classifying words into the same categories, phrases and such like, share the same meanings or interpretations (Cavanagh 1997).

Therefore, the data sourced from the interviews were recorded using a digital or phone recorder and transcribed into written forms and texts by listening to the taped conversations or discussions held between the researcher and the study participants. The transcribing into manuscript was carried out where different textual excerpts, concepts or themes had emerged from the interview data. The textual excerpts were then inputted into Nvivo 12 software, where codes were assigned to key themes to facilitate the filtering and sorting of data. Codes were used to attach meanings to disparate information and responses to the data. The themes from the study objectives and aim were used to create codes and sub-codes from the transcribed data. The coded data are analysed in Chapter 7 as ‘textual excerpts or contents’ from the participants’ responses. Accordingly, excerpts from the interviews were obtained using content analysis; by counting the number of processes and extracting systematic and objective meanings from each content via valid inferences from both verbal and archival data.

4.9 Reliability and Validity

To uphold the credibility of research data, validity and reliability are used to measure the quality and trustworthiness of the qualitative scientific and experimental studies, often based on standardised methods according to predetermined instruments.

Winter (2000) argued that there seem to be endless theoretical arguments concerning the nature or definition of the terms ‘validity’ or ‘reliability’ in academic and social

research. However, Kuzmanić (2009) stressed that there is a “pure form of truth” somewhere out there, that can be discovered by using appropriate and most importantly, valid research methods. For straightforwardness, this study infers reliability to the quantitative method and validity to the qualitative, in order to construct different interpretations (or social worlds) for the readers.

Reliability in the questionnaires was addressed by the detailed design of the questionnaire aligned to predetermined objectives using an appropriate scale of measurement. Also, other standards designed to uphold reliability included data collection procedures, a pilot study and analysis techniques. As for the semi-structured interviews carried out by the researcher, validity was upheld through the selection of experienced participants, the design of the interview questions, the instrument of collection, the transcription and processing of the data and the presentation and interpretation of the interview data. Moreover, the use of both multi-methods in investigating the research question enhanced the reliability and validity of the research findings (Saunders et al. 2009 and Denscombe 2017).

4.10 Ethical Considerations

Adherence to established and recognised ethical principles is a primary concern for any researcher. Saunders et al. (2009) defined ethics as the researcher’s behaviour towards the research participants or people affected by the research. Ethics can be said to be moral principles and social norms that dictate behaviour and activity. To ensure that this study was carried out to high ethical standards, the researcher sought approval from the established research ethics committee at Coventry University. A copy of the ethics certificate and clearance is attached in Appendix G. The following subsection will briefly explain the key ethical issues that were addressed in this study.

4.10.1 Consent of the Participants

Consent of the participants is a crucial aspect of ethical considerations in any research. The study participants’ consent for this study was sought using a consent form, as seen in appendix H. The consent to participate in the interviews was sought before any site visits or interviews carried out by the researcher. Prior to all site

visits, full information regarding the purpose of the interview, its duration, location, time and date were thoroughly made clear before a site visit took place

For the online survey, a participant's information sheet (PIS) was attached at the beginning of the questionnaire to give information concerning the nature of the project, the purpose of the study, any risks; and also instruction and guidance on accessing the questionnaire. In addition, the participants were made aware that their participation was voluntarily, and they had the right to withdraw at any stage of the research

4.10.2 Privacy and Confidentiality

Bell and Bryman (2007) stressed that in any form of qualitative research, issues related to confidentiality and anonymity must be taken into consideration. For instance, prior to this study's data collection, the researcher had to assure all participants that the data collected would be used for academic purposes and would not be disclosed to any third party. Thus, for the online questionnaire survey, the BOS survey tool was used by the researcher to keep the collected data private and confidential as well as protecting the participant's anonymity.

The BOS offered an URL link access to the questionnaire that was emailed by the researcher directly to the participants and their representative organisations. Once the survey was completed, all data from the responses was downloaded to the researcher's personal computer for the purposes of analyses. All interview data were tape recorded, transcribed and kept strictly confidential by the researcher, with a password used to prevent unlawful access.

4.11 Summary

This chapter outlined the research methodology and methods used for this study. The chapter took account of the 'Research Onion' concept to explain the current stance of the research in terms of its philosophical assumptions, research approaches, strategies and methods used in the data collection. The chapter also presented measures taken to ensure the validity and reliability of the study.

CHAPTER 5

Quantitative Data Analysis

5.1 Introduction

This chapter presents the quantitative analyses for the questionnaire data. The results are presented under five subsections aligned with the research objectives discussed in Chapter 1.3. Section 1 provides a brief description of both the questionnaire surveys and the methods used; while Section 2 presents the sample representativeness and demographic information of the questionnaire survey. Sections 3 and 4 provide results of Mann-Whitney U-test, Skewness test and Cronbach's Alpha for the questionnaire data collected from both hard copy (as in face to face) and online sources. These tests were essential for the questionnaire survey to ascertain the measures for the internal consistency and reliability of the collected data.

The analyses of unfair payment practices in the UK construction industry are then discussed in sub-themes such as the forms and magnitude of unfair payments, clients' perceptions of unfair payment practices, the causes of unfair payment practices, the robustness of payment procedures and their provision in standard forms of contracts. Also, the role of the client-contractor relationship in unfair payment practices and the effect on contractors' business performance were subsequently analysed. Furthermore, financial ratios were employed to measure and assess the business performance of construction companies prone to unfair payment practices, namely gross profit, operating profit margin, return of capital employed (ROCE), current ratio and quick ratio. The analyses and discussions in this section are presented in various tables and graphs whilst conclusions are presented in Chapter 8.

5.2 Questionnaire Description

Two sets of academic questionnaires were used for this study. The questionnaires were administered to different study participants at different time intervals. The design of questionnaire 1 specifically measured generic issues about unfair payment practices such as their causes, the scale of the problem and its impact on business performance. Questionnaire 2 was designed to measure the disparity in commercial

bargaining power, contractual relationships and construction clients' perceptions of unfair payment practices in the industry. The study also used two sets of questionnaires to enhance its reliability and credibility by collecting data from two distinct spectrums of the population sample.

Both questionnaire surveys were administered to seasoned stakeholders and practitioners working in the UK construction industry. Table 5.2 presents the total number of questionnaires received with regard to their validity and the methods used. A total of 201 questionnaires were collected, but some of the questionnaires were filled incorrectly. Therefore 179 were considered for analysis.

Table 5.2 Total number of valid questionnaires received from each method

Methods employed for data collection	**Total number of questionnaires received**	**Total number of valid questionnaires received**	**Percentage o f invalid questionnaire response (%)**
Online	132	115	17
Face to face	69	64	4
Total	**201**	**179**	**32**

5.3 The Wilcoxon Signed Rank Test for Data Homogeneity

Table 5.3.1 illustrates the total perceptions of the study participants for questionnaire 1 of the collected data. Groups 1 and 2 below denote questionnaire data collected via online platforms and face to face, respectively.

Using SPSS version 25, a test for homogeneity was conducted to ascertain if there were significant differences between data collected via online methods (URL/emails) (coded as group1) and the data obtained face-to-face (coded as group 2), as illustrated in table 5.3.1

Table 5.3.1: Total perceptions of study participants to questionnaire surevy-1

No of respondent	Total percentage response from online data	Total percentage response from online data	Total percentage response from online data	Total percentage response from online data	Total percentage response from online data	Total percentage response from face to face data	Total percentage response from face to face data
	Group 1	**Group 1**	**Group 1**	**Group 1**	**Group 1**	**Group 2**	**Group 2**
1	73	70	53	60	64	58	59
2	66	64	62	61	43	60	39
3	66	64	63	42	53	66	48
4	59	54	62	51	47	63	57
5	51	59	60	47	51	66	56
6	63	71	43	50	59	60	60
7	48	61	51	59	57	51	59
8	49	67	64	57	50	66	68
9	56	63	64	51	52	66	67
10	72	63	57	66	50	66	51
11	57	53	57	43	64	39	28
12	47	59	50	68	65	56	59
13	59	54	52	52	64	70	60
14	62	53	43	59	63	66	67
15	64	66	68	57	60	61	50
16	40	66	71	51		66	64
17	56	63	62	63		61	59
18	49	51	69	43		73	57
19	50	48	64	68		62	57
20	54	60	64	61		64	48
21	57	63	47	50		52	36
22	50	71	52	51		60	54
23	63	58	57	68		51	67
24	43	69	73	67		58	65
25	68	48	62	53		70	
26	60	56	69	46		66	
27	68	46	58	51		69	
28	68	69	67	59		69	
29	60	53	66	56		65	
30	58	58	58	49		67	

Overall mean of percentage responses (n=135) =57%

Overall mean of percentage responses from online URL (n=64) =59%

Note: 179 study participants overall were grouped into three categories in this particular table.

Table 5.3.1.1 Wilcoxon signed rank test on questionnaire data collected- survey 1

Test Statistics	
	Face to face - Online
Z	-1.967[b]
Asymp. Sig. (2-tailed)	0.081
a. Wilcoxon Signed Ranks Test	
b. Based on positive ranks.	

Table 5.3.1.1 illustrates findings for the Wilcoxon Signed Rank test conducted between groups 1 and 2. The statistical test revealed asymptotic significance (2-tailed) for group 1 vs. group 2 as (Z= -1.967, *p*=0.081). This implies that there was no significant difference between the data collected from online and face-to-face methods, as the p value exceeded 0.05. The homogeneity test confirmed that the group of data collected from these different sources were homogeneous; thus, both data could be used for further quantitative analysis.

Table 5.3.2: Total perception of study participants to questionnaire survey 2

No of respondent	Total percentage response from online data	Total percentage response from online data	Total percentage response from online data	Total percentage response from online data	Total percentage response from face to face data	Total percentage response from face to face data
	Group 1	Group 1	Group 1	Group 1	Group 2	Group 2
1	87	80	60	64	87	86
2	73	63	61	43	73	73
3	63	63	42	53	63	63
4	63	96	51	47	63	80
5	73	57	47	51	80	68
6	68	73	50	59	68	73
7	53	68	59	57	67	68
8	67	53	57	50	67	64
9	104	63	51	52	68	68
10	73	57	66	50	67	64
11	63	73	43	64	68	64
12	63	68	68	65	73	56
13	96	53	52	64	68	73
14	57	57	59	62	64	68
15	63	68	57		67	53
16	57	67	51		57	56
17	73	57	63		67	60
18	68	87	43		57	70
19	53	73	68		73	73
20	57	69	61		68	68
	Overall mean of percentage responses (n=74) =66%					
	Overall mean of percentage responses from online URL (n=60) = 63%					

Table 5.3.2.1 Wilcoxon signed rank test on questionnaire data collected- survey 2

Test Statistics	
	Face to face - Online
Z	-.246[b]
Asymp. Sig. (2-tailed)	.805
a. Wilcoxon Signed Ranks Test	
b. Based on positive ranks.	

Similarly, table 5.3.2.2 illustrates the Wilcoxon Signed Rank test conducted between groups 1 and 2. Note that the data used for this analysis was from questionnaire 2 collected separately from questionnaire 1. The statistical test reveals asymptotic significance (2-tailed) for group 1 vs. group 2 as (Z= -.246, p=.805). The finding implies similarity to that stated in the Wilcoxon Signed Rank test reported in table 5.3.2.1.

5.4 Test for reliability (Cronbach's Alpha)

Table 5.4.1 (a and b) present alpha coefficients (α) values of 0.702 and 0.602 respectively. The findings in table 5.4.1 below show that the internal reliability of the two data sets is acceptable, while the internal reliability of Table 5.4.1b may be questionable based on the interpretation of the Cronbach's alpha test in table 5.4.2 put forward by Shavelson (2004).

Table 5.4.1a Cronbach's alpha test on data collected in questionnaire 1

Cronbach's Alpha	Cronbach's Alpha Based on Standardised Items	N of Items
0.726	0.759	24

Table 5.4.1b Cronbach's alpha test on data collected in questionnaire 2

Cronbach's Alpha	Cronbach's Alpha Based on Standardised Items	N of Items
0.602	0.6114	18

Cronbach's Alpha test was essential to determine the internal consistency of the questionnaires' data sets.

Table 5.4.2: Interpretation of Cronbach's alpha reliability test values adapted from Shavelson (2004).

Cronbach's alpha value	Internal consistency
0.9 < a	Excellent
0.8 < a < 0.9	Good
0.7 < a < 0.8	Acceptable
0.6 < a < 0.7	Questionable
0.5 < a < 0.6	Poor
$\alpha < 0.5$	Unacceptable

5.5 Descriptive statistics

Table 5.5a Descriptive Statistics for Questionnaire 1

	N	Range	Minimum	Maximum	Mean	Std. Deviation	Variance	Skewness	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error
VAR00001	179	5	0	5	3.60	1.032	1.07	-0.259	0.182
VAR00002	179	5	0	5	2.78	1.015	1.03	0.78	0.182
VAR00003	179	5	0	5	3.28	1.121	1.26	-0.19	0.186
VAR00004	179	5	0	5	3.54	1.175	1.38	-0.41	0.183
VAR00005	179	3	1	4	2.42	0.923	0.85	0.01	0.182
VAR00006	179	4	1	5	2.18	0.858	0.74	0.55	0.182
VAR00007	179	5	0	5	2.20	0.939	0.88	-0.28	0.182
VAR00008	179	4	1	5	3.16	1.026	1.05	0.21	0.182
VAR00009	179	4	1	5	4.11	0.818	0.67	-0.45	0.182
VAR00010	179	4	1	5	3.92	0.804	0.65	-0.24	0.183
VAR00011	179	4	1	5	2.72	0.787	0.62	0.26	0.184
VAR00012	179	4	1	5	3.55	1.081	1.17	-0.49	0.183
VAR00013	179	5	0	5	2.77	0.931	0.87	-0.42	0.207
VAR00014	179	4	1	5	3.72	0.811	0.66	-0.08	0.183
VAR00015	179	4	1	5	3.39	0.856	0.73	0.32	0.184
VAR00016	179	3	2	5	3.75	0.811	0.66	-0.04	0.184
VAR00017	179	3	0	3	1.47	0.785	0.62	-0.53	0.183
VAR00018	179	4	0	4	1.81	1.195	1.43	-0.28	0.214
Valid N (listwise)	98								

Table 5.5b: Descriptive Statistics for Questionnaire 2

Descriptive Statistics										
	N	Range	Minimum	Maximum	Mean		Std. Deviation	Variance	Skewness	
	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Statistic	Statistic	Std. Error
VAR00001	94	3	2	5	3.617	0.0727	0.70492	0.497	0.137	0.249
VAR00002	94	2	1	3	1.68	0.0645	0.62584	0.392	0.355	0.249
VAR00003	94	2	3	5	3.595	0.0647	0.62766	0.394	0.562	0.249
VAR00004	80	4	1	5	3.5	0.1052	0.94132	0.886	-1.074	0.269
VAR00005	94	2	3	5	3.51	0.06	0.58189	0.339	0.627	0.249
VAR00006	94	2	3	5	3.659	0.0633	0.6144	0.377	0.358	0.249
Valid N (listwise)	80									

Table 5.5 (a and b) presents the descriptive statistics of the questionnaire data. The descriptive statistics describes the data behaviour regarding the study participants' perceptions of the questions asked. The data range shows a minimum value of 0 and a maximum value of 5; meaning that the data dispersion level is normal. The data is not scattered, nor does it have minimal variability. The mean value for the data set shows the average responses to each question. This denotes that most study participants agreed on the questions asked; except for questions 17 and 18 with mean values of 1.47 and 1.81 in table 5.5a and question 2 in table 5.5b.

A critical review of these questions with a low mean will be discussed subsequently. The standard deviation (SD) of the data set in table 5.5b reveals a small value compared to the data set in table 5.5a. The SD of 5.5b reveals closeness of responses provided by the study participants to the mean score, meaning that the SD in table 5.5b is even or is close to the mean value. However, the SD data in table 5.5 seems to show the contrary. Moreover, the variance values for both tables show a low value ranging from 0.34 to 1.43; meaning the rate at which the study participants changed their perceptions was not very wide. For a thorough understanding of the data set's behaviour, a skewness statistics test was conducted to ascertain the even and uneven distribution normality of the questionnaire data.

5.6 The Skewness Test

Figure 5.6 (a, b and c) illustrates the skewness diagrams and values for variables 1, 2, 3, 4, 5, 7, 8 and 9, that represent questions 1, 2, 3, 4, 5, 7, 8 and 9 in questionnaire survey 1; and the variables 2, 3, 5 and 6, that represent questions 2, 3, 5 and 6 in questionnaire survey 2. The graph for figure 5.6a shows a distribute skewed to the right-hand side, denoting that responses to the questions received a positive response, while graph 5.6 b shows a normally distributed response of an average of 3. However, figure 5.6 c presents the skewness diagram and values for variables 6,10 and 11, that represent questions 6,10 and 11 in questionnaire survey 1. The graph shows a distribute skewed to the left-hand side, denoting that responses to the questions received a negative response at an average of less than 2.

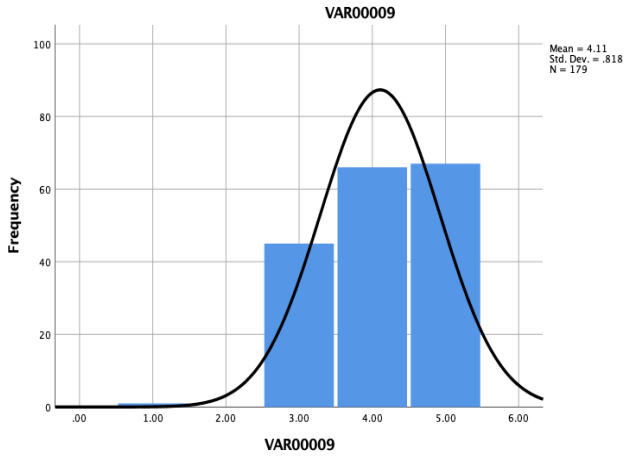


Figure 5.6a Pictorial view of skewness for Questionnaire 1

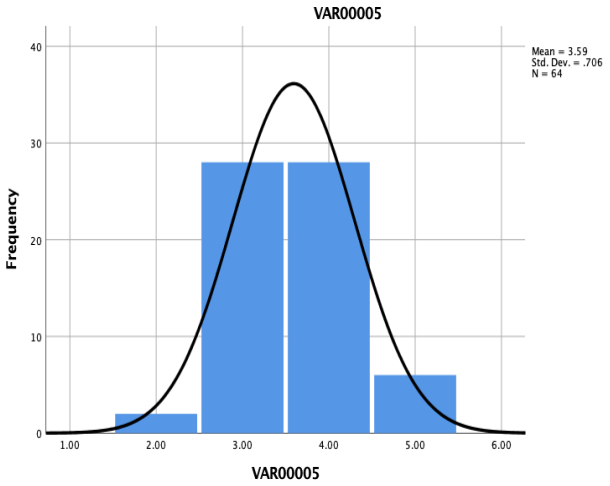


Figure 5.6b Pictorial view of skewness for Questionnaire 2

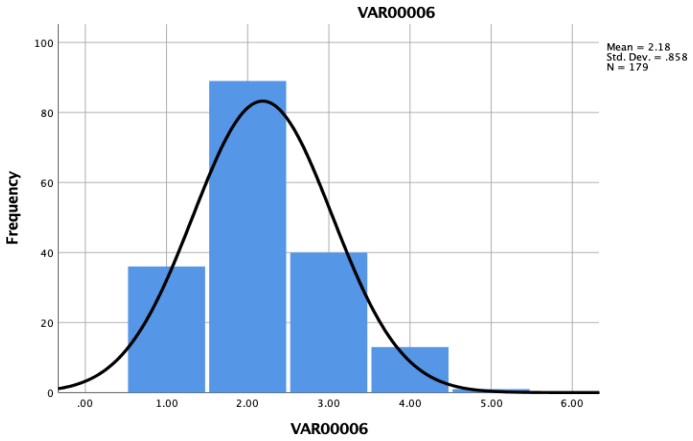


Figure 5.6c Pictorial view of skewness for Questionnaire 1

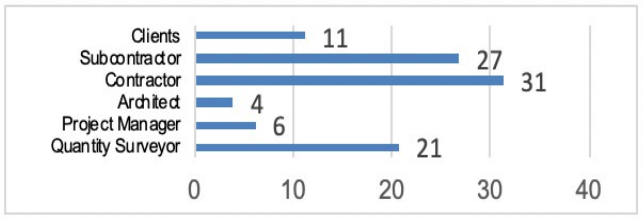
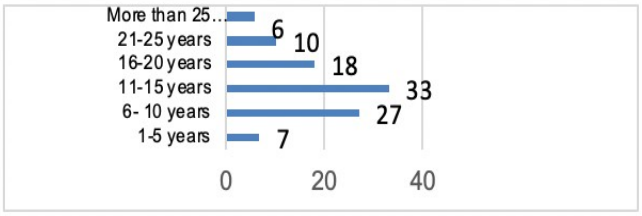
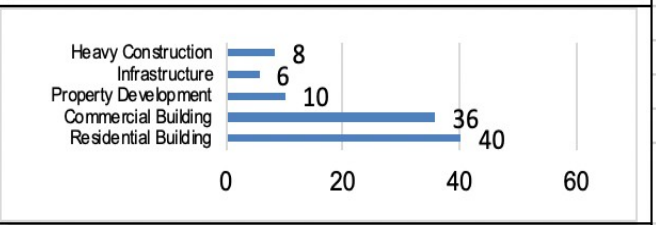
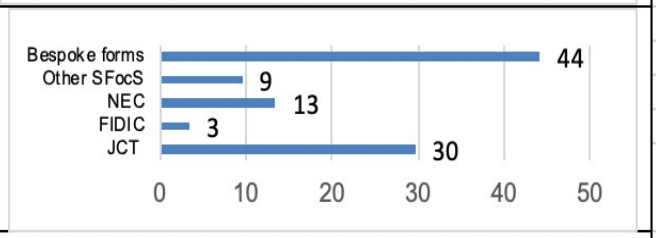
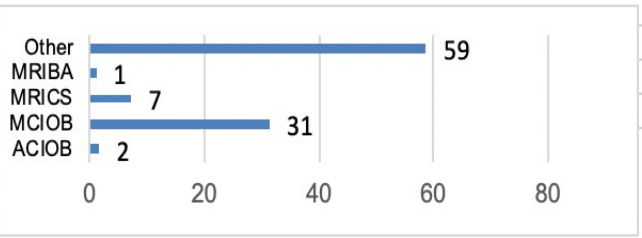
5.7 Profile of the study participants

Majority of participants that took part in the study indicated their professional backgrounds as follows: 31% contractors, 27% subcontractors, 21% quantity surveyors; 11% clients, 6% project managers and 4% architects. Table 7.6 provides a summary of the study participant sample.

The distribution of the study participants' years of work experience in the construction industry shows the follow demographics: 33% of study participants had 11-15 years of work experience; 27%-6-10; 18%-16-20; 10%-21-25 and 7% less than 5 years, respectively. Furthermore, the data also reveals the participants' affiliation to professional bodies. The findings show that 33% were affiliated to the Chartered Institute of Building (CIOB), 7% to the Royal Institution of Chartered Surveyors (RICS), 1% to the Royal Institute of British Architects (RIBA) and 59% to other professional bodies. In terms of the type of contract frequently used in construction, the data shows that 30% used JCT forms, 12% NEC, 9% other standard forms, 5% FIDIC, and 44% used bespoke forms of contracts.

Overall, the data reveals that the study participants' information, work experience and their professional affiliation demonstrated their understanding of the research problem. Hence, credibility of response was obtained.

Table 5.7 Profile of the study participants

General information		Total	Percentage
Participants background	Quantity Surveyor	37	
	Project Manager	11	
	Architect	7	
	Contractor	56	
	Subcontractors	48	
	Clients	20	
Years of work experience	1-5 years	12	
	6-10 years	59	
	11-15 years	48	
	16-20 years	32	
	21-25 years	18	
	More than 25 years	10	
Nature of business	Residential building	72	
	Commercial building	64	
	Property	18	
	Infrastructure	10	
	Heavy construction	15	
Frequently used standard forms of contract (SFoCs)	JCT	53	
	FIDIC	6	
	NEC	24	
	Bespoke SFoCs	79	
	Other SFoCs	14	
Professional affiliation bodies	ACIOB	3	
	MCIOB	56	
	MRCIS	13	
	Others	105	
	MRIBA	2	

5.8 Quantitative Analysis of the study's objectives

5.8.1 Objective 1- To evaluate the robustness of payment procedures in various standard forms of contract used in the construction industry

For emphasis, objective 1 is 'To evaluate the robustness of payment procedures in various standard forms of contract used in the UK construction industry'. Questions 5, 6, 7 and 8 (from survey 1) sought the study participants' opinions regarding objective 1. Table 5.8.1 presents mean scores of 2.46, 2.18, 2.20 and 4.11 for questions 5, 6, 7 and 8, respectively. These values denote that majority of participants disagreed that payment procedures clauses in SFoCs help to alleviate unfair payment practices. Note that the mean score of 4.11 in question 8 indicates that the study participants strongly agreed with the question asked.

It can be argued that participants' response of "Strongly Agree" to question 8 is a true reflection of industry payment practices; because in reality, contractors are often reluctant to use legal means to recover money owed to them. In many cases, SFoCs are normally amended to suit the client's interests; perhaps creating a tendency to limit the fairness and promptness of paying monies owed to contractors. Findings in table 5.8.1 will be discussed further in Chapter 8 (the discussion chapter); where the quantitative, qualitative and archival data will be critically reviewed.

Table 5.8.1 Percentage agreement to payment procedures and provisions in standard forms of contracts

Question No. in the Questionnaire	Percentage agreement to which participants agree or disagree with the following statements:	Mean Score	S.D	Mean score in (%)
5	Payment provisions in standard forms of contracts (SFoCs) helps to minimise unfair payment occurrence	2.46	0.92	49.20
6	SFoCs (JCT/NEC/FIDIC) have sufficient mechanisms to protect contractors against unfair payment practices	2.18	0.86	43.60
7	28 days payment period stipulated by various SFoCS helps to minimise unfair payments	2.20	0.94	44.00
8	Contractors are reluctant to use penalties stipulated in regulations, SFoC and charters concerning unfair payment because of fear that it will damage their business relationship	4.11	0.82	82.20
Total percentage agreement to SFoC's unfair payment practices in the construction industry		**2.74**	**0.88**	**54.75**
Note: Mean 5.00 = Very Strongly agree, 4= Strongly agree, 3= Agree, 2= Disagree, 1= Strongly disagree, 0 =Very Strongly disagree and - was assigned unsure				

Figure 5.8.1 presents a summary chart of the study participants' views in response to study objective 1. The chart largely shows that the majority of participants strongly

disagreed that SFoCs payment mechanisms protected contractors against unfair payment practices; as “very strongly disagree” had a response score of 43%, “strongly disagree” 39% and “disagree” 13%, respectively.

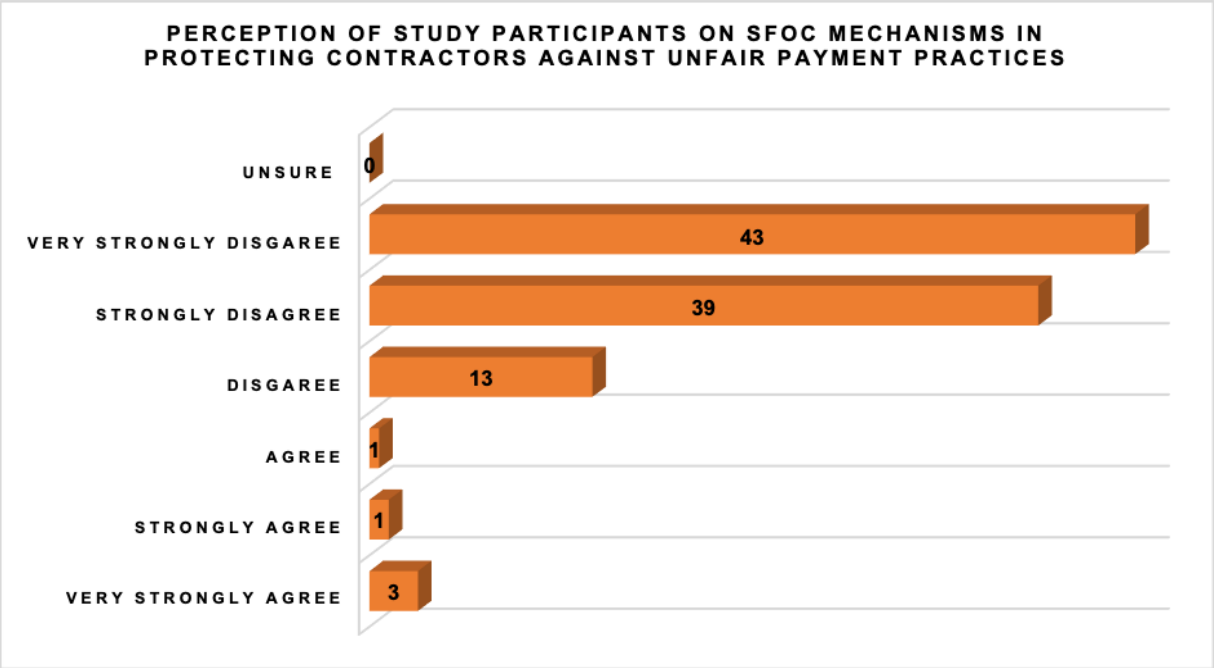


Figure 5.8.1: Perceptions of study participants on SFoCs mechanisms in protecting contractors against unfair payment practices

5.8.2 Objective 2- To determine the magnitude (degree) of unfair payment practices among tiers of construction clients

Questions 11, 12 and 13 (from survey 1) were used to measure the magnitude of unfair payment practices between different tiers of construction clients in the UK. Similarly, questions were asked in the second set of questionnaires. In questionnaire 2, participants were asked to indicate the nature of unfair payment practices within construction in terms of types and commonalities. Note that as explained in Chapter 1 section 1.3, the study has classified tiers of construction clients as Tier 1 clients (major construction clients); Tier 2 clients (main contractors acting as clients to subcontractors) and Tier 3 clients (subcontractors acting as clients to other subcontractors).

Figure 5.8.2.1 illustrates that 45% of study participants agreed that unfair payment practices are frequent among Tier 2 clients. 37% of unfair payment practices are attributed to tier 1 clients and 18% to tier 3 clients.

This indicates that unfair payment practices cut across all tiers of clients in the construction industry regardless of their size, nature and contracting experience, etc. On the other hand, 31% of study participants disagreed that tier 3 clients would withhold or induce unfair payment practices to their contractors and suppliers in the construction industry.

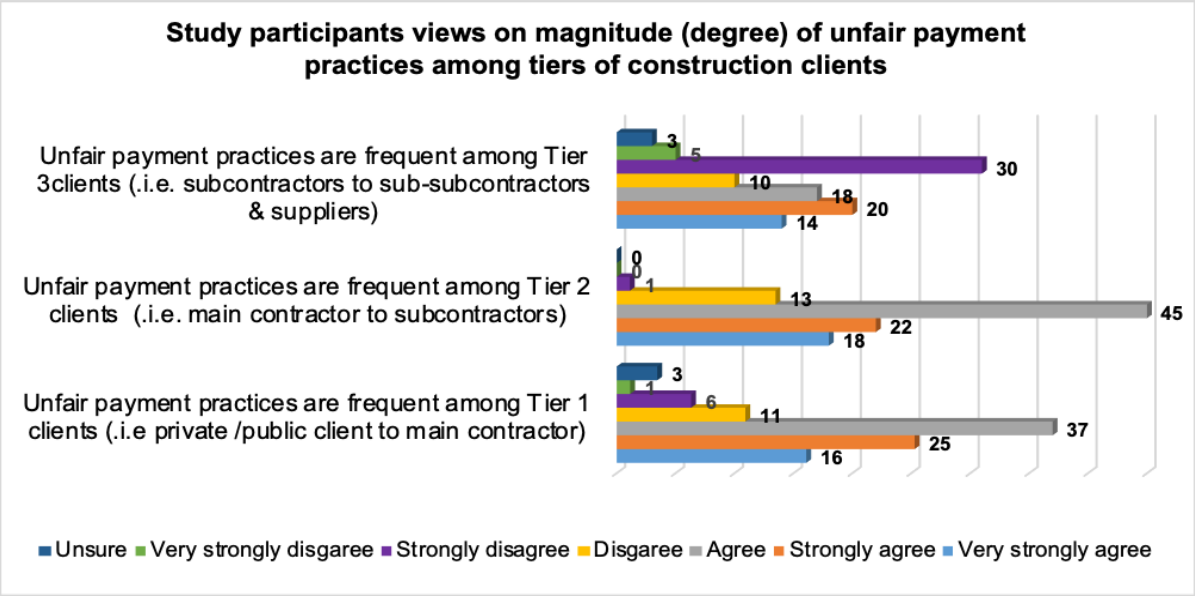


Figure 5.8.2.1 Magnitude of unfair payment practices among tiers of construction clients

Furthermore, questions 6, 7, and 8 in survey 2 asked study participants to indicate types and commonalities of unfair payment practices synonymous with different clients. Findings from figure 5.8.2.2 indicate that over 35% of study participants scored late payments as the most common unfair payment practice for all tiers of construction clients.

Statistically, a breakdown of the figures shows that 38% of late payments cases are attributed to Tier 1 clients; 20% unpaid retentions; 15% pay if notified; 11% imposition of discounted rates for early payments; 9% imposition of rates (bill of quantities); 6% disparities in rates for items and 1% exclusion of provisional remedy.

The findings also reveal that Tier 2 clients are responsible for 37% late payments, 30% unpaid retentions, 20% pay when paid; 5% imposition of discounted rates for early payments, 4% exclusion of provisional remedy, 2% disparities in rates for items and 1% imposition of rates (bill of quantities). Tier 3 clients meanwhile were attributed to

35% of late payments, 29% pay when paid, 26% unpaid retentions, 6% disparities in rates for items, 2% exclusion of provisional remedy, 1% imposition of discounted rates for early payments and 1% imposition of rates (bill of quantities). The prevalence of these unfair payment practices is illustrated in figure 5.8.2.2 below.

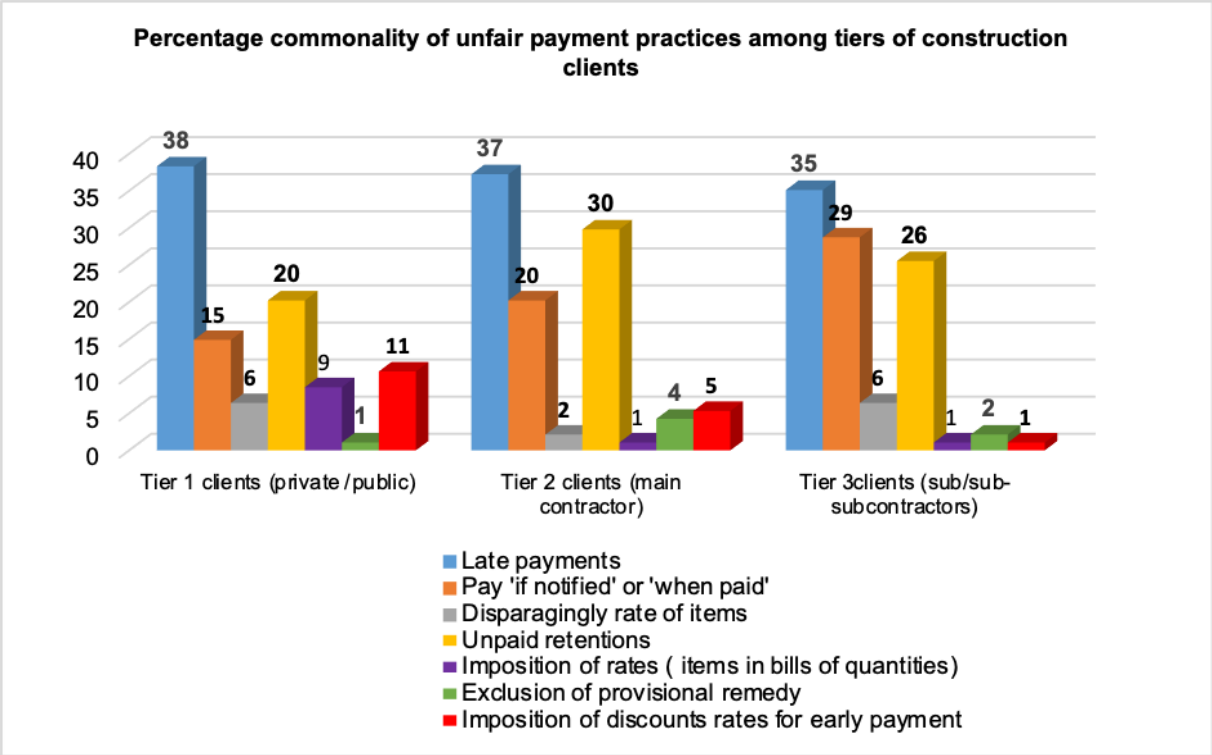


Figure 5.8.2.2 Percentage commonality of unfair payment practices among construction clients

In addition, when participants were asked to indicate the duration of receiving payments from clients; their responses are presented thus: 43% indicated payment terms of 31 to 50 days; 30% between 51 to 90 days; 14% claimed to receive payment between 91 to 120 days and 9% had longer payments terms of 120 days and beyond.

Meanwhile, 4% of study participants claimed to receive regular payments based on agreed contractual terms within 28 days as illustrated in figure 5.8.2.3. The existing literature shows that longer payment terms beyond contractually agreed terms are generally considered as a construction industry norm; with an average time of 46 days for tier 2 clients' (main contractors) to pay invoices to subcontractors and suppliers.

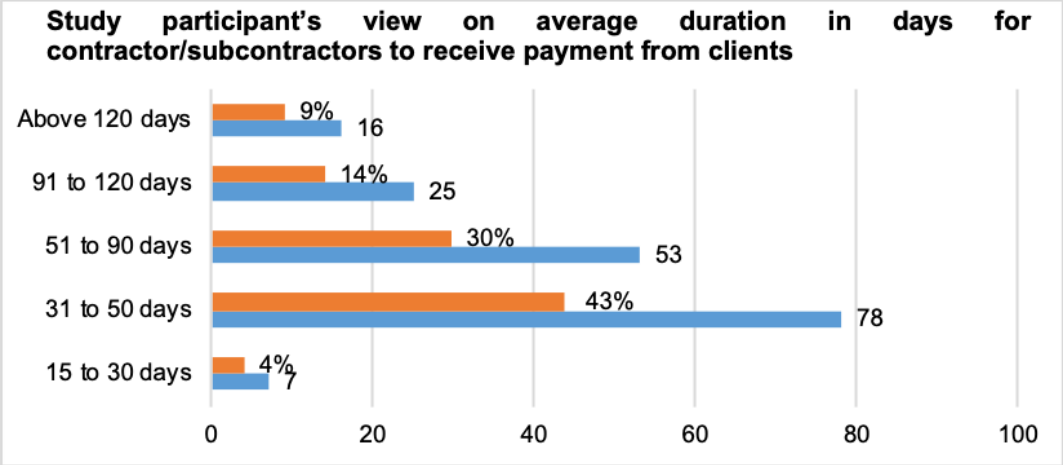


Figure 5.8.2.3 Average duration in days to receive payment from clients

5.8.3 Objective 3 -To investigate the contemporary causes of unfair payment practices in the UK construction industry.

Table 5.8.3.1 presents the rankings for causes of unfair payment practices. The causes were derived from both study's literatures and initial interviews conducted by the researcher. A total of 23 companies' business strategies and causes were identified and subsequently categorised under five main groups, namely (i) cultural; (ii) industrial, (iii) technical, (iv) regulatory and (v) others. The study participants were asked to select from an array of 23 factors presented in the questionnaire using a likert scale ranging from 5= 'very strongly' agree to 0= 'very strongly disagree'.

The mean causes were then calculated based on the participants' responses and groupings, as illustrated in table 5.8.3.1. Note that table 5.8.3.1 presents the study findings grouped into three broad categories, namely contractors (comprising the main contractor, subcontractors and sub-subcontractors), consultants (comprising quantity surveyors, architects and project managers) and clients (private or public).

Table 5.8.3.1 Group rankings and mean of causes of unfair payment practices

Group	No.	Causes	Contractor		Consultants		Client	
			Mean	Rank	Mean	Rank	Mean	Rank
Cultural causes	1	Client-contractor relationship	3.64	1	3.48	2	3.49	3
	2	Pay when paid	3.60	2	3.39	3	3.53	2
	3	'Would not pay' attitude of clients	3.01	5	3.09	5	3.39	5
	4	'Cannot pay' attitude of clients	3.47	4	3.15	4	3.40	4
	5	Prevailing culture	3.50	3	3.57	1	3.59	1
Industrial causes	6	Cowboy bullying	3.21	2	3.38	2	3.29	3
	7	Corruption	2.54	5	2.99	5	3.00	5
	8	Supply chain finance	3.04	4	3.32	3	3.37	2
	9	Low barriers to entry and exit	3.10	3	3.29	4	3.18	4
	10	Industry norm 'work first get paid later'	3.35	1	3.41	1	3.40	1
Technical causes	11	Errors in submitting claims and information carrying out valuation evaluation	2.64	3	3.08	2	3.17	2
	12	Defective works	2.72	4	3.14	1	3.20	1
	13	Delay in approval of works	3.07	2	2.86	4	2.88	4
	14	Insufficient documentation	3.15	1	2.89	3	3.10	3
Regulatory causes	15	Ambiguities within standard forms of contracts	2.69	3	3.17	3	3.17	2
	16	Multi-tiered hierarchical structure	3.43	2	3.30	1	3.26	1
	17	Complex payment legislation	2.50	4	3.09	4	3.00	4
	18	Widespread use of adhesion contracts ' take it or leave it'	3.65	1	3.26	2	3.14	3
Other causes	19	Lack of transparency	2.46	5	2.89	5	2.94	5
	20	Exploiting fierce competition among subcontractors	3.02	3	3.38	2	3.34	2
	21	Undue commercial interest	3.04	2	3.31	3	3.29	3
	22	Administration inefficiencies	2.76	4	3.29	4	3.22	4
	23	Cashflow strategy	3.76	1	3.49	1	3.52	1

Findings from table 5.8.3.1 relating to contemporary causes of unfair payment practices common to contractors illustrate that "cash flow strategy" had the highest average of 3.76; meaning that some construction clients use unfair payment practices as a strategy to enhance their cash flow. This was followed by "widespread use of adhesion contracts" with a mean score mean of 3.64, followed by "pay when paid" with a mean of 3.60 and "prevailing culture" with a mean score of 3.50. These findings reveal that main contractors acting as clients to subcontractors use late payments as a business strategy to boost their cash flow and at the same time, this is a causal factor.

Similarly, causes of unfair payment practices synonymous with construction project consultants revealed that “prevailing culture” in the industry had a mean score of 3.57; followed by use of “cash flow as a strategy” with a mean score of 3.49, “client-contractor relationship” with a mean score of 3.48 and “pay when paid” with a mean score of 3.39. Meanwhile, causes of unfair payment practices linked to client groups revealed that “prevailing culture in the industry” had a mean score of 3.59; followed by “pay when paid” with a mean score of 3.53, cashflow strategy with mean of 3.52 and “client-contractor relationship” with average score of 3.49.

Overall, contemporary causes of unfair payment practices based on clients, consultants and contractors’ analyses show that the use of “cash flow strategy” to boost a client’s finances is the most prevalent, followed by “prevailing culture in the industry”, consideration for the “client-contractor relationship” and the “pay when paid” culture, as summarised in table 5.8.3.2. Tables 5.8.3.1 and 5.8.3.2 infer that contemporary causes of unfair payment practices in the construction industry are wide-ranging and require extensive understanding to curb.

5.8.3.2 Relative Importance Index of contemporary causes of Unfair payment practices

Causes	RII	Rank
Cashflow strategy	3.59	1
Prevailing culture	3.55	2
Client-contractor relationship	3.54	3
Pay when paid	3.51	4
Industry adage 'work first get paid later'	3.39	5
Widespread use of adhesion contracts 'take it or leave it'	3.35	6
‘Cannot pay’ attitude of client	3.34	7
Multi-tiered hierarchical structure	3.33	8
Cowboy bullying	3.29	9
Exploiting fierce competition among subcontractors	3.25	10
Supply chain finance	3.24	11
Undue commercial interest	3.21	12
Low barriers to entry and exit	3.19	13
‘Would not pay’ attitude	3.16	14
Administration inefficiencies	3.09	15
Errors in submitting claims and valuation work	3.05	16
Defective works	3.02	17
Ambiguities within standard forms of contracts	3.01	18
Insufficient documentation and information in carrying out valuation evaluation	2.96	19
Delay in approval of works	2.94	20
Complex payment legislation	2.86	21
Corruption	2.84	22
Lack of transparency	2.76	23

Therefore, the null hypothesis (H1) should be rejected and the alternative hypothesis (H1) accepted; because the RII analyses in tables 5.8.3.1 and 5.8.3.2 show that unfair

payment practices are deliberate acts used by construction companies as a business strategy to enhance their cash flow.

5.8.4 Objective 4- To ascertain whether unfair payment practices influence contractors' business performance.

Objective 4 was set to ascertain whether unfair payment practices influence a contractor's business performance. Questions 14, 15 and 16 sought study participants' perceptions regarding the impact of unfair payments on contractors' business performance.

Table 5.8.4 presents the summary of mean scores, standard deviation and percentage mean scores for questions 14, 15 and 16 in survey 1. Findings in table 5.7.4 show that majority of study participants agreed that unfair payment practices influenced contractors' business performance, as illustrated in figure 5.8.4 below.

Table 5.8.4 Percentage agreement as to whether unfair payment practices influence contractors' business performance

QN	Percentage agreement to which participants' agree or disagree with the following statements:	Mean Score	S.D	Mean score in (%)
14	Unfair payment influences overall contractors' financial performance.	3.72	0.81	74.35
15	Unfair payments significantly influence contractors' profitability	3.39	0.86	67.77
16	Unfair payments are a threat to contractors' business survival.	3.75	0.81	67.77
	Total percentage agreement to SFoC's unfair payment practices in construction industry	**3.62**	**0.83**	**69.96**
	Note: Mean 5.00 = Very Strongly agree,4= Strongly agree,3= Agree, 2= Disagree,1= Strongly disagree, 0 =Very Strongly disagree and – was assigned unsure			

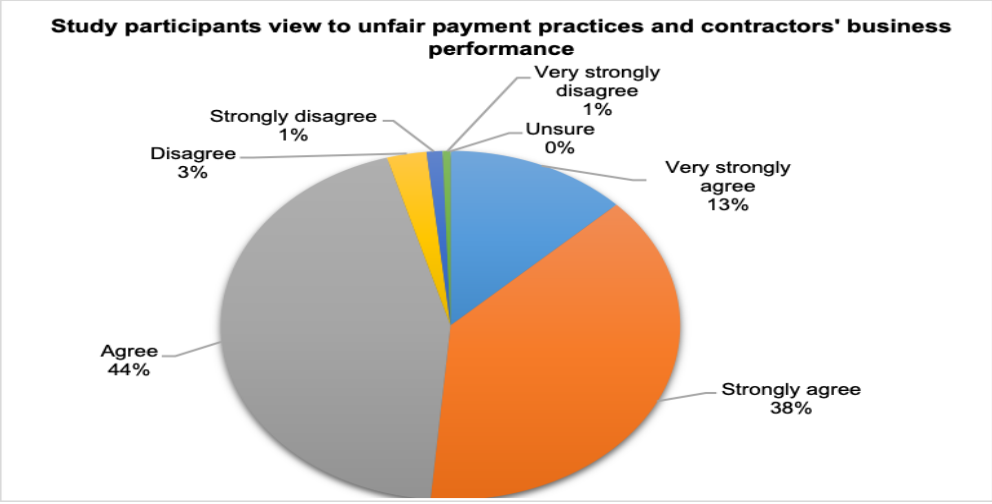


Figure 5.8.4 presents a pictorial chart of the study participants' views in response to objective 4. The chart illustrates that the majority of participants - 95% - agreed that unfair payment practices influenced contractor business performance, whereas 5% of study participants disagreed. There is a need to further corroborate the relationship between unfair payment practices and construction business performance using archival data. Thus, a Pearson's coefficient corelation analysis was used to determine the statistical relationship between these variables, performed in section 5.7.4.1 and chapter 6.

5.8.5 Relationship between Unfair Payment practices and Construction Business Performance

Table 5.8.5 presents a summary of the study participants' agreements and their own construction business performance that completed the questionnaire. Note that out of the 179 study participants that completed survey one; the researcher managed to obtain a complete five years' worth of financial statements for 34 of the study participants' companies.

Key assumption: the study assumed that the study participants completed the questionnaire based on their judgement regarding companies' financial performance; thus connoting that as they completed the questionnaire, they were indirectly scoring their own business performance. Column B to F in table 5.7.4.1 presents data obtained from Companies' House using the Freedom of Information Act. Column B denotes thecontractor's average turnover over 5 years; Column C- contractor's average operatingmargin over 5 years; Column D; - contractor's average ROCE over 5 years; Column E-contractor's average liquidity ratio over 5 years; and Column F- contractor's average debt ratio over 5 years.

The study considered five years' worth of financial statements because most financial statements are based on five years of financial averages. Lucey (2009) argued that five years of average costs and commercial data are significant to make informed financial decisions. Therefore, to determine the statistical relationship, the Pearson correlation analysis (using SPSS 25) was used to conduct the correlation coefficient (r^2) value. A set of r values were obtained for columns A and B; columns A and C; columns A and D; columns A and E; and columns A and F, respectively.

Table 5.8.5 Summary of participants' agreements on unfair payment practices and contractor's business performance over a five-year period

S/No.	Percentage agreement on unfair payment practices by study participants'	Contractor's average turnover over 5 years	Contractor's average operating margin over 5 years	Contractor's average ROCE over 5 years	Contractor's average liquidity ratio over 5 years	Contractor's average debt ratio over 5 years
	A	B	C	D	E	F
Company 1	73.33	11152199000	1.27	30.61	0.70	1.30
Company 2	65.88	34692000000	1.35	22.47	0.93	1.27
Company 3	65.56	10741	5.43	28.72	1.39	1.34
Company 4	51.11	14806	3.32	27.63	1.06	1.20
Company 5	63.33	86309222	3.10	10.97	0.86	10.60
Company 6	68.89	87596	8.75	34.36	0.94	0.98
Company 7	55.56	847554156	1.07	4.59	0.84	0.97
Company 8	72.22	1039446234	1.72	10.32	1.03	0.89
Company 9	56.67	2175796639	2.77	2.77	1.29	1.46
Company 10	46.67	346674103	2.88	14.61	0.49	1.17
Company 11	58.89	12053.7	5.11	39.97	1.03	1.34
Company 12	62.22	7386306	6.48	29.19	1.11	1.08
Company 13	68.24	270424700	13.13	29.10	1.44	0.90
Company 14	51.43	6063016	4.36	24.44	0.69	0.89
Company 15	55.56	8032652	5.98	6.44	1.20	1.46
Company 16	57.65	7056800	2.50	5.46	0.94	1.31
Company 17	60.00	25257200	3.73	12.63	0.86	1.13
Company 18	52.94	4430006000	3.37	8.43	1.34	0.96
Company 19	52.00	4377033844	5.10	21.94	1.12	5.10
Company 20	71.76	5114614180	3.58	24.50	0.96	1.16
Company 21	67.78	3901900000	1.48	12.67	1.11	1.13
Company 22	60.00	2706275000	5.95	8.56	0.67	0.52
Company 23	51.11	3902411900	8.07	28.68	0.62	1.19
Company 24	64.44	2220986558	5.05	19.93	0.91	1.28
Company 25	64.44	3612872000	3.20	26.33	1.26	1.46
Company 26	56.67	2201518000	11.53	9.62	0.59	2.25
Company 27	56.67	2285283000	6.08	11.36	1.02	1.21
Company 28	50.00	2757403000	3.78	4.57	1.13	1.36
Company 29	68.89	2042081384	2.31	17.02	1.14	1.20
Company 30	57.78	2377218070	3.21	22.44	1.16	1.55
Company 31	66.67	4330267000	2.59	25.78	1.02	1.35
Company 32	65.56	2757403000	3.78	25.38	1.09	1.36
Company 33	73.33	2727433000	3.60	15.27	0.86	1.24
Company 34	62.22	1435730000	15.20	49.33	0.86	2.60
Mean	**61**	**3054257681**	**4.73**	**19.59**	**0.99**	**1.65**

Figure 5.8.5(a) presents a scatter diagram showing the statistical relationship of study participants; percentage agreements concerning unfair payment practices and a contractor's average operating profit margin over a five year period. The R^2 value displayed via the scatter diagram produced a (p) = 0.01, n= 34, p<0.05 which shows a weak monotonic relationship between the variables. Moreover, the Pearson correlation coefficient produces a (u = 0.11) denoting a very weak relationship. This implies there is no significant relationship between the percentage agreements of the study participants regarding unfair payments practices and contractor's operating profit margin. Please refer to Table 6.4.5 for an interpretation of the correlation coefficients.

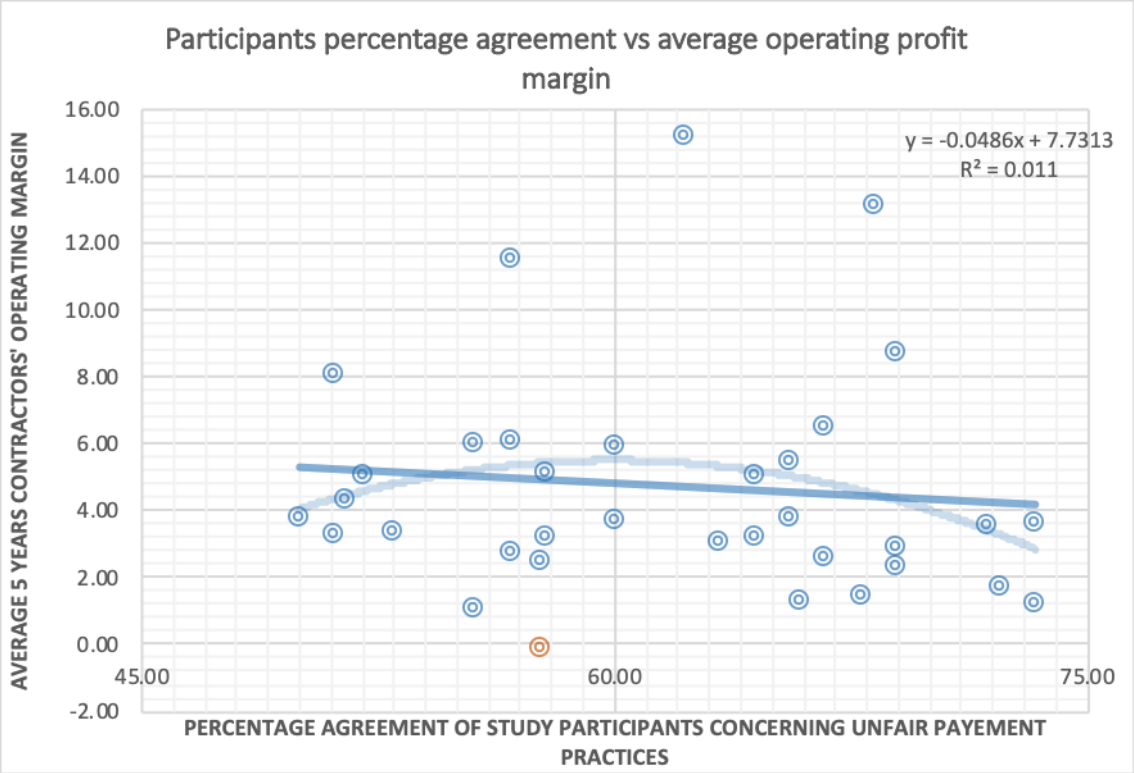


Figure 5.8.5.a: Scatter diagram comparing values of percentage agreements of study participants on unfair payment practices to a company's average profit margin (Column C v. Column B)

Figure 5.8.5 (b) illustrates a scatter diagram showing the statistical relationship of the percentage agreements of study participants concerning unfair payment practices and contractor's average return on capital employed over a five year period. The R^2 value displayed via the scatter diagram produced a (p) = 0.05, n= 34, p<0.05 showing a linear relationship between agreement on unfair payment practices and contractor's capital employed.

Moreover, the Pearson correlation coefficient produces a (u = 0.25) denoting a somewhat weak relationship. This implies there is a somewhat slight relationship between the percentage agreements of study participants regarding unfair payments practices and contractor's return on capital employed.

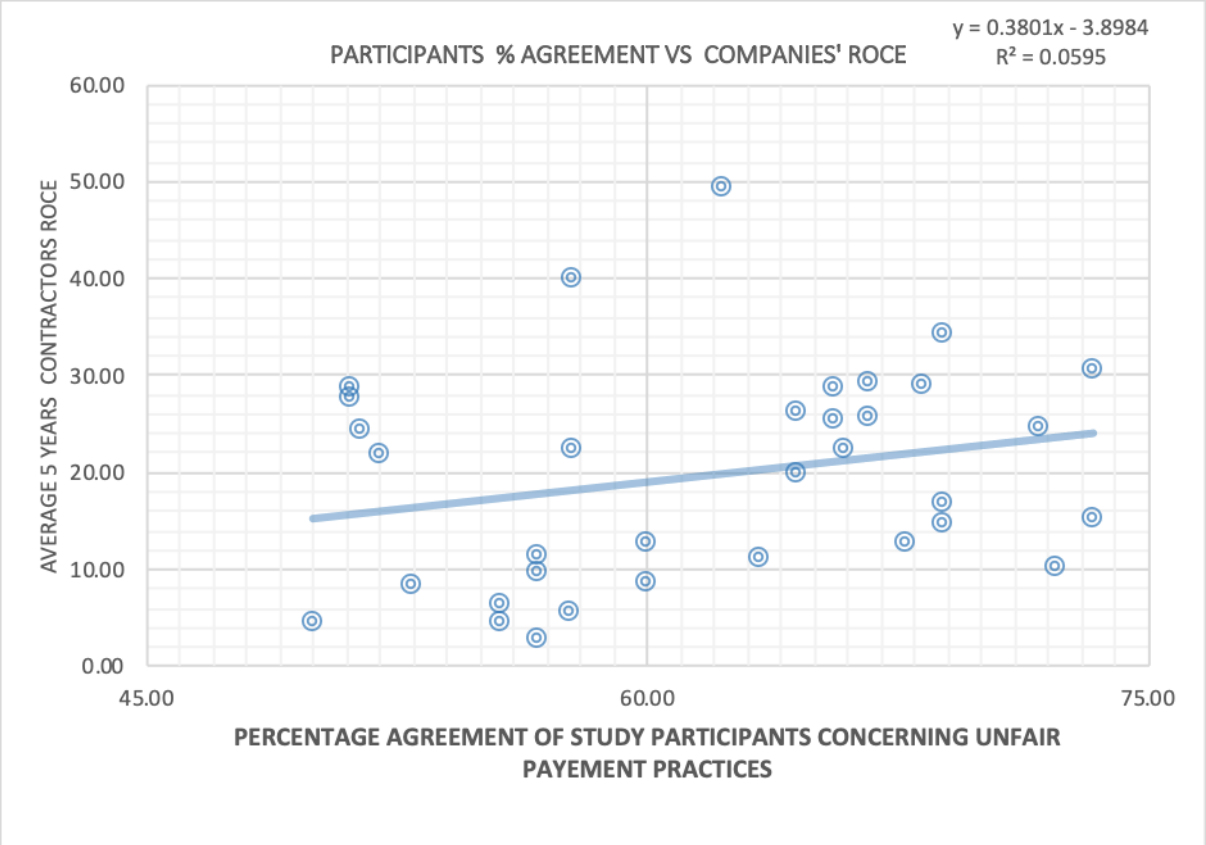


Figure 5.8.5 b: Scatter diagram comparing values of the percentage agreements of study participants on unfair payment practices to contractor's average ROCE (Column D v. Column B)

Figure 5.8.5c illustrates a scatter diagram showing a statistical relationship of study participants' percentage agreements concerning unfair payment practices and a contractor's average liquidity ratio over a five year period. The R^2 value displayed via the scatter diagram produced a (p) = 0.02, n= 34, p<0.05 showing a weak monotonic relationship between agreement on unfair payment practices and contractor's liquidity. Moreover, the Pearson correlation coefficient produces a (u = -0.010) denoting a very weak negative relationship. This implies there is no significant relationship between the percentage agreements of the study participants regarding unfair payments practices and contractor's liquidity ratio.

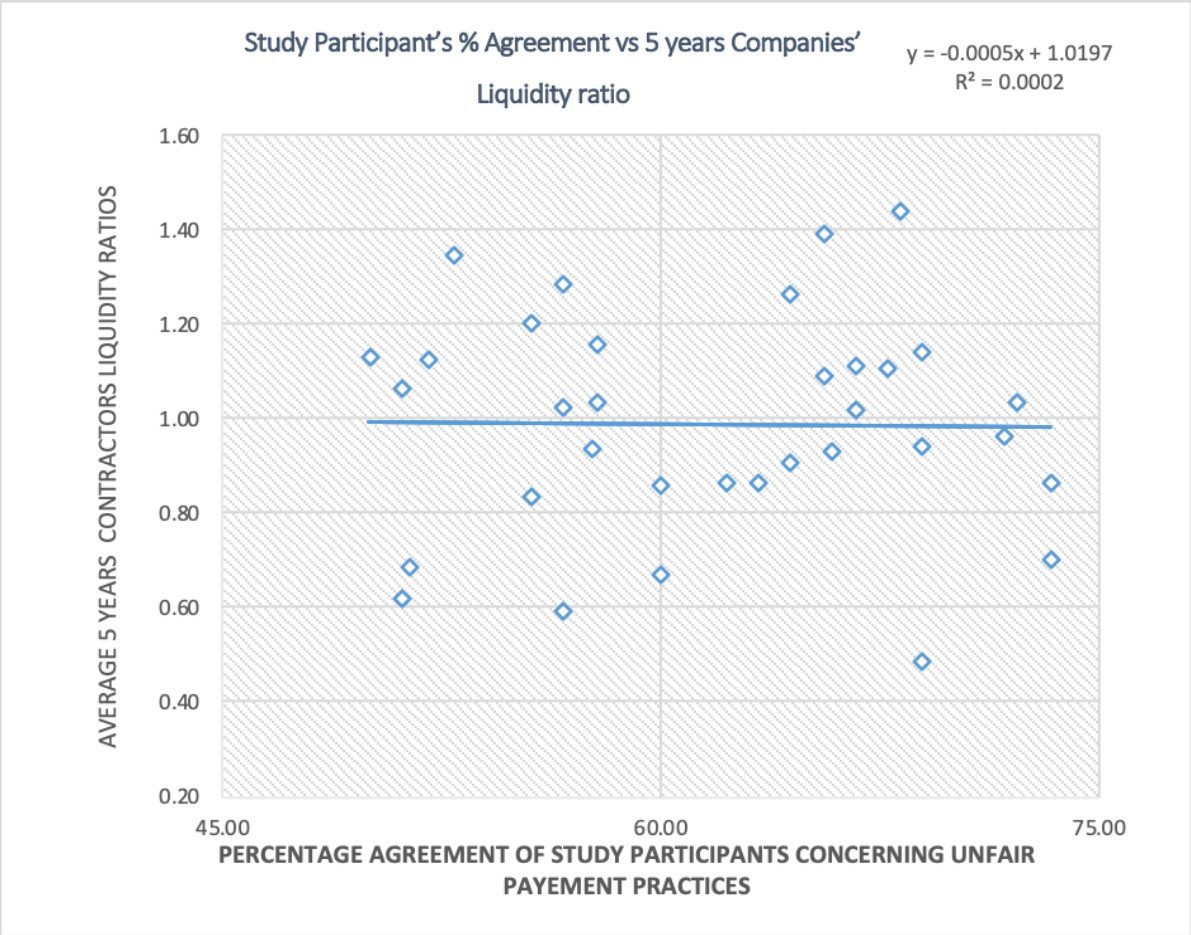


Figure 5.8.5c: Scatter diagram comparing values of the percentage agreements of study participants on unfair payment practices to a contractor's average liquidity ratio (Column E v. Column B)

Furthermore, figure 5.8.5 d illustrates a scatter diagram showing a statistical relationship of study participants' percentage agreements concerning unfair payment practices and a contractor's average debt ratio over a five-year period. The R^2 value displayed via the scatter diagram produced a *(p)* = 0.06, n= 34, p<0.05 denoting a weak relationship between agreement on unfair payment practices and a contractor's debt ratio. Moreover, the Pearson correlation coefficient produces a (u = -0.08) denoting a very weak negative relationship. This implies there is no significant relationship between the percentage agreements of study participants regarding unfair payments practices and contractor's debt ratios.

These findings are similar to Baum's et al. (2007) discovery about American industrial companies; that there was no significant relationship between companies' debt margin and business financial performance.

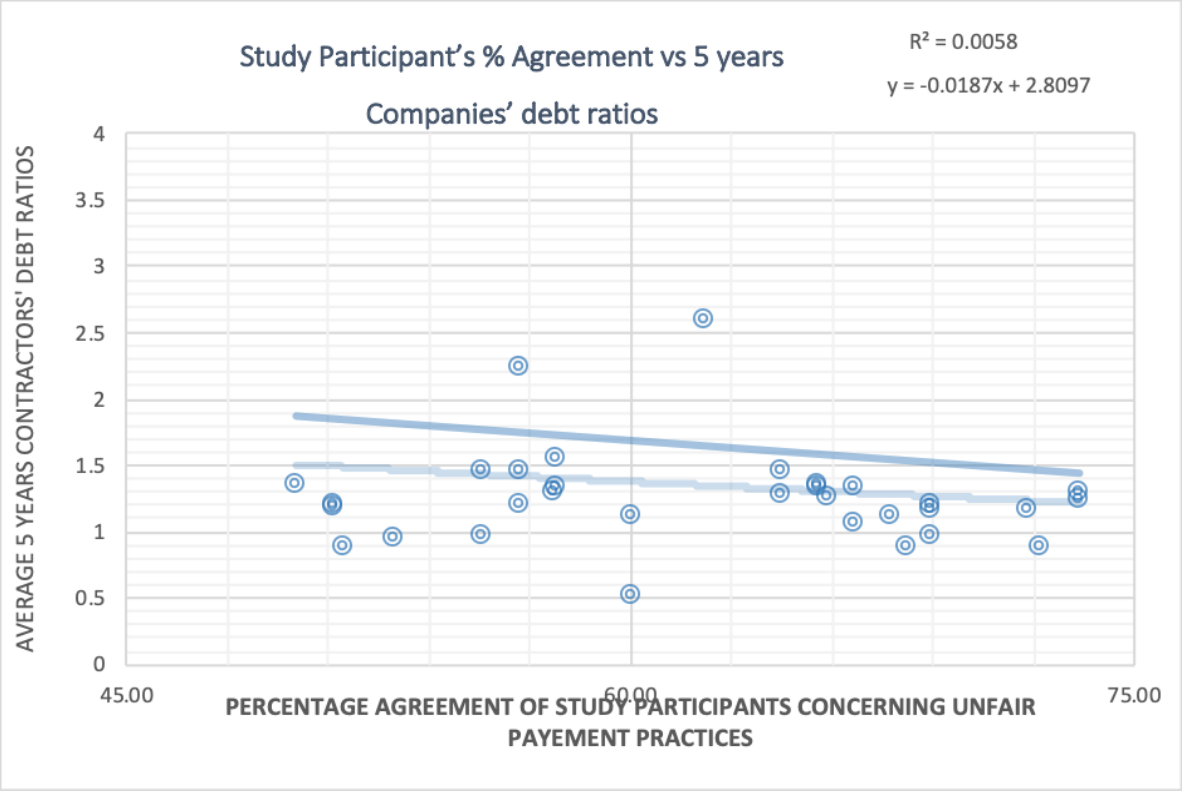


Figure 5.8.5d: Scatter diagram comparing values of the percentage agreements of study participants on unfair payment practices to a contractor's average debt ratio (Column F v. Column B)

The overall findings from the four correlation analyses reveal there is no significant relationship between the percentage agreements of the study participants and contractor's business performance. Therefore, the null hypothesis (H_O) should be rejected, and the alterative hypothesis (H_1) should be accepted.

5.8.6 Objective 5- To evaluate the role of the client-contractor relationship regarding unfair payment practices

Question 10 in survey 2 was asked to enable the researcher to measure the role of the client-contractor relationship regarding unfair payment practices in the UK construction industry. Figure 5.8.6 presents findings regarding this objective. 8% 'very strongly agreed', 53% 'strongly agreed', 22% 'agreed', 6% 'disagreed', 9% 'strongly disagreed', and 2% 'very strongly disagreed'.

The findings in figure 5.8.6(a) reveal that contracting parties' consideration to protect client-contractor relationships contributes to unfair payment practices in the construction industry. For instance, Coopla (2018) argued that before Carillion Plc collapsed in 2018, the company used its client's position to influence and induce longer

payment terms of 120 days on its subcontractors and suppliers. Unfortunately, majority of subbies and supplies affected by longer and unfair payment terms rarely complained because of their desire to protect the client-contractor relationship.

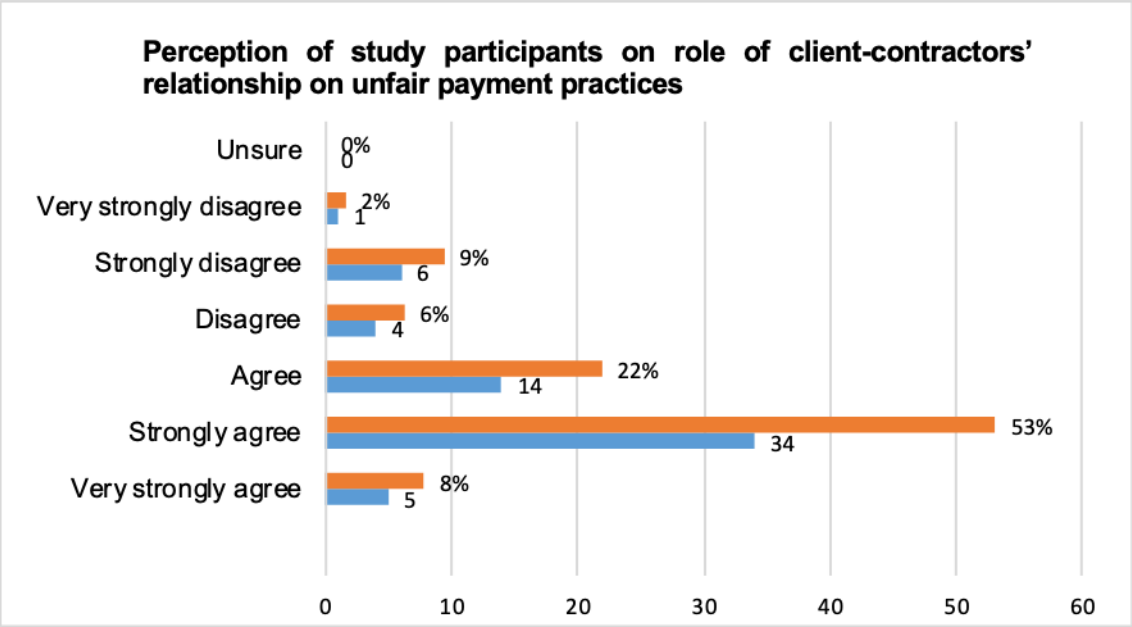


Figure 5.8.6a Role of the client-contractor relationship to unfair payment practices

Furthermore, question 11 in survey 2 asked the study participants to express their perceptions of construction clients' attitudes to unfair payment issues in the construction industry. For easy identification, question 11 in the questionnaire was benchmarked against five of the most common factors acknowledged in the study's literature, including:

1. perceived as normal industry practice
2. contractors agreeing to longer payments terms
3. indifference to unfair payment practices
4. very concerned about contractors' payments
5. perceived as a form of finance

Figure 5.8.6b illustrates that 44% of study participants believe that clients see unfair payment practices as normal industry practice; 23% believe that the problem is not client-related but rather contractors agreeing to longer payment terms; 19% agree that clients use unfair payment practices as a form of finance,

11% believe that clients are simply indifferent to unfair payment practices; while 3 % believe that clients are very concerned about unfair payment practices. Other contributory factors identified by the study participants regarding clients' perceptions of unfair payment practices include the following: "undercapitalised" nature of the construction industry; none of their concern; industry culture; and not considered as project objectives in terms of time, cost and quality.

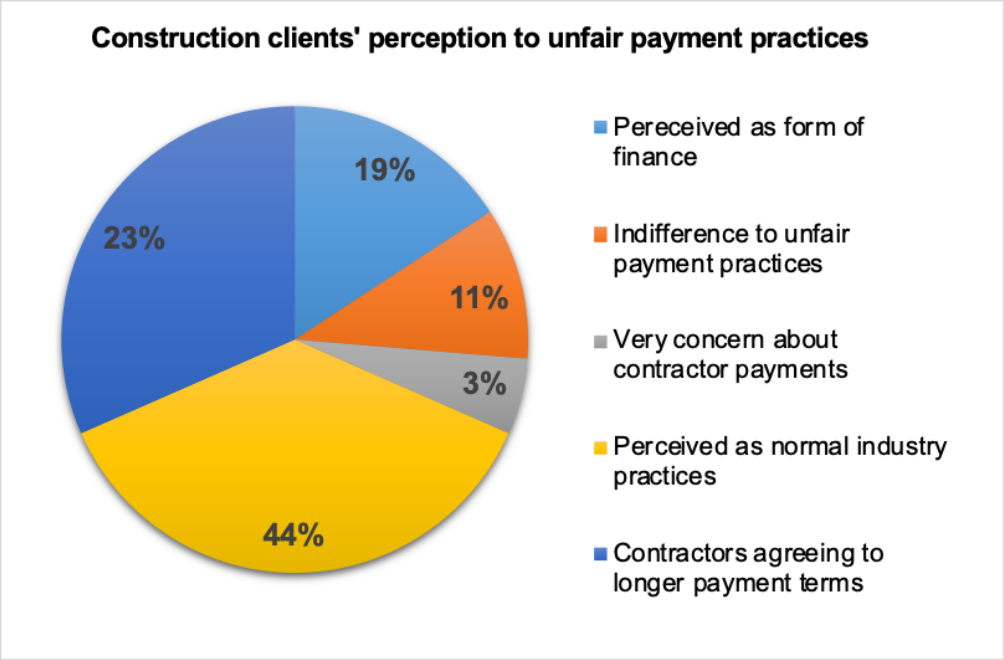


Figure 5.8.6b Clients' perceptions of unfair payment practices

5.8.7 Measurement of Supplementary factors about unfair payment practices

5.8.7.1 Impact of unfair payment practices

Table 5.8.7.1 presents the measured additional impact of unfair payment practices. The table illustrates the mean scores and relative important index (RII) for five predetermined rank factors identified from the study's literature. Question 22 in survey 1 measured participant agreement regarding predetermined effects listed in table 5.8.7.1 using a five-point Likert scale of 5= 'very high effect' to 1= 'very low effect'.

The findings in table 5.8.7.1 show that unfair payment practices create cash flow difficulties for contractors with the highest mean score of 3.81, followed by impact on administration and company management with an average score of 3.68, diminished

organisational reputation with a mean score of 3.43, bullying of construction firms with an average score of 3.33 and increment of credit crunches with a mean score of 3.19.

Usually, when payments are delayed to contractors their cash flows are negatively disrupted by both incoming payments (receipts) and outgoing payments. This is because cash is a strong pedigree (bloodline) that drives most businesses. Any interference to cashflow often results in disastrous outcome for business,particularly for SMEs contractors who largely dependent cash to run their everyday operations and pay suppliers or subcontractors working on a project.

These findings align with Richard and Mori's (2018) study which inferred that unfair payments affected the administration and management of companies due to high costs incurred in chasing payments. Usually, costs incurred by contractors normally relate to financing, additional time and morale hazard problems. For example, BACS payment schemes (2019) confirmed that on average, UK construction businesses spent 130 hours per year chasing late payments, with an approximate cost of £1,500 per business.

Table 5.8.7.1 Effect of unfair payment practices

	Effects	Mean	RII	Rank
1	Creates cash flow difficulties	3.81	0.76	1
2	Affects the administration and management of a company	3.68	0.74	2
3	Diminishes organisational reputation	3.43	0.69	3
4	Results in bullying of construction firms	3.33	0.67	4
5	Increases credit crunches	3.19	0.64	5

5.8.7.2 Disparity in commercial bargaining power due to unfair payment practices

Question 4 in survey 2 was asked to enable the researcher to measure the role of disparities in commercial bargaining power between parties in unfair payment practices. Findings from the study reveal that parties with lower bargaining power, especially subcontractors and suppliers, find it difficult to challenge or influence the

payment terms exerted on them by clients due to the imbalance in commercial bargaining power between the parties.

The study participants identified that organisation hierarchy structure in construction industry basically subjected subcontractors and suppliers to a weaker bargaining position in the supply chain. Hence, clients used their commercial bargaining power to input unfavourable payment terms and practices. Figure 5.7.6.2 shows that majority of study participants (42%) 'strongly agreed', 16% 'very strongly agreed' and 13% 'agreed' that clients used their commercial bargaining powerto input unfavourable payment terms to contractors.

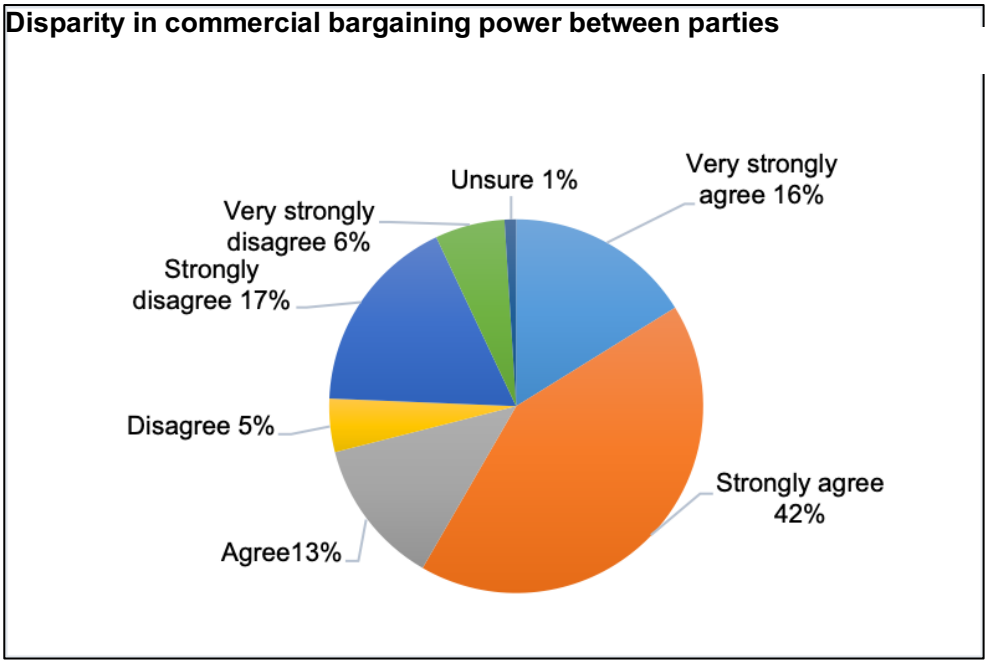


Figure 5.8.7.2 Disparity in commercial bargaining power between parties

5.8.7.3 Potential of emerging technologies in minimising unfair payment practices

Figure 5.8.7.3 presents the study participants' perceptions regarding the use of emerging technologies in minimising unfair payment practices in the UK construction industry. Participants were asked to evaluate the potentiality of emerging technologies to alleviate unfair practices.

The findings reveal that majority of participants were of view that escrow/ project bank accounts, automated payment systems and 5D-BIM have potential to

minimise unfair payments in the construction industry. 10% of study participants ranked escrow /project bank accounts with 'moderate potentiality' followed by automated payment systems with 7 % and 5D-BIM 6 %. On the other hand, the study participants ranked other emerging technologies with 'very low potentiality' to minimise late payments. 83% of study participants scored Smart contracts with 'very low potentiality' followed by Agresso 4 Unit with 79% and Block chain with 75%.

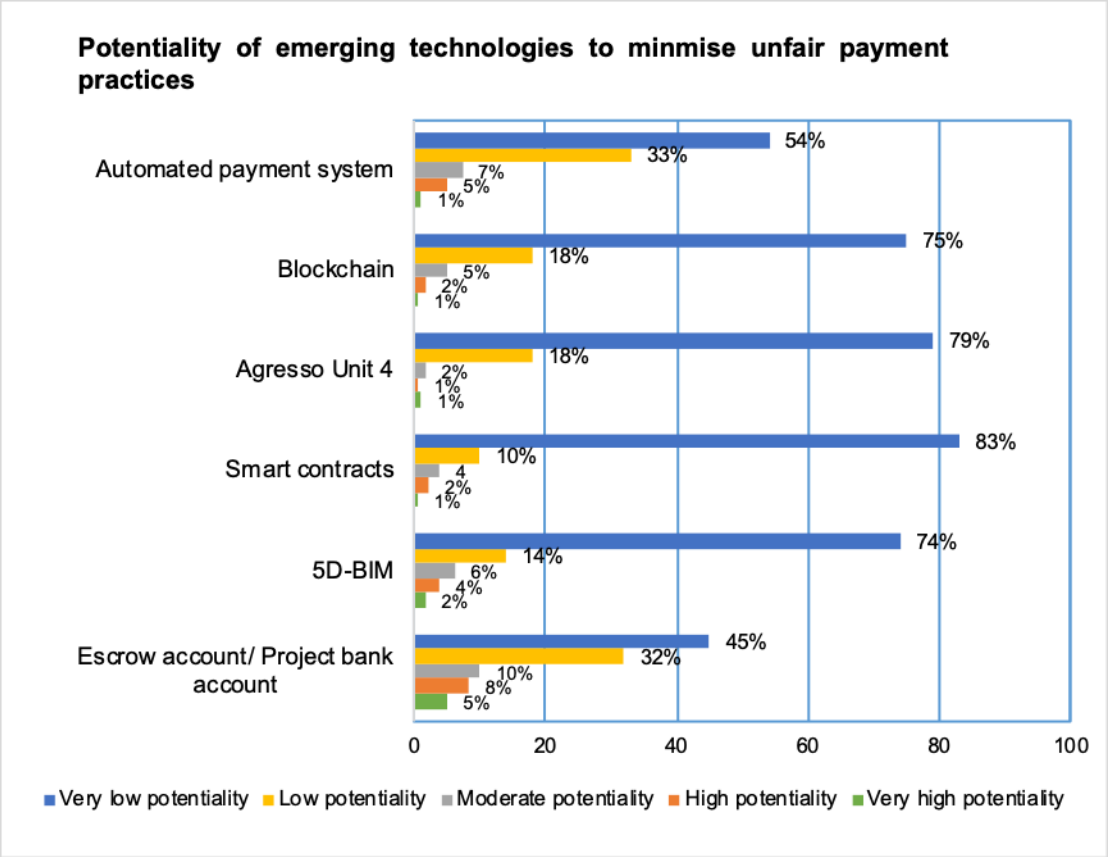


Figure 5.8.7.3 Potentiality of emerging technologies in minimising unfair payment practices

5.9 Results and findings

Findings from this chapter provide meaningful insights into unfair payment practices in the UK construction industry. The profile of the study participants reveals that a significant proportion had more than 5 years' work experience in the UK construction industry, though some participants were not affiliated with professional bodies. The summary of quantitative findings reveals that bespoke contracts (i.e. modified standard forms of contracts) are the most commonly used followed by JCT suite of contracts. Arguably, the former reaffirms the inappropriateness and amendment of

clauses to standard forms of contract. Perhaps, amendments to SFoCs contribute to growing cases of unfair payment practices in the UK construction industry.

In terms of the study's objectives, the findings reveal that three-quarters of the study participants strongly disagreed or disagreed that payment provisions in standard forms of contracts (SFoCs) helped to minimise unfair payment occurrences, as illustrated in figure 5.8.1.

The summary of the findings in this chapter also reveals that unfair payment practices are common features in the construction industry. The study specifically identifies tier 2 clients (principal contractors) as the most notorious late payers with a score of 47%, followed by tier 1 clients (main construction clients) with 35% and tier 3 clients (subcontractors acting as clients to other subcontractors) with 18%.
The study identified that over 35% of unfair payment cases are linked to late payments (34%) followed by unleased retentions to contractors, as illustrated in figure 5.8.2.1

The study confirms that study participants considered longer payment terms with a payment duration ranging from "31 to 50" days and "51 to 90 days" to be standard in the construction industry. The implications of this findings denote that majority of construction contractors' invoices are paid after the agreed 30 days, as stipulated in most contract documents.

Contemporary causes of unfair payment practices identified by the study were categorised into five main groups: cultural, industrial, technical, regulatory and others causes. The findings indicate that the most common contemporary causes of unfair payment practices include the use of late payments to contractors as a cash flow strategy to boost a client's finances, the prevailing culture, the client-contractor relationship, "pay when paid" and "work first get paid later" to be common causes of unfair payment practices. Cash flow strategy was ranked first with the highest score of 3.59 by the study participants.

In addition, a correlation coefficient analysis was conducted to ascertain whether unfair payment practices influenced contractors' business performance. The findings in figure 5.8.5 (a), (b), (c) and (d) affirm a weak monotonic relationship between the

percentage agreements of the study participants and company's average operating profit margin, return of capital employed, liquidity and debt ratios (p =0.01, p =0.06, p= 0.02 and p= 0.06). However, the use of financial ratios to measure business performance is considered to be subjective in understanding the true performance of a business.

5.10 Summary

This chapter presented the study's quantitative analyses. The chapter began with a profile of the study participants, Wilcoxon signed rank, descriptive statistics and host of statisticalanalyses regarding the two sets of questionnaire surveys were conducted by the study. Cronbach's alpha test was conducted to measure the internal reliability of the quantitative data. Subsequently, a wide range of quantitative analyses were conducted and the findings well documented for a proper understanding of the study.The next chapter presents the study's archival analyses.

CHAPTER 6

Archival Data Analysis

6.1 Introduction

This chapter presents the analysis of the study's archival data gathered from different documentary sources. As previously discussed in Chapter four, archival data was considered to be vital to this study because it helps to understand in detail, the true nature of unfair payment issues in the UK construction industry. Moreover, this chapter analyse real time payment performance data in the construction industry and its effect on contractor business performance. The archival analyses are presented in three sections: **Section 1** provides a brief description of the procedure used to collect the archive data; **Section 2** presents the payment performance of different tiers of construction clients in the UK together with their business performance analyses; **Section 3** reviews fifteen case studies of small and medium-sized companies that went into administration or insolvency processes due to unfair payments practices. The companies selected faced financial pressures and cashflow problems that led to their collapse. The analyses and discussions in this chapter are presented in various tables and graphs whilst conclusions are presented in chapter 8.

6.2 Archival data collection for construction clients' payment performance and case studies

Section 4.7.3 in the study's methodology chapter provided a detailed explanation of how archival data was obtained by the researcher. It must be noted that majority of data used for this section were drawn from online reports and surveys published by government sources. The published payment data 2019/2020 from BuildUK (here) was extracted for a better understanding of construction clients' payment performance, while financial statements from Companies House (here) were obtained to measure contractors' business performance. Furthermore, case studies concerning small and medium-sized construction companies were obtained from administrators' reports filed in the Company Check website (here)

Overall, majority of data in this section was drawn from credible UK government sources and can be confirmed and verified.

6.3 Payment performance of different tiers of construction clients and contractors

Table 6.3.1 illustrates the payment performance of Tier 1 clients that pay for high value construction deliverables. Findings from the data indicate that majority of private Tier 1 clients seem to be prompt payers within agreed contractual terms, except for Rolls Royce (71 days), Peabody (53 days), Lidli (48 days), the National Grid and Aldi(40 days).

Moreover, looking at the average percentage of invoices that are not paid within the agreed terms, Peabody had the highest percentage of invoices at 48%, followed by SHE Transmission at 37%, Great Portland Estates at 35%, St Modwen at 34%; The National Grid at 17%, British Land at 14% and Centrica at 1%. As to the percentage ofinvoices paid within 60 days, 89% of Tier 1 clients seemed to be settling their invoiceswithin 60 days of the date of invoice receipt to the date the contractor received payment. This clearly illustrates a pattern of poor behaviour, as none of the companieshad exceptions to 30 days' standard payment terms.

Table 6.3.1 Payment Performance for Tier 1 Main (private) construction clients to contractors (adapted from Build UK 2019/2020*)*

No.	Date when data was collected	Company Name	Percentage (%) of invoices not paid within agreed terms	Numbers of days taken to pay invoices	Percentage (%) of invoices paid within 60 days
1	25/10/2019	Great Portland Estates	35	31	91
2	01/04/2020	Landsec	5	17	96
3	29/07/2019	Heathrow	7	22	99
4	30/04/2020	British Land	14	17	97
5	30/04/2020	Berkeley Homes	10	25	94
6	01/03/2019	Centrica	1	17	92
7	30/04/2020	Euro Garages	1	24	100
8	30/04/2020	Places For People	6	24	95
9	30/04/2020	Lidli	6	48	84
10	30/04/2020	Aldi	6	40	97
11	30/04/2020	Rolls-Royce	8	71	24
12	30/04/2020	Valero Energy	9	22	99
13	30/04/2020	IM Properties	11	18	97
14	30/04/2020	National Grid	17	40	97
15	30/04/2020	St Modwen	34	32	95
16	30/04/2020	SHE Transmission	37	29	95
17	30/04/2020	Peabody	48	53	72
		Average	16	21	90

Furthermore, Table 6.3.2 illustrates payment performance of public Tier 1 clients that engage and procure high value works using main contractors in the UK. Findings from Table 6.3.2 reveal that majority of public Tier 1 clients pay their invoices within 30 days, with an average of 96% of invoices settled in 30 days and 85% of invoices issued within 5 days from the date of receipt of invoice. This implies that most government clients and sectors are good in making prompt payments, as agreed in their contracts.

However, it could be argued there have been many headlines and misconceptions about public clients paying beyond the agreed terms and challenging their supply chain payment terms. For instance, the National Federation of Builders (NFB) have consistently reported that public clients, including central government, do not pay on time and that many of its members do not challenge their terms

Table 6.3.2 Payment performance: Tier 1 public clients acting as Main Construction Clients to contractors (adapted from Build UK 2019/2020)

No.	Date when data was collected	Client Name	Percentage (%) of Invoices Paid within 30 Days	Percentage (%) of Invoices Paid within 5 Days
1	31/03/2020	Cabinet Office	97	88
2	31/03/2020	Department for Business, Energy & Industrial Strategy (BEIS)	99	94
3	31/03/2020	Department for Digital, Culture, Media & Sport (DCMS)	98	86
4	31/03/2019	Department for Education (DfE)**	91	66
5	31/03/2020	Department for Environment Food & Rural Affairs (DEFRA)	93	85
6	31/03/2020	Department for International Development (DfID)	98	89
7	31/03/2020	Department for Transport (DfT)	99	95
8	31/12/2019	Department of Health & Social Care (DHSC)	94	49
9	30/09/2019	Department of Work and Pensions (DWP)	96	97
10	30/09/2019	Foreign & Commonwealth Office (FCO)	100	98
11	31/03/2020	HM Revenue and Customs (HMRC)	99	94
12	31/03/2020	HM Treasury (HMT)	96	80
13	31/03/2020	Home Office	98	93
14	31/03/2020	Ministry for Homes Communities and Local Government (MHCLG)*	99	87
15	31/03/2020	Ministry of Defence (MoD)	100	92
16	31/03/2020	Ministry of Justice (MoJ)	97	87
17	05/01/2019	Birmingham City Council	92	83
18	25/02/2019	Highway England	88	65
19	15/01/2019	Sheffield Council	91	92
		Average	**96**	**85**

On the other hand, payment performance data between Tier 2 clients (main client) to their subcontractors and suppliers extracted from Build UK show that most Tier 2 clients do not pay their invoices within the contractual agreed date. Moreover, 90% of Tier 2 clients settle their invoices within 60 days. The payment performance data of 26 of the biggest construction contractors reveals that Multiplex had the longest payment dates of 55 days on average, followed by Seddon (51days), Engine (50 days); Taylor Wimpey (48 days), BAM Nutall (47 days) and Visitry Partnerships (44 days). Furthermore, the same companies accounted for the highest proportion of invoices not paid within the agreed terms, ranging from 62% to 17%.

Conversely the best payment performance contractors were IIKE Homes with 20 days of payment terms on average, followed by Vinci at 26 days, Morgan Sindall and Redrow Homes at 27 days and Mace at 28 days. Further findings from table 6.3.3 reveal the average proportion of invoices paid within 60 days and the average proportion of invoices not paid within the agreed terms stand at 90% and 25%, respectively. Only Engie had 1% of invoices paid after 30 days' terms. Overall, these statistics show that Tier 2 clients have longer payment terms of 46 days on average.

Table 6.3.3 Payment Performance: Tier 2 Clients (Main Contractors) to subcontractors (adapted from Build UK 2019/2020)

No.	Date when data was collected	Company Name	Numbers of days taken to pay invoices	Percentage (%) of invoices not paid within agree terms	Percentage (%) of invoice paid within 60 days
1	30/11/2019	Interserve	32	38	94
2	24/02/2020	Murphy Group	37	23	86
3	27/11/2019	John Sisk & Son	32	17	94
4	10/02/2019	Wates	32	17	97
5	10/02/2020	Balfour Beatty	41	31	89
6	26/07/2019	BAM Construct	38	37	92
7	17/02/2020	ISG	34	23	84
8	30/07/2019	Kier	37	37	80
9	26/10/2019	Multiplex	55	47	75
10	31/11/2019	Amey	29	51	95
11	26/07/2019	Mace	28	26	94
12	15/02/2020	Osborne	29	29	95
13	25/01/2020	Vinci	26	13	94
14	26/02/2020	Bouygues	41	27	92
15	27/11/2019	Sir Robert McAlpine	31	21	91
16	26/11/2019	Galliford Try	42	19	89
17	27/07/2019	Morgan Sindall	27	12	98
18	26/07/2019	Vokler Wessels	33	24	94
19	26/07/2019	Ilke Homes	20	55	98
20	19/03/2020	Skanska	38	8	92
21	24/11/2019	Canary Wharf Contractors	37	20	89
22	20/01/2020	Willmott Dixon	31	12	99
23	10/02/2020	Seddon	51	18	90
24	25/10/2019	Laing O'Rourke	31	22	90
25	25/10/2020	Mclaren Construction	42	62	89
26	04/01/2020	Engie	50	1	92
27	04/01/2020	Morrison Utility Services	33	6	94
28	10/02/2020	Winvic Construction	37	15	97
29	10/02/2020	Wilson James	33	16	96
30	10/02/2020	Lendlease	33	16	96
31	10/02/2020	Bowmer and Kirkland	37	27	95
32	10/02/2020	Graham Construction	42	31	83
33	10/02/2020	BAM Nutall	47	32	88
34	10/02/2020	Costain	38	32	90
35	10/02/2020	Roberston Construction	34	33	93
36	10/02/2020	Bloor Homes	37	3	91
37	10/02/2020	Cala	37	10	88
38	10/02/2020	Redrow Homes	27	12	93
39	10/02/2020	Vistry Partnerships	44	17	87
40	10/02/2020	Barrat Developments	26	19	98
41	10/02/2020	Persimmon Homes	31	19	93
42	10/02/2020	Crest Nicholoson	37	24	90
43	10/02/2020	Miller Homes	43	30	85
44	10/02/2020	Taylor Wimpey	48	32	86
45	10/02/2020	Bellway Homes	34	48	92
		Average	**46**	**25**	**90**

Furthermore, table 6.3.4 illustrates the payment performance of Tier 3 clients, as subcontractors who often sublet part of their building works to other sub-subcontractors and suppliers in the construction industry.

Findings from Table 6.3.4 reveal that Tier 3 clients were the worst payers among the three tiers of construction clients, with Cape Industrial Services taking the lead with 101 days to pay on average, followed by Brown and Mason (84 days), Spie (75 days), T Clarke (70 days); Wood Industrial Services (69 days), Brand Energy &

Infrastructure (68 days) and T.E Scudder (54 days). The quickest payer was SSE Contracting with the shortest payment terms of 16 days on average, followed by Overbury (21 days), Stanmore (23 days) and Portview (29 days). However, comparing the findings of Table 6.3.4 to 6.3.3 and 6.3.1, Tier 3 clients had the lowest proportion (74%) of invoices paid within 60 days and 26% were not paid within the agreed terms.

Table 6.3.4 Payment Performance: Tier 3 Clients (Subcontractors) to sub-subcontractors and suppliers (adapted from Build UK 2019/2020)

No.	Date when data was collected	Company Name	Numbers of days taken to pay invoices	Percentage (%) of invoices not paid within agree terms	Percentage (%) of invoice paid within 60 days
1	10/04/2020	Expanded Structure	37	17	77
2	10/04/2020	Carey Group	37	50	74
3	10/04/2020	Tamdown	59	17	57
4	10/04/2020	AJ Morrisoe and Sons	33	5	95
5	10/04/2020	Byrne Brothers	46	4	87
6	10/04/2020	Getjar	45	6	90
7	10/04/2020	Brown and Mason	84	47	32
8	29/06/2019	McGee Group	46	12	76
9	30/11/2019	Erith	48	11	79
10	30/11/2019	Keltbray	55	15	57
11	28/01/2019	Keller	46	57	85
12	30/11/2019	Cementation Skanska	52	10	90
13	10/04/2020	William Hare	36	16	79
14	30/10/2019	Severfield	42	16	95
15	10/04/2020	Billington	50	11	75
16	28/10/2019	T.E. Scrudder	62	65	59
17	10/04/2020	CJ O'Shea	44	8	84
18	10/04/2020	Van Elle	72	48	25
19	10/04/2020	Roger Bullivant	54	17	60
20	10/04/2020	Imtech	60	27	40
21	10/04/2020	NG Bailey	50	60	71
22	10/04/2020	SSE Contracting	16	48	100
23	29/07/2019	Spie	75	49	74
24	10/04/2020	J. Reddington	27	6	84
25	10/04/2020	BW Interiors	29	40	60
26	10/04/2020	Bachy Soletanche	45	49	83
27	10/04/2020	Parkeray Interiors	33	0	100
28	10/04/2020	Overbury	21	10	96
29	10/04/2020	Portview	29	10	97
30	10/04/2020	Stanmore	23	10	100
31	10/04/2020	Willmott Dixon Interiors	30	17	97
32	10/04/2020	ISG Fit Out	32	20	94
33	10/04/2020	Skanska Rashleigh Weatherfoil	55	11	88
34	10/04/2020	Crown House Technologies	33	21	84
35	10/04/2020	T Clarke	70	30	34
36	10/04/2020	SES	37	68	86
37	10/04/2020	Prater	54	8	62
38	10/04/2020	Novus Property Solutions	33	9	94
39	10/04/2020	Cape Industrial Services	101	38	46
40	10/04/2020	Enigma Industrial Services Ltd	58	42	46
41	10/04/2020	Wood Industrial Services	69	66	31
42	10/04/2020	Brand Energy & Infrastructure	68	42	80
		Average	**50**	**26**	**74**

6.4 Contractors' business performance using Archival data

Data obtained in Table 6.3.3 and 6.3.4 were used to conduct further analyses regarding companies' business performance. Four financial ratios, namely operating profit margin (OPM), return of capital employed (ROCE), current ratio (CR) and debt ratio (DR) were considered for measuring contractor's business performance.

Operating profit margin is the percentage of operating profit to the cost of sales or revenue (Atrill and McLaney 2008); and is usually expressed as follows:

$$\text{Operating profit margin} = \frac{\text{Operating profit x 100}}{\text{Cost of sales/revenue}}$$

OPM measures the ability of a business to derive profits from its cost of sales or revenues, for instance overheads, office rents, salaries, bonuses, production costs and others. The rule of thumb is that if business 'cost of sales' increases, the OPM decreases as the business is spending too much on its operations. Return of capital employed (ROCE) measures a firm's performance by dividing operating profit by capital employed. Atrill and McLaney (2008) argued that ROCE is the most fundamental measure of business performance as it describes a business's ability to generate returns from its capital. ROCE is usually expressed as follows:

$$\text{Return on capital employed (ROCE)} = \frac{\text{Operating Profit x 100}}{\text{Capital employed}}$$

Current ratio analysis measures a business's liquidity as the ability to pay its short-term obligations. The higher the CR (over 1.0), the more liquid the business is at paying its debts on time. The current ratio is calculated as follows:

$$\text{Current ratio} = \frac{\text{Current assets}}{\text{Current liabilities}}$$

The debt ratio indicates a business's long-term debt paying ability (Quesada 2019). A lower ratio not exceeding 0.5 indicates that it is less likely that business debts are high compared to assets; and greater than 0.5 shows that most of the business assets are financed by debts. In other words, the business is at risk of going into insolvency or bankruptcy. Debt ratio is calculated as follows:

$$\text{Debt ratio} = \frac{\text{Total liabilities}}{\text{Total assets}}$$

6.4.1 Operating Profit Margin of a Contractor's Business (Tier 3 And 4 Clients')

Table 6.4.1 presents a summary of four financial ratios used to conduct analyses for contractors' business performance over a five year period. The companies from the listed table 6.3.4 were merged with a total of 40 small and medium-sized construction companies. Then financial statements were extracted by the researcher from Companies House, whereby a five years' average of financial statements were considered for measuring business performance. Lucey (2009) argued that five years' average costs and commercial data was significant to make informed financial decisions.

Columns C to F in Table 6.4.1 present data obtained from Companies' House website, whereby Colum C denotes contractor's average operating margin over 5 years; Column D, contractor's average ROCE over 5 years; Column E, contractor's average liquidity ratio over 5 years and Column F, contractor's average debt ratio over 5 years. Colum A presents the average time frame for honouring invoices by companies extracted from Table 6.3.4. and Column B shows the difference between average time frame for honouring invoices and standard payment term of 30 days. A full analysis of each business's turnover, operating profit, shareholder funds (equity), current liabilities current assets, total assets and total liabilities is attached in appendix I.

Overall, the mean score in column C of table 6.4.1 seems to reflect precarious high profit margins for smaller and medium sized businesses. The FTI consulting report (2018) argued that 'though margins are significantly low in UK construction; the average turnover profitability for a smaller business is higher compared to bigger companies as it staggers from 1.5% to 8%". A possible explanation for this higher margin is perhaps due to the size of these companies, their lower risk profiles, diversification of clients, higher valued assets and lower operating and administrative costs that are common for smaller businesses.

Table 6.4.1: Summary of time frame for honouring invoices and average construction contractors' business performance over a five-year period

S/No.	Average time frame for honouring invoices	Difference between average time frame for honouring invoices and industry standard payment terms (30 days)	Average 5 years' operating profit margin ratio	Average 5 years' return of capital employed (ROCE)	Average 5 years' Liquidity ratio	Average value 5 years' Debt ratio
	A	B	C	D	E	F
Company 1	50	20	2.96	18.54	0.78	0.64
Company 2	66	36	5.31	28.08	0.87	0.60
Company 3	52	22	5.85	6.44	0.99	0.71
Company 4	44	14	2.85	10.40	1.08	0.78
Company 5	54	24	7.06	28.04	0.86	0.75
Company 6	45	15	3.73	18.95	0.81	0.78
Company 7	42	12	3.62	16.30	0.92	0.68
Company 8	42	12	9.18	8.95	1.12	0.54
Company 9	43	13	1.59	6.37	0.78	0.57
Company 10	39	9	5.69	9.57	0.97	1.46
Company 11	45	15	4.36	33.00	0.98	0.64
Company 12	47	17	4.23	29.28	0.81	1.32
Company 13	52	22	4.35	10.36	0.93	1.20
Company 14	40	10	2.40	8.22	0.79	0.59
Company 15	35	5	3.59	16.15	0.81	0.51
Company 16	47	17	3.33	2.88	0.91	0.81
Company 17	44	14	2.96	11.22	0.97	1.13
Company 18	35	5	16.52	16.16	1.10	1.36
Company 19	32	2	2.66	12.26	0.53	0.66
Company 20	41	11	8.10	14.81	0.85	0.67
Company 21	34	4	4.23	23.46	0.03	0.33
Company 22	33	3	8.27	33.44	0.58	0.49
Company 23	44	14	1.11	15.47	0.58	0.67
Company 24	59	29	2.45	35.82	0.43	0.84
Company 25	61	31	1.92	22.46	0.99	0.87
Company 26	36	6	7.64	32.64	0.43	0.66
Company 27	62	32	5.77	25.25	0.91	0.34
Company 28	36	6	20.86	29.18	0.92	0.91
Company 29	55	25	7.97	16.41	0.91	0.91
Company 30	45	15	6.17	41.11	0.78	0.35
Company 31	86	56	2.66	5.41	0.53	0.66
Company 32	47	17	2.26	18.06	0.89	0.79
Company 33	39	9	6.64	14.59	0.97	0.35
Company 34	43	13	4.24	13.98	0.77	0.61
Company 35	33	3	4.12	5.79	0.53	0.20
Company 36	43	13	4.86	4.50	0.98	0.55
Company 37	51	21	10.62	19.17	0.18	0.50
Company 38	46	16	7.19	18.71	0.16	0.90
Company 39	101	71	1.24	36.03	0.31	0.31
Company 40	50	20	4.84	9.76	0.70	0.66
Mean	**47.18**	**17.18**	**5.71**	**18.18**	**0.68**	**0.71**

6.4.2 Return on capital employed for a contractor's business (Tier 3 and 4 clients)

Return on capital employed was used in this study as a fundamental measure of business performance. ROCE measures a business's overall efficiency and profitability generated from capital employed. Singh and Yadava (2013) claimed that the use of ROCE is a stringent tool and measure for shareholders and investors to assess whether a business generates sufficient revenues and profits using its capital investments.

Column D in Table 6.4.1 shows a summary of average ROCE extracted from appendix I; whereby operating profit margin was compared to shareholder funds (equity) over a five year period. Overall, values from top to bottom (in column D) depict an uneven distribution of ROCE in small and medium-sized businesses. Moreover, a mean ratio of 18.18 indicates a high ROCE for businesses that seemed to be good or feasible in utilising shareholder funds and investments to generate profits.

However, it is pertinent to note that due to the undercapitalised nature of construction, ROCE is mostly reliant on large businesses to sustain their capital investments through heavy borrowings, use of trade credits and longer payment terms imposedon their contactors.

6.4.3 Liquidity ratio of a contractor's business (Tier 3 and 4 clients)

Column E in Table 6.4.1 shows a summary of a contractor's liquidity ratio measured against business's short-term liabilities to its assets. The liquidity or current ratio is a sole criterion for a business's survival and its ability to sell or exchange cash at short notice (Brealey et al. 2010). In other words, the liquidity ratio is used to measure a business's ability to meet its short-term financial obligations.

The mean score of 0.68 in column E of table 6.4.1 reflects the average liquidity ratio for construction contractors that is significantly lower when compared to other industries. Moreover, in the construction industry, a liquidity ratio less than 0.9 signifies that business is not financially buoyant. Possible explanations for such lower

liquidity include insufficient working capital, fluctuating demand, poor credit, cashflow issues and late payments that impair contractor's financial performance.

6.4.4 Debt ratio for a contractor's business (Tier 3 and 4 clients)

Column F in Table 6.4.1 presents a summary of contractor's debt or asset ratio over five year period. The debt ratio measures the amount of debt compared to a business's total assets acquired. A mean score of 0.71 in column F of table 6.4.1 indicates that the average debt ratio for a smaller business is high and thus it is riskier for them to survive, as 71% of companies' assets are financed by debts. A debt ratio greater than 0.50 indicates a higher risk of insolvency, because the total amount of liabilities exceeds a company's' assets. Arguably, a higher debt ratio is synonymous with small and medium-sized contractors, as the majority have less fixed assets and volatile cashflows that result in a higher insolvency risk.

A key deduction from these ratio analyses is that small and medium-sized construction businesses appear to have little or no cash inflow perhaps when required to carry out their business performance, as most are constrained by larger contractors and by longer and more unfair payment terms. Small and medium-sized construction businesses are deemed to be undercapitalised and their reliance on payment for work done puts this category of business at a greater risk of debts and insolvency.

It must be noted that the financial business performance of companies used in these analyses were only for the small and medium-sized companies obtained by the researcher. Data for sole traders or 'man and van' businesses could not be obtained from Companies House due to insufficient transactions and turnover.

Column A of Table 6.4.1 illustrates the average time frame for honouring invoices for contractors' businesses, while column B represents the difference between the average time for honouring invoices and the industry's standard terms of 30 days. The mean score of 46 days illustrates a poor payment performance for contractors in settling their invoices beyond contractually agreed terms. Conversely, considering the construction industry norm, this may be seen as a reasonable time for contractors and suppliers to receive payments. The data reveals that some companies take much longer than 100 days to honour invoices, as illustrated in column A. The average

the majority of contractors take longer than two weeks to settle invoices from the agreed date, which is common practice in the industry.

6.4.5 Statistical analysis for the time frame in honouring invoices andconstruction business performance

The data from Table 6.4.1 was subjected to SPSS and used scatter diagrams (see figure 6.4.5a, b, c and d) to determine the linearity and distribution of the paired data. Moreover, a set of r values were obtained for column A and B; column A and C; column A and D; column A and E; and column A and F, respectively.

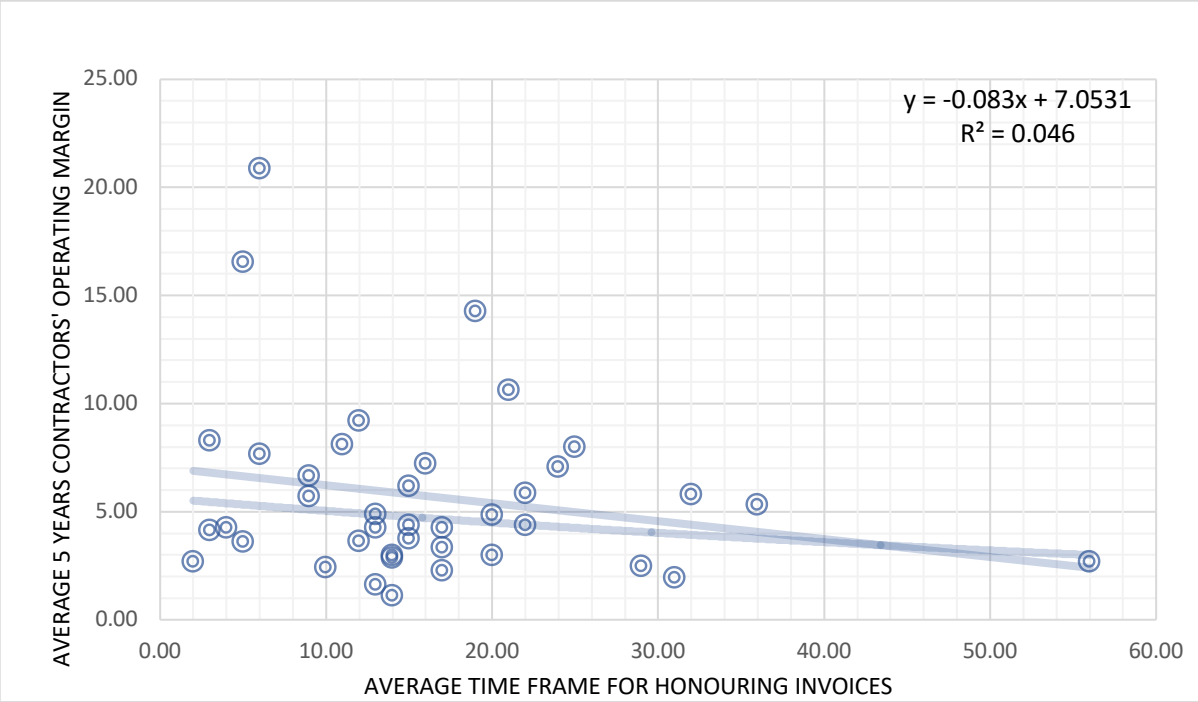


Figure 6.4.5a: Scatter diagram showing the relationship between delayed time frame in honoring contractors' invoices Vs. a business's average operating profit margin (Column B v. Column C)

Figure 6.4.5a illustrates a scatter diagram showing the statistical relationship between a delayed time frame for honoring contractors' invoices and average business operating profit margin over a five-year period. The R^2 value displayed via the scatter diagram produced a (p) = 0.04, n= 40, $p<0.05$ which shows a weak monotonic relationship between the variables.

Moreover, the Pearson correlation coefficient produces a (u = 0.21) denoting a somewhat weak relationship. This implies there is a slight and somewhat weak relationship between a delayed time frame for honoring invoices and the contractor's operating profit margin. Please refer to Table 6.4.5 for an interpretation of the correlation coefficients.

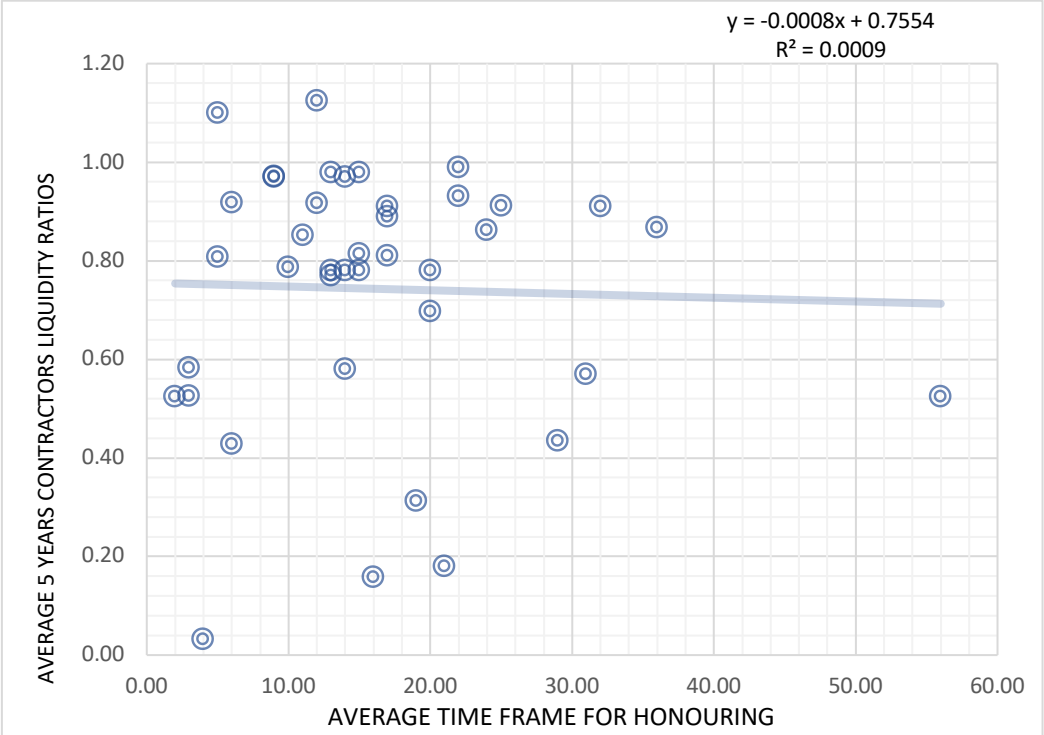


Figure6.4.5b: Scatter diagram showing the relationship between delayed time frame in honoring invoices and a business's average capital employed (Column B v. Column D)

Figure 6.4.5(b) illustrates a scatter diagram showing the statistical relationship between delayed time frame for honoring invoices and contractor's average return on capital employed over a five year period. The R^2 value displayed via the scatter diagram produced a (p) = 0.09, n= 40, p<0.05 showing a linear relationship between delayed time frame for honoring invoices and contractor's capital employed. Moreover, the Pearson correlation coefficient produces a (u = 0.16) denoting a very weak relationship. This implies there is no significant relation between additional days for receiving payments and contractor's return on capital employed.

Similarly, Figure 6.45c illustrates a scatter diagram showing the statistical relationship between additional days for contractors honoring invoices and a contractor's average liquidity ratio over a five year period. The R^2 value displayed via the scatter diagram produced a (p) = 0.09, n= 40, p<0.05 showing a weak monotonic relationship between agreement on unfair payment practices and a contractor's liquidity. Moreover, the Pearson correlation coefficient produces (u = -0.03) denoting a weak negative relationship. This implies there is no significant relationship between delayed payments and contractor's liquidity ratios.

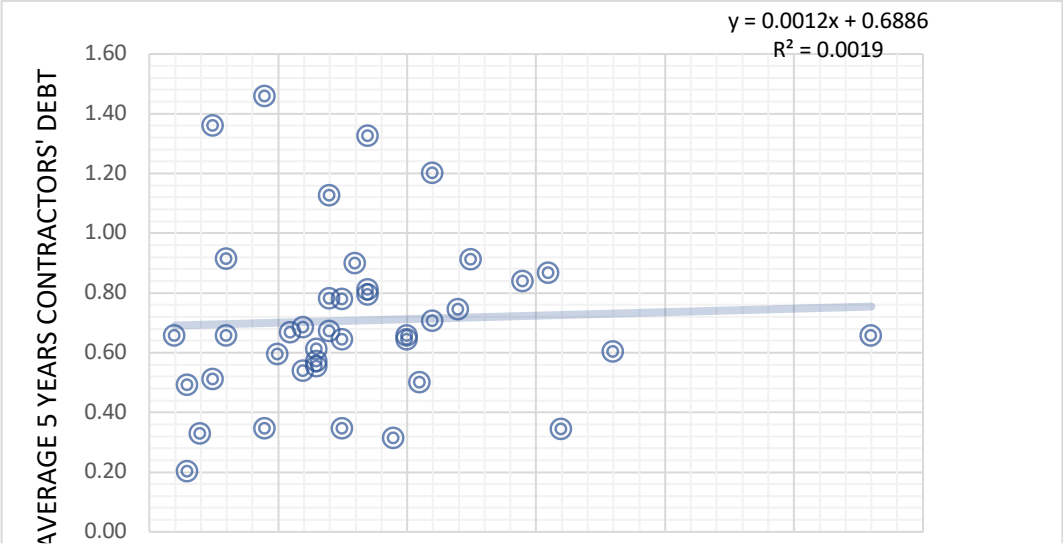


Figure 6.4.5c: Scatter diagram showing relationship between a delayed time frame in honoring invoices and a business's average liqudity ratio (Column B v. Column E)

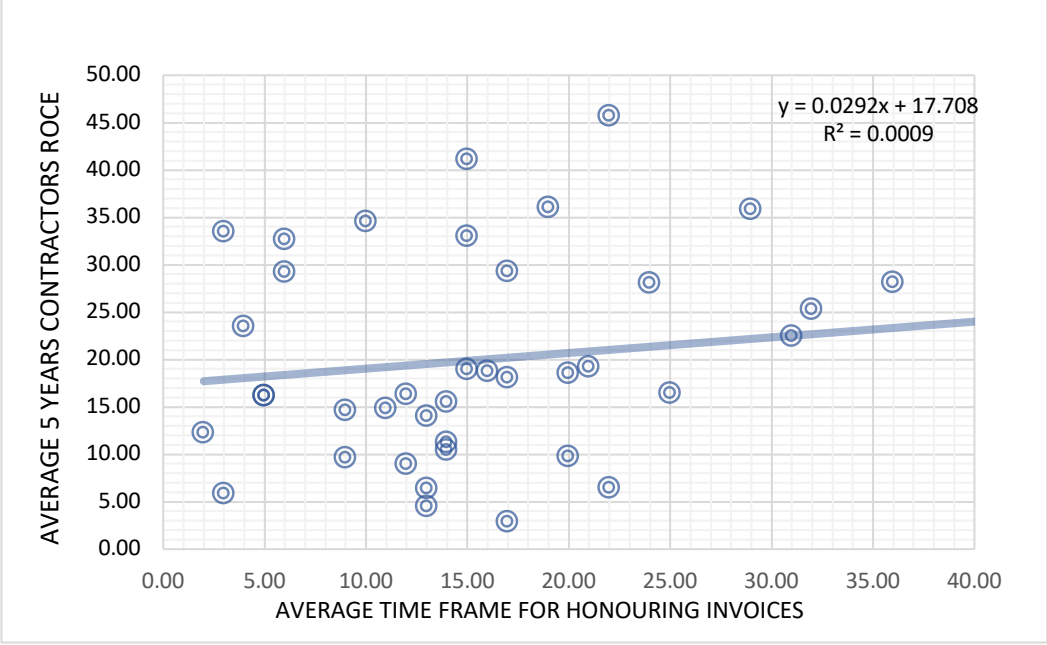


Figure 6.4.5d: Scatter diagram showing relationship between a delayed time frame in honoring invoices and a business's average debt ratio (Column B v. Column F)

Figure 6.4.5 d illustrates a scatter diagram showing the statistical relationship between additional days for honoring invoices and a contractor's average debt ratio over a five year period. The R^2 value displayed via the scatter diagram produced a *(p)* = 0.01, n= 40, p<0.05 denoting a weak relationship between delayed days and a contractor's debt ratio. Moreover, the Pearson correlation coefficient produces a (u = 0.04) denoting a very weak negative relationship. This implies there is no significant relationship between additional days for honoring invoices and a contractor's debt ratio.

Overall, findings from the four correlation analyses calculated in figure 6.4.5 a, b, c and d reveal there is no significant relationship between the average time frame for honoring contractors' invoices and a contractor's business performance for small and medium-sized companies. Therefore, the null hypothesis (H_O) should be rejected and the alterative hypothesis (H_1) should be accepted.

Note that the interpretation of Pearson's correlation coefficients and r-squared for the above values was based on Higgins' (2003) correlation coefficient table, as illustrated in table 6.4.5.

Table 6.4.5 Interpretation of correlation coefficient (Higgins 2003)

Coefficient	Relationship
±0.01 and ±0.19	Very weak relationship
±0.20 and ±0.39	Weak relationship
±0.4 and ±0.59	Moderate relationship
±0.6 and ±0.79	Strong relationship
±0.8 and ±1.00	Very strong relationship

6.4.6 Relationship between time frame in honouring invoices and construction business performance (Tier 2 clients)

Table 6.4.6 shows a summary of four financial ratios used in the analyses of contractor business performance, specifically for main contractors in the UK. This study has put together a total of 22 construction companies from table 6.3.3 whereas financial statements for the aforementioned were extracted from the Companies House website. A full analysis of each company's turnover, operating profit margin, return of capital employed (ROCE), current assets, current liabilities, total assets and total liabilities over five years is attached in appendix I.

Column C in Table 6.4.6 illustrates the average operating profit margin for a main contractor with reference to its annual turnover. Subsequently, column D presents a contractor's average return of capital employed; column E, a contractor's average liquidity ratio; and column F, a contractor's average debt ratio over a 5-year period in all analyses.

Overall, the mean scores of both the operating profit margin 4.34 and ROCE 25.73 indicate a significant deterioration of contractors' business performance as a result of increasing trade credits, for instance 60 to 90 days payments that constrain contractors' working capital. In recent times, between 2017-2020, difficulties in the economic climate caused by unprecedented events such as Brexit and COVID-19 have compelled many businesses to indulge in unfair payment practices to boost their working capital and profits. This is evident in the current ratio calculated in Column D in Table 6.4, whereby most large construction businesses have shown less capability in meeting their short-terms liabilities. The mean score of 0.71 in column E reflects the average liquidity ratio, while the mean score of 0.79 in column F represents the debt ratio for main contractors' business performance.

Similarly, a Pearson's correlation analysis was conducted with a squared correlation coefficient (r^2) value to determine the statistical relationship between a delayed time frame in honouring invoices and a contractor's business performance. Using SPSS 25, the following data were subjected to SPSS scatter diagrams: Table 6.4.6 column B vs. C; column B vs. D; column B vs. E and column B vs. F as follows:

Table 6.4.6 Summary of time frame for honouring contractors' invoices and construction contractors' average business performance over a five-year period

S/No.	Average time frame for honouring invoices	Difference between average time frame for honouring invoices and industry standard payment terms (30)	Average 5 years profitability of main contractors	Average value for ROCE	Average value for Liquidity Ratio	Average value for Debt Ratio
	A	B	C	D	E	F
Company 1	120	90	3.89	13.88	0.81	0.97
Company 2	50	20	5.03	15.51	0.76	0.79
Company 3	44	14	5.43	21.53	0.79	0.75
Company 4	41	11	3.32	45.96	0.69	0.84
Company 5	57	27	3.10	43.41	0.86	0.85
Company 6	43	13	7.43	17.65	0.53	1.00
Company 7	46	16	3.01	43.54	0.85	1.00
Company 8	42	12	7.16	25.19	0.03	0.72
Company 9	43	13	1.38	24.68	0.58	0.64
Company 10	38	8	2.03	16.92	0.58	0.80
Company 11	45	15	5.11	43.09	0.87	0.75
Company 12	47	17	6.48	30.58	0.58	0.93
Company 13	52	22	5.63	16.30	0.57	0.62
Company 14	40	10	4.99	19.60	0.98	1.15
Company 15	35	5	5.98	11.71	0.75	0.68
Company 16	47	17	2.50	39.85	0.78	0.79
Company 17	44	14	3.62	13.13	0.67	0.88
Company 18	50	20	3.37	12.91	0.87	0.86
Company 19	47	17	5.10	22.80	0.58	0.55
Company 20	41	11	3.58	55.09	0.67	0.54
Company 21	41	11	1.48	22.93	0.89	0.68
Company 22	39	9	5.95	9.89	0.99	0.54
Mean	**47.82**	**17.82**	**4.34**	**25.73**	**0.71**	**0.79**

Figure 6.4.6a presents a scatter diagram showing the statistical relationship between time frame for honoring contractors' invoices and business's average operating profit margin over a five year period. The R^2 value displayed via the scatter diagram produced a (p) =0.05, n= 22, p<0.05 which shows a weak monotonic relationship between the variables.

Moreover, the Pearson correlation coefficient produces (u= -0.07) denoting a very weak negative relationship. This implies there is no significant relationship between delayed payments and contractor's operating profit margin. Please refer to Table 6.4.5 for an interpretation of the correlation coefficients.

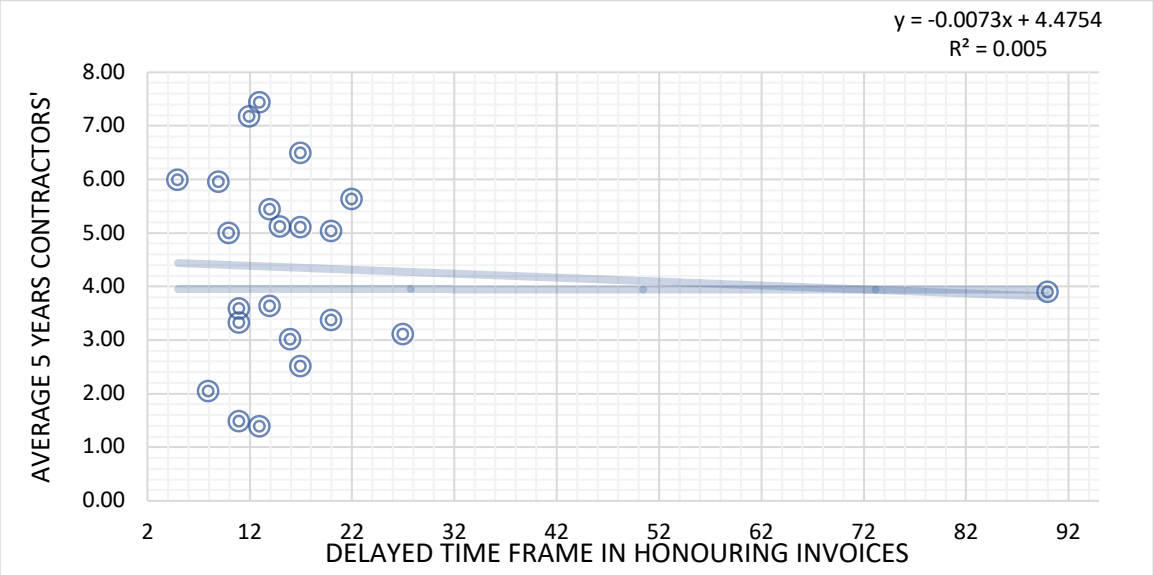


Figure 6.4.6a Scatter diagram showing relationship between delayed time frame in honoring contractors' invoices Vs. a business's average operating profit margin (Column B v. Column C)

Figure 6.4.6b below illustrates a scatter diagram showing the statistical relationship between delayed time frame for honoring invoices and contractor's average return on capital employed over a five year period. The R^2 value displayed via the scatter diagram produced a (p) = 0.02, n= 22, p<0.05 showing a linear relationship between delayed time frame for honoring invoices and a contractor's capital employed. Moreover, the Pearson correlation coefficient produced a (u=-0.13) denoting a very weak negative relationship. This implies there is no significant relationship between additional days for receiving payments and a contractor's return on capital employed. A possible explanation for such a result is because the size of the data obtained is smaller and poses a greater likelihood of obtaining a spurious figure.

Similarly, figure 6.4.6c illustrates a scatter diagram showing a statistical relationship between additional days for honoring invoices and contractor's average liquidity ratio over a five year period. The R^2 value displayed via the scatter diagram produced a (p) = 0.03, n= 22, p<0.05 showing a weak monotonic relationship between a delayed time frame for honoring invoices and contractor's liquidity. Moreover, the Pearson correlation coefficient produced (u =0.19) denoting a very weak negative relationship. This implies there is no significant relationship between delayed payments and contractor's liquidity ratios.

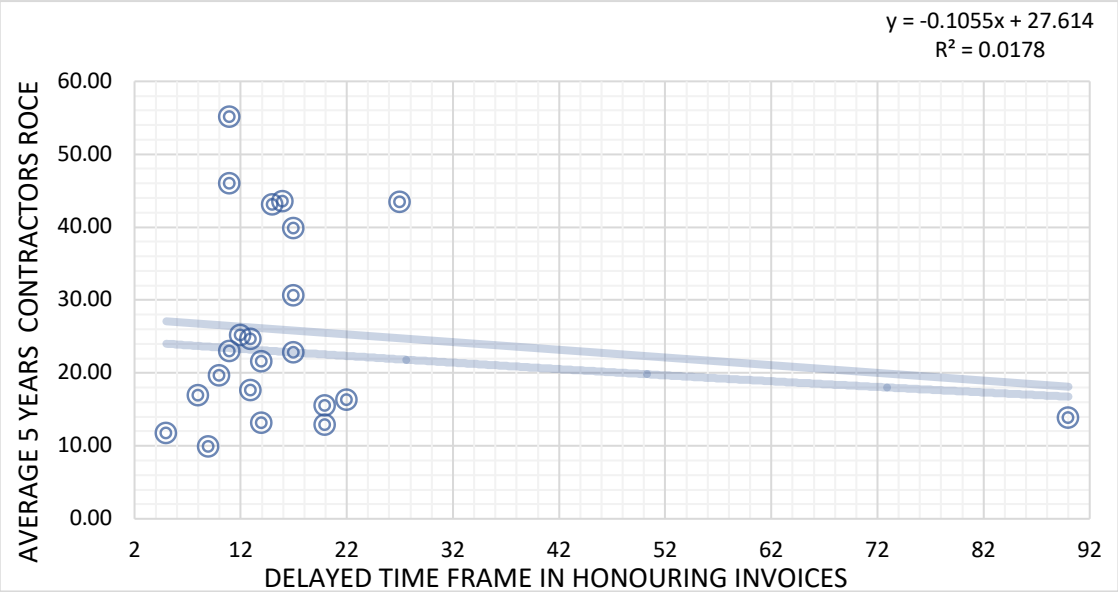


Figure 6.4.6b: Scatter diagram showing the relationship between delayed time frame in honoring invoices and a business's average capital employed (Column B v/ Column D)

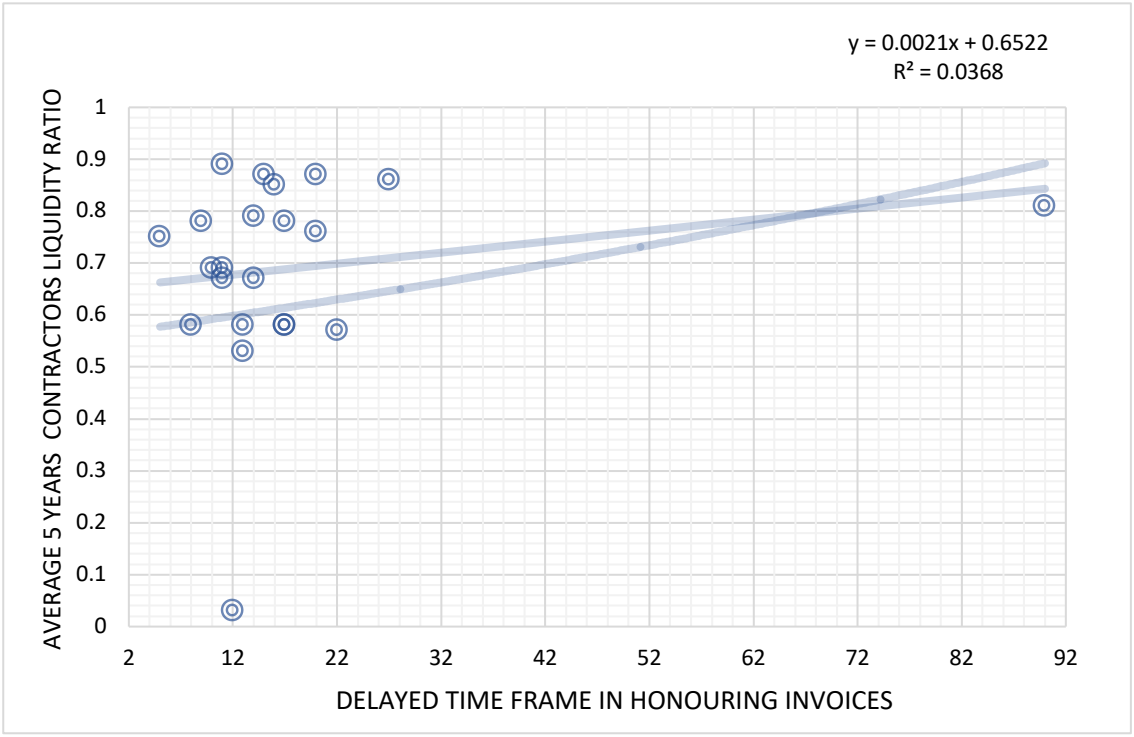


Figure 6.4.6c: Scatter diagram showing the relationship between delayed time frame in honoring invoices and a business's average liquidity ratio (Column B v/ Column E)

Figure 6.4.6d below presents a scatter diagram showing a statistical relationship between additional days for honoring invoices and contractor's average debt ratio over a five year period. The R^2 value displayed via the scatter diagram produced a *(p)* = 0.07, n= 22, p<0.05 denoting a weak relationship between delayed days and contractor's debt ratio. Moreover, the Pearson correlation coefficient produced a (u = 0.48) denoting a somewhat weak relationship. This implies that for Tier 1 main clients, there is a slightly weak relationship between delayed time frame in honoring invoices and contractor's debt ratio. A possible explanation for this is perhaps due to the late receipt of payments affecting a contractor's cashflows and streaming the use of debt-constraint expropriation to secure extra cash.

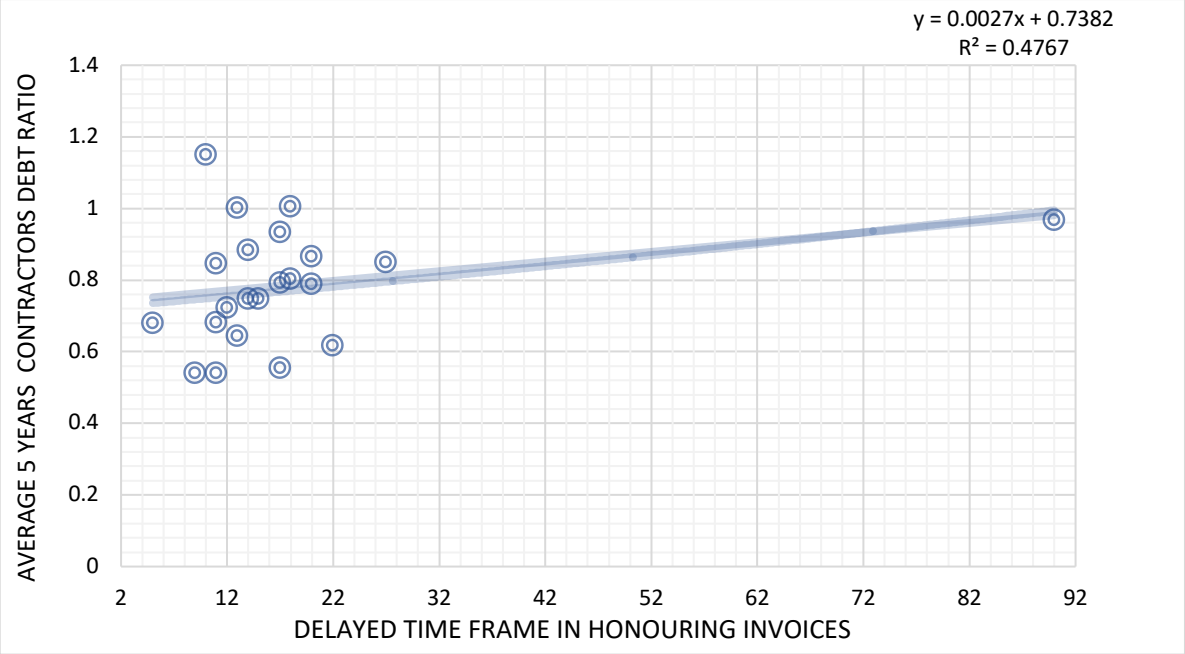


Figure 6.4.6d: Scatter diagram showing the relationship between a delayed time frame in honoring invoices and a business's average debt ratio (Column B v. Column F)

Overall findings from the four correlation analyses carried out in figures 6.4.6 (a, b, c and d) and 6.4.6 (a, b and c) reveal there is a weak relationship between a delayed time frame for honoring invoices and a contractor's business performance. Therefore, the null hypothesis (H_O) should be rejected and the alterative hypothesis (H_1) should be accepted.

6.5 Case Studies

This section reviews 15 case studies of small and medium-sized companies that fell into administration or insolvency as a result of unfair payments. The companies selected had several financial difficulties, cashflow problems and unfair payments that resulted in business failure. The companies were sourced via Companies House administrator reports (here) and Construction News (here) based on insolvency due to unfair payment practices and poor cashflow. Table 6.5 presents summary of small and medium-sized construction companies in terms of the following: age, nature of clients, turnover over a five-year period, outstanding payments, business performance, average payment days and reasons for failing.

The analysis from Table 6.5 reveals that most companies had a long history of trading and carrying out construction works in the UK and abroad and were established for more than 10 years. The nature of these companies' clients reveals that all tiers of clients are involved in unfair payment practices.

Data from table 6.5 shows an average turnover of £166m with 2.32% profits over a five years period. A full analysis of each company's turnover, operating profit margin, return of capital employed (ROCE), current assets, current liabilities, total assets and total liabilities over five years is attached in appendix J.

Findings from these analyses reveal a significant difference between turnover and contractor's operating profit margins, as turnover seemed to be higher compared to profits. From the business phrase, "turnover is vanity and profit is sanity but cash is king", it could be argued that insufficient working capital coupled with low priced tenders are the main reasons for contractors failing. For instance, it was reported earlier in 2018 that the Dawnus group had a high turnover of £170m while Shaylor Group had £152m, though in the following year both contractors called for technical liquidation and ceased doing business, thereby putting other companies into administration processes.

Perhaps it could be argued that the notion of profit margins and turnovers does not represent the true financial performance of a business. In other words, most

contractors usually forecast their turnover and profits from tenders or works they have just secured or bid for, which is simply forecasting their margins and working capital before being paid.

In terms of outstanding payments and the average amount of days to pay, the data reveal interesting findings on contractors. The total amount of outstanding payments owed to all contractors that failed was £378m in the year 2019, which may be deemed to be double their turnover. The average amount of days taken by contractors to pay suppliers or subcontractors is revealed by the data to be the same average payment period published by Build UK (2019). It takes approximately 55 days for a contractor to pay a subcontractor from the day of receiving invoices from their clients.

In terms of liquidity and debt ratio analysis, the findings reveal that contractors had lower liquidity with a mean score of 0.78 and a high debt score of 2.0. This illustrates that the majority of contractors had more liabilities than assets. Practically, this is the most common cause of financial difficulties and inabilities to sustain cash pressures for most construction companies.

Moreover, as each company affirmed different reasons for going into administration such as project delays, shortages in bank borrowings, onerous contracts, underbidding of tenders and diversification of business; the most commonly cited cause for all of them was lack of cash. The reason was that most contractors had to quickly fund their project costs i.e. site mobilisation, paying labourers and suppliers, purchasing material etc. and using their turnover for potentially 35 to 75 days. Therefore if payments were not received or promptly paid by clients, contractors would experience cashflow problems leading to insolvency risks. For instance, when the ground engineering specialist contractor Aspin fell into administration in July 2019, the £40 m turnover firm blamed cashflows problems, delayed payments of £800,000 from Carillion’s collapse and shortages in bank lending as reasons for its collapse (Price 2019). Overall, the real industry data analysed in this chapter reveals that late payments to contractors significantly causes cashflow problems for many businesses in the sector.

Table 6.5: Summary of Construction Clients: nature, turnover, outstanding payments, business performance, average number of days for payment and causes for going out of business (sourced from Construction News 2020)

No	Company	Age of Company	Nature of Clients	Turnover over 5years	Operating profit over 5 years	Current ratio over 5 years	Outstanding payments (in millions)	Debt ratio	Average number of days to pay	Reasons for going out of Business
1	Vaughan Engineering Limited	46	Tier 2&3 clients	211630849	2.05	0.88	800,000	1.06	65	Stagnation in cashflow, delayed payments, Carillion effect
2	Pochin	50	Tier 3 clients	706856285	2.87	0.82	70,000,000	1.21	59	Legacy issues of contracts, Underbidding of tenders, cashflow pressures
3	Aspin	30	Tier 3&4 clients	104011020	2.16	0.42	17,000,000	1.33	60	Problematic contracts, Carillion effect, cashflow problems
4	Lincoln-Simons Group	75	Tier 3&4 clients	603403	1.69	0.76	78,000,000	1.12	50	Economic uncertainties (Brexit), contract delays, unsustainable cashflow
5	Hawk Plant	40	Tier 3&4 clients	166782111	2.26	0.83	28,000,000	1.18	60	Difficulties in trading conditions, loss of major clients, problematic contracts, delayed projects, cashflow pressures
6	Paragon Interiors	34	Tier 3 clients	19927629	4.43	0.59	17,000,000	1.3	55	Cashflow problems, business diversification
7	Lakesmere Group	29	Tier 3 clients	70804877	1.97	0.88	26,000,000	0.93	46	Business diversification, stagnation of cashflow, difficulties in trading conditions
9	Marcus Worthington and Company	43	Tier 3 clients	31474212	0.84	0.86	23000000	2.59	55	Economic uncertainty, Fall in bank borrowings, Cashflow pressures
10	Shaylor Group	10	Tier 2&3 clients	87931	4.10	0.69	34030000	1.18	90	Cashflow problems late payments, bad debts, tightening of credit terms
11	Bardsley Construction	55	Tier 3 clients	316604817	2.44	0.99	45000000	1.72	39	Delays in payments, Contractual disputes, Economic uncertainties, Political environment, time overruns, Resources shortage, under-pricing of projects, Cash issues
12	Sanderson Contracts	20	Tier 3&4 clients	217031270	1.18	0.86	36700000	0.66	50	Cashflow pressures, bad debts
13	UKD Groundworks & Civil Engineering	20	Tier 3 clients	155741172	1.84	0.81	3000000	0.93	48	Cashflow pressures, bad debts, unpaid retentions, difficulties in trading conditions, loss of major clients
14	Clugston	90	Tier 4 clients	2638657	0.46	0.44	2638407	8.82	45	Delayed payments, contractual disputes, under-pricing of projects, cash flow problems
15	Blackbourne Limited	49	Tier 4 clients	20527128	-1.20	1.76	3873444	2.79	40	Cashflow problems, late payments, bad debts, tightening of credit terms
	Total			**166796298**	**2.32**	**0.78**	**378,530,000**	**2**	**54.4**	

6.4 Results and Findings

The findings from this chapter provide meaningful, real insights concerning unfair payment practices in terms of payment durations, the nature of clients and their impact on business failure. The payment performance data from tables 6.4.1, 6.4.2, 6.4.3 and 6.4.4 show that tier 1 clients pay their contractors promptly, with an average of 90% of invoices settled within 30 days and 84% of invoices issued within 5 days from the date of receipt of invoice. Tier 2 and 3 clients were discovered to be notorious in paying their supply chains late, although the findings illustrated that Tier 3 had been the worst payers among the three levels of construction clients.

In terms of business performance, the statistical analyses reveal a somewhat weak relationship between unfair payments and contractor performance. The results in figure 6.4.5 (a), (b), (c) and (d) affirm a weak monotonic relationship between a delayed time frame for honoring invoices and a contractors' average operating profit margin, return of capital employed, liquidity and debt ratios (p =0.04, p =0.09, p= 0.09 and p= 0.01). The implication of these findings is that there is a relationship between delays in honoring invoices and a construction contractor's financial performance, although the relationship is weak.

6.5 Summary

In summary this chapter has looked at archival data and case studies of various construction companies and their financial performance gathered from different sources and surveys. The data presents the payment performance of three tiers of construction clients in the UK; specifically the average time for honouring invoices, the percentage of payments made within 60 days and the percentage of invoices not paid within the agreed terms (late payments). In addition, business performance for the tiers of construction clients were obtained to ascertain whether unfair payment practices affected business performance in the construction industry. Case studies were also discussed about companies that had faced financial distress as a result of unfair payments.

CHAPTER 7

Qualitative Data Analysis - Semi-Structured Interviews

7.1 Introduction

This chapter presents the results of the qualitative data inquiry for an in-depth understanding of the research problem. Firstly, the chapter examines the profile of the study participants and the sample representativeness of the interviewees. A brief description of the interview data and the structure of the interviews are subsequently analysed. After the interview data had been transcribed, coded and analysed, the views of the study participants were then presented under five subheadings in line with the research objectives. For a better understanding of the research problem, interviewees' perceptions were sought regarding an overview of unfair payment practices and their consequences for the construction industry: clients' interests/attitudes to unfair payment practices; the robustness of standard forms of contracts in curtailing unfair payment issues; and an overview of measures to enhance payment practices in the construction industry.

7.2 Overview of the participants' profile and the Population Sample

The study participants were selected using stratified sampling methods. The choice of study participants was influenced by their background, years of experience, professional qualifications, scope of works and their understanding of the research problem. Table 7.2 illustrates the profile and background of the study participants. The study's population sample consisted of seasoned quantity surveyors, managing directors of subcontracting companies, senior project managers, commercial lawyers, project/cost consultants, construction clients, procurement officers in government departments and commercial and contract managers. A total of 19 participants took part in the study interviews. A breakdown of the study shows that 45% were quantity surveyors, 27% subcontractors, 15% construction project managers, 8% main construction clients and 5 % government representative bodies. In addition, 70% of the study participants were qualified professionals with over 15 years' experience in various disciplines.

Table 7.2: Profile and number of participants interviewed

S / No.	*Profession*	*Nature of work*	*Years of experience*	*Professional qualification*
1	Project manager- Main contractor	Building works- small to large	12	MCIOB
2	Managing director- Subcontractor	Mechanical and electrical	15	MCIOB
3	Chairman government representative body	Industry representative engaged with government	20	MCIOB
4	Managing director – Subcontractor	Flooring and Screeding	8	None
5	Project manager – Private client	Building and Property-small to large	5	MCIOB
6	Managing director - Subcontractor	Mechanical and Electrical	40	None
7	Quantity surveyor– Main contractor	Building and property	8	MRICS
8	Quantity surveyor – Subcontractor	Building and civil engineering	10	None
9	Managing director – Subcontractor	Building and property works-small to medium	9	None
10	Quantity surveyor – Main contractor	Building and property	14	MRICS
11	Quantity surveyor – Main contractor	Building and civil engineering	18	MRCIS, MCIOB
12	Quantity surveyor - Client	Building and property	6	MRCIS, MCIOB
13	Project manager - Main contractor	Building and civil engineering	38	MRICS
14	Quantity surveyor – Subcontractor	Building and civil engineering	10	None
15	Quantity surveyor – Main contractor	Building and property	15	MRCIS, MCIOB
16	Managing director – Contract manager and specialist subcontractor	Construction and engineering	28	CIARB
17	Quantity surveyor – Main contractor	Building and property	20	MRICS
18	Contract Manager - Subcontractor	Partitions and Fittings	33	MCIOB
19	Private client	Building and civil engineering	10	Other

7.3 Brief description of the interview data and analysis

Sections 4.7.2.2 and 4.7.2.4 explain how the study's interview data was obtained and analysed.

7.3.1 Validity of the findings

To uphold the validity of the study's qualitative findings, five areas were specifically addressed: the selection of the participants' profile for the study; the preparation of the interview questions; the processing of the interview data; the presentation of the interview data; and the interpretation of the findings.

7.4 Qualitative findings

This section presents the study participants' views in subheadings identified in line with the set objectives. The headings range from general perceptions of unfair payment issues in the construction industry, the robustness of standards forms of contracts and other regulative measures designed to curb unfair payment practices, the scale of late payments between tiers of clients/contractors and the impacts of late payment practices on business performance. Below are some key excerpts trimmed from the interview data.

7.4.1 General views of study participants concerning unfair payment practice

The study participants were asked to express their views about unfair payment practices in the construction industry. The responses provided led to a wide range or array of perceptions concerning unfair payment practices in the industry. For a better understanding of the research questions, some excerpts are highlighted as follows:

> *"…construction industry is doomed with unfair payment practices especially late payment and unreleased retentions ... such that for the past 38 years I haven't seen any company, regardless of its profile, size or value that gets paid on time nor receives their full retentions because of fat cats (paymasters) always wanting to withhold money in their accounts till the last minute…''* (Senior Project Manager- Main contractor)

> *"… the industry is known for a corporate culture that allows main contractors (like what happened with Carillion Plc's directors), to cash cows (milk or squeeze) their subcontractors or small suppliers' payments so as to boost their working capital and portray a good picture of their company.."* (Chairman of government representative body BEIS)

> "…*Systemic abuse of cash retentions has left SMEs in debt and going out of business… each week we hear both large and small construction companies going bust with absurd reasons, in reality a lack of regular payments is the problem…*'' (Project Manager-Contractor)

The study participants were probed further regarding the scale and state of unfair payment practices within the construction sector. Some specific questions asked include the following: "you said unfair payment practices is a chronic problem in the construction sectors; can you help me with specific examples in the supply chain where unfair payment practices are endemic? Besides, who bears the brunt of unfair payment practices the most within the construction supply chain?" The study

participants provided wide ranging responses to the questions asked. Some of quotes are highlighted as follows for better understanding:

> *"... I think unfair practices is a huge issue for small companies or subcontractors because they rely heavily on regular cash flow to survive compared to large construction companies that have huge working capital, better assets and other business..."* (Project Manager – Main contractor)

> "*…overall, late payment problems is the most common issue in the construction sector … the scale of the problem often depends on your position in the supply chain… from my view, subcontractors and suppliers are more vulnerable to late payment problems normally because of unfair contracts and clients' commercial domineering power*…'' (Project Manager – Private client)

However, there were dissenting voices among some study participants regarding the scale of unfair payment practices in the construction industry. Some study participants were of the view that unfair payments were not a problem in construction, perhaps because it is the nature of the industry itself. Below are some excerpts regarding their views to the problem:

> *"…unfair payment practices such as late payment is not that common in construction … personally I work with clients and they pay us on time …though we may probably be late with a couple of days paying subcontractors…''* (Senior Quantity Surveyor – Main contractor)

> *"…late payment certainly exists but it is not a problem to us because we have some kind of mechanisms in place that makes us work closely with the entire supply chain to mitigate potential risks like payments and others…''* (Project Manager – Main contractor)

Generically, the majority of study participants were of the view that unfair payment practices, particularly late payments, were common in the construction industry. Some study participants perceived unfair payment practices as a genuine and deep-rooted problem characterised by industry culture and unethical practices in the construction sector.

7.4.2 Perceptions of study participants to unfair payment issues in the construction industry

The views of the study participants were sought concerning client perceptions of unfair payment practices. Interviewees were asked to express their views regarding the

context and nature as to why clients seemed to be apathetic about unfair payment issues. Other questions asked included: “Do you think clients are sympathetic to unfair payments issues in the construction industry?” The participants’ views of the question varied significantly with some descriptions relating to types of clients, intuitions, mechanisms, self-interests and so forth. Some of the excerpts are quoted verbatim for a better understanding of the responses from the study participants:

> *“…Clients have always been sympathetic, and they have taken action against it… but from my experience private clients are more proactive in paying as they are not constrained compared to public clients where money is heavily scrutinised and bureaucracy is longer…*” (Quantity Surveyor – Main contractor)

> *“…From an operation standpoint, clients have never been sympathetic to late payments … because they do not see companies struggling … they just want their projects to be completed. Private clients are more sympathetic because they’re investing their money, while public clients see it more as a job…”* (Quantity Surveyor – Subcontractor)

> “…*Six years ago, I worked with a main contractor who are not proactive or interested at paying their supply chain on time. but they’re best at banking money into their accounts and not paying other suppliers until some are sort of screaming for it…”*(Quantity Surveyor – Subcontractor)

Obviously, the above views suggest that client’s interests in unfair payment issues are polarised due to the fact that clients can be apathetic about paying on time; the type of client, the process in place, blame culture, a lack of trust and the fragmented nature of the construction industry with its potential to deflect clients’ interests.

In addition, most Tier 2 construction clients (main contractors) were accused of using their bargaining powers as main industry players to push their use of some payment mechanisms such as early payment schemes and supply chain finance in order to boost their cashflow and profit margins. Thus, it could be argued that clients’ interests concerning unfair payment issues are polarised around bargaining power, cashflow issues and a lack of business goodwill.

7.4.3 Views of study participants on clients' indifference to unfair payment practices

Furthermore, opinions were sought from participants if they believed that clients were indifferent to unfair payment practices in the construction industry. Some textual excerpts mentioned by participants are highlighted as follows:

> *"I would like to say private clients are often deliberate in withholding payments due to the profit incentivised nature of business… if you have more money in the bank you get more interest compared to paying it out while public clients have more processes that tend to be difficult in paying on time…''* (Project Manager – Main contractor)

> *" …In most projects I have worked, private clients offer short term payment while public offer longer terms and most are not flexible…''*(Quantity Surveyor - Main contractor)

> *"…Private clients are quick and committed (more) in paying till the end of a project while public are less driven because it's not their project…I think client indifference is influenced by their nature…"* (Managing Director – Small flooring and screeding company)

Generically, the views of the study participants portray that clients are indifferent to payment practices in the construction industry. Public clients are considered to be lax towards timely payments due to bureaucracy and the accountability of public funds, whilest private clients are seen as proactive and deliberate regarding payments for reasons of financial risk aversion. Moreover, the construction market has recently been dominated by private sector construction activities that account for high levels of unfair payment practices in the industry.

7.4.4 Views of participants on the robustness of payment practices within various standard forms of contracts (SFoCs) and other legislative measures

The views of participants concerning the robustness of various standard forms of contracts and legislative measures were sought out in order to have a better understanding of research objective one. A substantial number of participants were unanimous that the use of payment terms and practices stipulated in SFoCs and other legislative measures to curb unfair payments were ineffectual in the industry. Some of the textual excerpts by study participants are highlighted as follows:

" … *In fact, there's hesitance among subcontractors and even main ones in maintaining amicably working relationships than using the inputted 'aggressive measure' towards the problem. Overall, I would think it's only good as a piece of paper in rea*lity…'' (Quantity Surveyor – Subcontractor)

"…*To say, most of the contracts and legislation consist of loopholes that give flexibility to payments such that clients and main contractors use or manipulate payment clauses as long as they want…''* (Project Manager-Main contractor company)

*"…Contractors like Carillion and many others have abused and manipulated clauses and regulations designed to curb unfair payment practice…thereby forcing subbies to accept longer terms and even charging interest to get their payment earlier…" (*Chairman of Government Representative body BEIS)

"…*most of the contracts are bespoke* ***(back to back****), I have never signed a pure standard form of construction contract . . .it will be their price and terms of payments and I have no choice but to abide since I want the work as well..''* (Managing Director -Subcontractor)

7.4.5 View of participants on the scale of unfair payment practices between different tiers of construction clients

In addition, the study participants were asked to describe the scale of unfair payment practices between different tiers of contractors. Some of the excerpts proffered by the participants are highlighted as follows:

"…*Definitely agree that late payments vary between different tiers of contractors but from my experience they're all affected by the problems…"* (Quantity Surveyor – Main contractor)

"…*Based on the scale of preference, contractors and suppliers in the lower positions of the supply chain are mostly affected by unfair payment practices…"* (Quantity Surveyor - Public client)

"…the scale of the problem is enormous in construction… as principal contractors are notorious in withholding payments … in fact they always pay below the invoices and keep retentions up to 5 years…'' (Quantity Surveyor – Subcontractor)

"…In reality, many subcontractors are on longer payment terms with their main contractors or clients and shorter with suppliers or vendors… so most are prone to all kinds of unfair practices …" (Quantity Surveyor *-Maincontractor)*

The quotes above clearly show that unfair payment practices are prevalent among Tier 2 clients and reasonable to Tier 3 clients and other members down the supply chain. Perhaps it is partly driven by industry notions and a business culture that allows unfair payment practices to be insignificant for upper tier construction clients but a major problem for lower tiers.

7.4.6 Participants views on unfair payment practices effects on a contractor's business performance

The study participants' views were sought on whether unfair payment practices influenced a contractor's business performance. Significant responses and insights were received into various aspects or approaches used to measure business performance. The majority of study participants seemed to indicate that short-term financial indicators such as profits, turnover, operating margins, share prices and return of capital employed were significantly affected due to late or non-payments by the client. On the other hand, some participants had different notions about other non-financial measures that were of significance to businesses, for instance loss of competitive advantage, productivity, morale, credit ratings, administrative burdens, failure to pay salaries and annual bonuses, loss of staff retention, health and safety issues, poor quality of work and loss of future investment, etc. Some of the textual excerpts uttered by participants are highlighted as follows:

> "…*Mostly, unfair payment affects contractor cashflow and profits since payments are retained by the QS or client…so that has a direct impact on those two and not so much longer, a business will collapse…"* (Project Manager- Main contractor)

> "…*Profit foremost, though indirectly it has other consequences, loss in competitive advantage, increase in administrative costs as you need to allocate people and resources to chase unpaid invoices, losing the best deals, morale, productivity, progress of work on site, materials or quality issues…"*(Managing Director - Subcontractor)

> *"…From my experience, unfair payments have a negative effect on human costs. I know of a company director that had to use all his savings to pay staff and suppliers that resulted in a heavy burden, loss of investments and stress from chasing payments owed to a client…"* (Project Manager – Contractor)

> "*Apart from financial consequences on business, unfair payments have a profound effect on one's life…I faced a lot of stress, panic and sleepless nights because payments were not coming from main*

contractors while I had to pay workers and suppliers on site…." (Managing Director - Subcontractor)

7.4.7 Participants' views regarding the role of the client-contractor relationship on unfair payment practices in the UK construction industry

In addition, the study participants were asked to describe the role of the client-contractor relationship in unfair payment practices. Some excerpts proffered by participants are highlighted as follows:

> *"…Most clients, especially public, pay us late. But even when they do so we don't send some sort of letters or try to pull workers or plants off site since we still want to maintain a good working relationship…"* (Quantity Surveyor -Main contractor)

> *"…Definitely most subbies wouldn't like to speak ill of contractors or clients, since we still want to keep the business running and have a good working relationship… we sort of help each other as much as you could …"* (Managing Director -Subcontractor)

> *"…. I would say if a client is late to pay, I wouldn't pick a call or send any sort of letter, for it's not conducive for working relationships. I have to look after them more than they look after me. They've got the work and they know you need it. You need to give and take or even accept some of their terms as your main source of income*…" (Subcontractor)

Overall, from the above views by study participants, the role of the client-contractor relationship plays a significant factor in unfair payment practices as it is desirous for most parties to prioritise their relationship at all cost.

The reason is that the industry's "give and take" philosophy towards client-contractor relationships plays a huge role; as a significant proportion of contractors find it difficult to query the issue and be firm with their clients, because in doing so, they could jeopardise both their relationships and future work as well. As mentioned by one interviewee, they would never use any sort of measures or actions against their clients as they still want to maintain a good relationship in the long run. Again, this "give and take" attitude may go somewhere towards explaining a client's indifference to unfair payment practices because most clients, including main contractors, have a strong supposition that subcontractors and other lower tiers would not complain because of their commercial bargaining power in securing and tendering for major contracts in the industry.

7.5 Results and findings

Overall, the findings from qualitative data have highlighted interestingly mixed views concerning unfair payment issues, clients' indifference to unfair payments, the robustness of SFoCs and other legislative measures, the scale of unfair payments on different tiers of construction clients, the role of the client-contractor relationship and the effects of unfair payments on a contractor's business performance.

Most findings have confirmed that unfair payments, particularly late payments, are part of corporate culture and a trademark of the construction industry. For example, most interviewees have affirmed late payment as a prevailing culture that it is acceptable for clients and main contractors because of the industry's hierarchical structure and their bargaining power.

Moreover, when the participants were asked about client perceptions and attitudes to unfair practices, their views seemed to be mixed and polarised, as it may not be in the client's best interests to deal with such issues. As for the robustness of SFoCs and other legislative measures in readdressing unfair payment practices, the findings reveal that most measures are ineffective and less stringent for parties to adhere to. This is because of the modification of contract clauses and forms that often disadvantage the lower tiers (i.e. the use of adhesion contracts and unfair terms) and the ability to utilise them is impaired by the client-contractor relationship. In terms of client indifference to unfair payment practices, public clients seemed to be more lax due to the bureaucratic accountability of public funds, while private clients were more proactive towards timely payments. These evidences however are contrary to the majority of unfair payments practices wherein the problem is centred on Tier 2 and 3 clients, most of whom are private.

On the other hand, the qualitative findings gave an interesting perspective on the effects of unfair payment practices on a contractor's business performance that would not have been captured by the quantitative data, as seen in 5.8.5. For example, the interview data highlighted other factors that directly influence a contractor's business performance such as reputation, loss of competitive advantage, productivity, credit ratings, administrative burdens, failure to pay salaries and annual bonuses, the loss of staff retention, health and safety issues, poor quality of work and loss of future investments, etc. These effects are deemed not to be quantifiable although they have

significant consequences for business performance and continuity. While the key measures of industry performance remain financial outcomes such as profits, turnover and return of capital employed, there is a growing concern about further impacts on the individuals running these businesses. Similarly, the notion can be viewed with the current situation of UK construction companies failing whilst causing ripple effects for other individuals.

Overall, one of the key deductions from the views highlighted by the study participants is the role of the client-contractor relationship in unfair payment practices. Although the majority of participants gave mixed views on the questions asked, the one foremost thing that could perhaps be argued was that most contractors including subcontractors and suppliers would not jeopardise or damage any sort of relationship established with a client as a result of unfair payment practices.

7.6 Summary

In summary, this chapter has presented qualitative analyses from the views of experienced industry practitioners on the research problem. The views of these industry practitioners have been presented in line with the research objectives covered in Chapter 1. Additionally, findings from this chapter will be confirmed and compared to the views obtained from the preceding chapters.

The general view from the qualitative findings indicate that unfair payment practices are problematic to the tiers of construction clients. Regardless of existing contractual measures, bargaining power, the nature of the client and their position in the supply chain, the problem is deemed to be widespread. The majority of views expressed by industry practitioners are of the opinion that it is trivial for clients if an invoice is paid late, nor are any sort of unfair practices inputted, given the fact that there are apathetic interests in timely payments. Additionally there is a strong supposition that client-contractor relationships and the desire to protect them have intensified the late payment culture in construction.

CHAPTER 8

Discussion

8.1 Introduction

This chapter discusses the findings from the quantitative, qualitative and archival data analyses regarding the study. The main aim of this study is to critically evaluate the findings from the data analysed with the intention to develop a theoretical framework that will help minimise unfair payment practices in the UK construction industry in the next chapter. Firstly, this chapter discusses findings obtained from the aforementioned analyses in line with the research objectives. Further reference is made within these discussions to the literature reviewed in chapters two and three. The discussions are held in five sub-headings in relation to the research objectives set out in Chapter 1. Also, the chapter looks at the research's contributions to the body of knowledge as well as the implications of the study.

8.2 Research Findings

A common inference from the study's literature is that unfair payment practices are deep-rooted issues in the construction industry. Perhaps, the issue of unfair payment practices is not peculiar to the construction industry alone. For example, a recent report published by BEIS (2018) revealed that cosmetic and departmental stores (often referred to as high street companies such as WH Smith, Boots, Holland and Barret, etc.) have standard payment terms of 90 days and beyond plus other unfavourable practices that reflect payment practices in the construction industry.

Other distinctive features identified by the study's literature that exacerbate unfair payment practices include the fragmented and hierarchical structure common to construction supply chains. Many authors believe that fragmentation and a lengthy supply chain restrict the speed of prompt payments, which has adverse impacts on small and medium-sized businesses, individuals, families and the economy at large. For instance, 3 in 10 small contractors struggle to pay salaries and business taxes due to unfair payments (Prior 2020).

Moreover, entry barriers to the construction business were also identified as a major contributor to unfair payment practices. Indeed, financially challenged construction

businesses are often allowed to operate freely in a highly competitive environment. Thus, such companies with less financial cushions(or shock absorber) are more likely to run into fdifficulties. Without doubt, a robust cash flow is essential for a construction business's survival. Moreover, cash is closely related to payments that serve as the primary source of working capital required for contractors to successfully deliver their projects and attain profits.

Another overarching finding from this study is that payments to construction contractors are like fuel that energise their businesses. Cashflow moreover is the most significant indicator of a construction business's performance.
Apart from the study's literature review, the archival data analysis in table 6.5 illustrates that dwindling payments and cashflow pressures were the main reasons for a construction business's collapse. Moreover, the prevailing industry culture and disparity of bargaining position in the supply chain is often blamed for the deep-rooted unfair payment practices in construction. This factor was also highlighted in the qualitative inquiry of the study; where participants claimed that unfair payment is a trademark of the construction industry's corporate culture. For example a study participant interviewed in London claimed that "*…overall, late payment is the most common issue in the construction sector … the scale of the problem often depends on the contractor's position in the supply chain… subcontractors and suppliers are more vulnerable to late payments normally because of unfair contracts and clients' commercial domineering power…*"

For a thorough understanding, the study sought to evaluate the robustness of payment procedures, the scale of unfair payment practices, contributing factors, the effects of unfair payments on a contractor's business performance and the role of the client - contractor relationship in unfair payment practices. The following subheading will discuss the study's findings based on the set objectives and themes stated above.

8.2.1 Robustness of payment procedures in various standard forms ofcontracts

Findings from study's literature suggested that one of the primary objectives of SFoC's is to establish a contractual relationship that includes prompt payment from the client

to the contractor. For example, current standard forms of contract commonly used in the UK include JCT 2016, NEC 4 and FIDIC. All have payment terms or provisions

designed to facilitate timely payments, the right for interim payments, payless notices, withholding notices and non-payments provisions. These standard forms of contract clearly recommend interim payments, a time frame for honouring invoices (payments), the issuing of non-payments notices and interest on late payments, all designed to boost a contractor's cash flow. Findings from this study revealed that payment clauses in SFoCs are often disregarded or ignored, with clauses usually amended to encourage unfair payments to contractors. Yet, most aggrieved parties (mainly subcontractors) do not treat unfair practices as a fundamental breach of contract; though in most SFoCs it is considered a clear breach of contract.

The literature review also suggested that unfair payment practices in construction usually defy regulations, charters and codes such as HGCRA 1996, LDEDCA 2009, the prompt payment code and fair payment charter designed to curb them. Yet there is hardly a known case in law that has brought punitive measures against clients that indulge in unfair payment practices. Some study participants also suggested that contractors, subcontractors and suppliers also have their fair share of blame regarding the prevalence of unfair payment practices. This is because they often accept unethical payment arrangement such as "pay when paid", and "pay if paid" clauses in their contracts, therefore relegating fair payment regimes and the adjudication of payment related disputes to the background. This view is supported by Sharkey's et al. (2014) assertion that "often SFoCs in construction are amended to move risk to parties that have weaker bargaining power; thus, alluding to contracts of adhesion (take it or leave it) that are usually common between the main contractor acting as client to the subcontractor or supplier".

From a theoretical perspective, unfair payment practices in the construction industry can be linked to principal-agent and relational contracting theories. The Principal Agent theory as explained in Chapter 3 above can best be described as an agency relationship where the principal (clients) engages another party, the agent (or contractor), to perform a service on his or her behalf which involves the delegation of some decision-making authority to the agent (Turner 2004; Winch 2010; and Eriksson 2008). The problem that is likely to arise from such a relationship is that both 'principal' and 'agent' are seeking to maximise their own opportunity in a contractual

arrangement. Thus, there is good reason to believe that both the principal and agent will not act in the best interests of all. In such a situation, there is a tendency for the

principal (the main contractor acting as the client) not to pay his or her subcontractors and suppliers on time to boost their cashflow, in as much as the agent fails to treat the incident of unfair payment practice as a fundamental breach.

Similarly, the findings from this study are closely linked to relational contract theory put forward by Macaulay (1963). The theory stresses that generally, parties to a contract do not practice the complete contract when they perceive that their counterpart is an essential part of their business. Macaulay (1963) argued that in relational contracts, parties re-settle the contract in a direction to sustain the continuity of the business rather than terminating the contract. Perhaps this is an essential argument as to why the aggrieved contractual party (usually a subcontractor) engages in unfair payment practices with other parties in the construction industry, with neither seeking legal action or readdress. MacNeil (1986), in a review of relational contract theory, believed that co-operation is the most crucial characteristic of any contract and that one of the five primary components of contracts include “co-operation; economic exchange; planning for future; potential external sanction; and social control and administration”. Moreover, MacNeil (1986) believed that most contracts were incomplete, which would give a party the opportunity to look for “loopholes” that would allow them to exploit the contract. These loopholes, as discussed by numerous authors, include late payments to contractors, disparity in rates, “pay when paid”, withholding moneys due to subcontractors to enhance the main contractor’s cash flow, etc.

Moreover, the literature review of unfair payment practices suggested that the nature of construction contracts, industry practices, competition, the client-contractor relationship are issues that often allow such loopholes to be perceived as normal practices. Kumaraswamy et al. (2008) stressed that relational contract theory can be used as a guide to select contracts and minimise adverse payment practices. Fundamentally, the key lesson that can thus far be learnt from both the study’s findings and the theoretical review is that a contract cannot be practiced to its fullest for many reasons such as relationship considerations and its incompleteness, therefore allowing for loopholes usually common to unfair payment practices. For example, it is often a common practice in the construction industry for subcontractors to accept

longer payment terms ranging from a minimum of 45 days and a maximum of 120 days payments terms. Compelling contractors to accept longer payment terms and

many other unfair payment practices is in strict terms, a pure act of dishonesty and a fundamental breach of contract in the eye of the law.

This view is largely supported by the findings from the qualitative inquiry where most professional interviewees opined that the robustness of payment provisions within SFoCs was often impaired by legal loopholes, payer's attitudes, current payment processes, the use of adhesion contracts, vulnerability within the supply chain and client-contractor relationships. For example, one of the study participants claimed that "…most contracts and legislation have loopholes that give flexibility to payments …. Hence clients and main contractors manipulate them and withhold payments as long as they want …"

The study's quantitative inquiry did not differ from the viewpoint that SFoCs were generally ineffective in dealing with payment issues. For example, 82% of study participants strongly agreed that SFoCs payment mechanisms did not protect contractors against unfair payments. These findings suggest that SFoCs are ineffective due to many factors.

The findings also reveal that the majority of study participants that completed the questionnaire believed standard forms and payment legislations were *"good as a piece of paper"* because they do not address the deep-rooted unfair payment culture in the construction industry. However, the majority of clients, contractors and subcontractors still favour the use of SFoCs. Therefore the aim of this study is to design a comprehensive and sustainable payment framework that will minimise the shortcomings in current payment predicaments in the construction industry.

8.2.2 The Magnitude of Unfair Payment Practices

Objective two seeks to determine the magnitude or scale of unfair payment practices in the construction industry. To achieve this objective, the study measured the following variables: type and nature of unfair payments practices and average duration for contractors to receive payments in the UK construction industry. The study used the Late Payment Act 1998 provision, Section 4 subsection (7A) as a benchmark to measure objectives two: "anything that is a gross deviation from good commercial

practice and contrary to good faith and fair dealing; the nature of the goods or services in question and whether the purchaser has any objective reason to deviate from the

stipulated/contractual payment term". Findings from the study suggest that the majority of unfair payment practices in the literature focus on delayed or late payments as a particular problem synonymous with contractors. However, the reality is that unfair payment practices in the construction industry are not only a contractor's problem, but a wider commercial anomaly that significantly distorts the cash flow of the industry's entire supply chain.

For example, findings from the study's quantitative analysis revealed that the scale of unfair payment practices is enormous and cuts across the industry. The problem is worse in the lower levels of the construction supply chain. Key findings from the study's quantitative inquiry ranked late payment as the foremost unfair payment practice among all tiers of construction clients. Unpaid retentions and "pay when paid" were found to be prevalent practices in construction, as illustrated in figure 5.7.2.2. Moreover, the findings also revealed that there is a catalogue of hitherto-unmentioned unfair payment practices that are growing exponentially in the UK construction industry. The most prevalent of these expedient unfair payment practices include: "pay a fee to be retained in a client's supply chain list", "lower interests on delayed payments", "spurious deductions", "discounts on retention release", "supply chain bullying" and "elongated payment duration terms". Unfortunately, these unfair commercial practices are very common among main construction contractors acting as clients to subcontractors and other suppliers. There is a need to check these unwholesome practices that have significant implications for contractors' and suppliers' cash flow.

It is practically impossible to discuss unfair payment practices without critically examining the nature of unfair commercial practices among different tiers of clients. The study's documentary, quantitative and qualitative inquiries show that Tier 2 (main contractors acting as clients) are the worst perpetrators of unfair payment practices. This finding aligns with most literature in that Tier 2 clients subvert good commercial practices to enhance their business cash flow strategies. This viewpoint is supported by a recent EPR report (2019) that found "though bad payment habits are improving in many businesses; tier 2 clients seem to be far off the limelight of becoming early

payers". Hence, the proposed framework development in figure 9.1 focuses on the Tier 2 payment structure.

Furthermore, findings from the archival data analysis revealed that tier 2 clients have both poor payment performance and payment terms, with an average of 46 days payment terms, 25% of invoices not paid within the agreed terms and 90% invoices paid within 60 days. In comparison, Tier 1 clients are considered to be prompt payers, with an average of 96% of invoices settled in 30 days and 85% of invoices issued within 5 days from the date of receipt. Meanwhile, tier 3 clients are arguably considered to be the worst payers with an average of 50 days' payment terms, 26% of invoices not paid within agreed terms and 74% of invoices paid within 60 days. However, other findings revealed that tier 3 clients' have longer payment terms compared to tier 2, perhaps due to the cascade effect of delay from the upper tiers to the lower tiers within the supply chan.

A clear deduction from the study in terms of the interval for honouring invoices is that payment durations in construction remain far from the standard forms of contract's stipulated 28 days for payment. Also, findings from the quantitative and documentary analyses in terms of payment duration are closely aligned to data published by EPR (2019) that revealed the average payment duration for most construction businesses ranged from 31 to 50 days and from 51 to 90 days. Comparatively, the data also revealed that other sectors such as retail, automobile and manufacturing have better payments terms and durations for honouring invoices.

8.2.3 Contemporary Causes of Unfair Payment Practices

The review of the literature regarding causes and effects of unfair payment practices have not changed considerably in the last two decades. For example, Hughes et al. (1998) argued that causes of unfair payments are hinged on two prominent circumstance: "I cannot pay" (ability to pay) and "I would not pay" (willingness to pay) attitudes of clients. The categorisation put forward by Hughes et al. (1998) clearly explained that "I cannot pay" refers to a client's financial difficulties or constraints faced during the project's execution. The latter meanwhile is purely the client's attitude of being unwilling to pay within the agreed payment terms. For a better understanding of

the contemporary causes of unfair payment practices, the study identified 23 causes that spanned from Hughes' et al. (1998) argument. The causes of unfair payment practices were categorised into five main groups, namely cultural, industrial, technical, regulatory and others causes. Table 5.7.3.2 illustrates the five top contemporary causes of unfair payments. These causes include the use of a contractors/supplier's money to boost a client's cash flow (often referred to as cash flow strategy), the prevailing culture, the client-contractor relationship, pay 'if/or when' paid and the industry norm of 'work first get paid later'. Although the study's participants ranked these causes based on the above groupings, the majority agreed that these five causes were the most significantly contributing causes of unfair payments in modern construction businesses.

The use of cash flow strategy was ranked as the most prominent and root cause, as it received the highest mean score of 3.59 from the 23 causative factors identified by the study. Remarkably, the same factor "cash flow strategy" was also identified in the study's qualitative inquiry as the most common root cause of unfair payment practices in the construction industry. Table 6.5 showed that most of the study's participants were of the view that it is common practice for the main contractor and even clients to use unfair payments as a business strategy to boost their cash flow and financial performance.

In reality this is often common in most construction businesses that struggle financially, particularly in an industry such as construction with low working capital. Hence, most construction businesses (to a great extent main contractors) adopt measures to boost their cash flow such as inducing longer payment terms, deferring payments, withholding payments, supply chain finance, unpaid retention money, etc. Indeed, the use of unfair payment practices as a business strategy is purely an issue of "I will not pay".

Other contemporary causes identified to encourage unfair payment practices in the construction industry include the industry norm of "work first get paid later" and the client-contractor relationship. It is fair to assert that the client-contractor relationship is usually an underlying cause of unfair payment practices because most clients are aware that the business entities to whom they are indebted are most unlikely to challenge their payment prejudice behaviour because "you cannot bite the hand that feed you".

Generically, it is fair to argue that most unfair payment practices in modern construction history are largely attributed to the “would not pay” (willingness to pay) attitude of clients. Therefore, the findings from this study clearly indicate that there is a need for an alternative payment method if unfair payment practices are to be minimised in the construction industry.

8.2.4 Unfair payment practices influence a contractor’s business performance

One of the key objectives of the study is to establish the impact of unfair payment practices on construction business performance. Marr and Schiuma (2003) argued that the phrase ‘business performance’ lacks cohesive meaning because of the vagueness of specific metrics and indicators used to evaluate business performance. In the commercial sense, business performance is measured using an array of financial metrics such as return capital employed, operating profit, debt ratio, liquidity ratio and asset utilisation ratio, etc. However, it is important to note that business performance metrics vary from one industry to another, for example cash flow and profit margin in the construction sector are often different from other industries such as oil and gas, communications, etc.

In specific terms, the study analysed four financial ratios, namely operating profit margin, return of capital employed, liquidity and debt ratio for a better understanding of the relationship between unfair payment practices and the financial performance of construction businesses. The four financial ratios were chosen because they can be used to predict business continuity, cash flow and insolvency. This is imperative because in reality, most construction businesses operate on a thin profit margin and a dwindling cash flow. Therefore, it is important to determine the impact of unfair payment practices on construction business performance.

The findings in tables 6.3.1 and 6.4.6 presented an average of five years’ operating profit margin and return on capital employed for small construction contractors to be 5.71% and18.18%, respectively. Similar metrics for large construction companies were calculated and yielded a value of 3.34% and 25.73%. The disparity noed in profit margins between small and large construction companies is to be expected, because businesses in the construction sector are generally synonymous with low profit margins. Besides, this finding is in line with a recent FTI consulting report (2017) titled *“Is the Construction Industry Ripe for a New Operating Model”.* The report claims that

company turnovers for smaller businesses will likely constitute higher margins compared to larger ones. Similarly, the MHA report (2018) stressed that higher profit margins of 4.5% to12% were observed in smaller main contractors compared to larger construction companies, with an average profit margin hovering between 2.5% to 7.5%

Conversely, liquidity and debt ratio analyses for both large and small-sized construction companies were calculated as illustrated in table 6.3.1 and 6.4.6. The computation revealed a marginal ratio significantly less than 1.0. Arguably, construction is considered to have low liquidity and a high debt ratio because of undercapitalisation. A situation exists where businesses cannot acquire necessary funds or operate within negative working capitals with limited access to external funds. In construction, dependence on regular payments for work done is a crucial aspect in meeting a company's short-term obligations and optimising performance.

The study's quantitative inquiry showed that there is a weak relationship between the percentage agreements of the study participants' perceptions and a company's average operating profit margin, return of capital employed, liquidity and debt ratios with p-values of p =0.01, p =0.06, p= 0.02 and p= 0.06. Results from figures 5.8.5 (a), (b), (c) and (d) illustrated a weak relationship between the study participant's percentage agreements and a contractor's business performance. Results from figures 6.4.5a (a), (b), (c) and (d) showed a weak relationship between the time of honoring small construction contractors' invoices and business performance (.i.e. operating profit margin, return of capital employed, liquidity and debt ratios) with the following p-values: p =0.21, p =0.16, p= -0.03 and p= 0.04. There is a similar relationship to the figures for large construction companies that also showed a weak relationship, as illustrated in figures 6.4.6 (a), (b), (c) and (d)

A possible explanation for the weak relationships is that a contractor's business performance is often determined by various factors such as nature of business, nature of clients, business turnover, operating environment, etc. Moreover, there is a need to bear in mind that the figures used in the correlation analysis were based on the study participant's percentage agreements with a possible margin for errors, although large data was also considered, However, figure 6.4.6 (d) presented a slightly better relationship between time frame for honoring contractors' invoices and large debt

ratios with a p-value of 0.48. The analysis indicated that there is a somewhat statistical relationship between unfair payment practices and a contractor's debt ratio. Indeed, there is reason to believe that in most cases, not paying contractors regularly has a negative tendency towards debt profile.

Comparatively, the views of the study participants in the qualitative inquiry signified that unfair payment practices negatively impacted construction businesses. Interactions and other discussions with participants during the interviews showed that unfair payments affected a construction business's cash flow, a company's debt profile and working capital, etc. Moreover, some participants provided vivid accounts of how unfair payment practices in the industry had affected their businesses. Specific consequences of unfair payment practices identified by the interviewees include poor business reputation, failure to pay salaries/or overheads, loss of staff, low productivity, staff morale, failure to pay rent/mortgages, loss of credit rating, substitution of quality over price, cancellation of apprenticeship programmes and individual wellbeing. For emphasis, one interviewee claimed that *"…. usually I would say it affects contractors' turnover and profits but as well as credibility, failure to pay salaries and annual bonuses, staff retention, distorts future investment into the business and tarnishes relationships with other businesses as well …".*

Overall, it is evident from the study's findings from both the quantitative and qualitative data inquiries, that unfair payment practices have both financial and non-financial impacts on business performance. However, the problem remains deep rooted in the construction industry. Therefore, this study is proposing a framework that seeks to minimise the destructive practices of unfair payment issues in the UK construction industry.

8.2.5 Role of the Client-Contractor Relationship

The study data clearly identified the client-contractor relationship as a major factor that influences deep-rooted unfair practices in the construction industry. The industry is known for both long and short-term business relationships across the supply chain. Perhaps this is due to a traditional and collaborative working culture that is often driven by a sense of securing regular contracts. Eom et al. (2015) opined that client-contractor relationships in construction were usually cordial; but with the client having a better bargaining power over the contractor. In many instances, the contractor

always does the bidding of the client. Indeed, such client-contractor relationships normally have a significant effect on the contracting parties, leading to unfair practices such as compelling the weaker party in the contract to agree to longer payment terms, non-payment of invoices and discounts for prompt payments, etc.

Findings from both the quantitative and qualitative analyses indicate the role of the client-contractor relationship significantly influences unfair payment practices in the construction industry. Results from the questionnaires and the survey show that 83% of the study's participants agreed that consideration of the client-contractor relationship would influence their decision not to initiate legal action against their client, even if there was a clear case of breach of contract. Arguably, most clients in the industry know that their supply chain cannot 'bite the hand that feeds them'. Thus, some categories of clients take advantage of subcontractors and suppliers by perpetrating unfair payment practices intentionally, because they are aware that maintaining continuous relationships is of utmost importance to many contractors and suppliers. In fact, 97% of subcontractors/suppliers often find it difficult to challenge their payment terms or practices because doing so would jeopardise their relationships and risk securing future work. For example, a study interviewee claimed that "*… if a good client delays my payments for months I will not complain too much; though with adverse effects on our business; …because we cherish continuous relationships with my clients …in business clients are king … we dance to their tune …"*

It is obvious from the findings, that many subcontractors and suppliers' main desire is to protect their client-contractor relationships at all costs; even to the detriment of their profits. Therefore, it is fair to argue that both contractors and suppliers are both culpable of unfair payment misdemeanours because of their behavioural attitudes and acceptance of illicit business practices.

In a nutshell, the bulk of unfair payment practice issues in the construction industry lie with the disparity in commercial power that most clients have over contractors and suppliers. This view lends credence to the principal-agent theory discussed in the preceding section in this chapter. The reality remains that the clients (principals) have a better position to negotiate, dictate and impose contractual terms on the contractors (agents). Without doubt, such commercial bargaining power usually leads to a domineering authority over contract payment terms and durations. It is apparent that

the coercive commercial bargaining powers of clients are likely to continue in the foreseeable future in construction industry; despite alternative payment mechanisms and legal regulations with the sole aim of limiting domineering clients' transactional power over contractors and suppliers. Therefore, in the succeeding chapter, the study will put forward the development of a framework that has the potential to minimize unfair payment practices in the construction industry.

CHAPTER 9

Development of a Conceptual Framework for Enhancing Payment Practices

9.1 Introduction

The aim of the study is to develop a conceptual framework for enhancing payment practices, particularly between main contractors to subcontractors and others in the supply chain. As previously discussed, the cascade payment obligation, also known as the hierarchical contractual framework, gives Tier 2 clients (main contractors) a dominant bargaining power over their supply chain. Payment in construction is usually dictated by the client or consultant team with a cascade effect of the main contractor in control of payments to subcontractors and suppliers. The procedure is that the main contractor is reimbursed for the completed works on site and in turn, the main contractor will pay their subcontractor and supplier in the project.

A common deduction from the study findings revealed that a lengthy hierarchical payment structure together with a “work first and get paid later” culture in the construction industry places subcontractors and others in the supply chain at risk of unfair payment practices such as delayed payments, “pay when paid”, disparities in rates, cowboy bullying practices, non-payment of retentions, etc. The financial reality for construction businesses remains that most contractors and others in the supply chain operate on thin profit margins, low working capital and higher debts. Hence, subjecting these categories of construction businesses to unavoidable unfair payment practices makes them susceptible to insolvency risks. Indeed, construction businesses, whether large or small, are highly dependent regarding cash flow to survive. Thus, based on the findings from the study’s literature review and the quantitative, qualitative and archival data inquiries, the study has put forward the development of a framework to enhance fair and prompt payments based on the concept of ring-fencing payments to contractual parties that are more vulnerable to unfair payment practices in the construction supply chain.

9.1 Functionality of the proposed framework

The structure of the proposed framework is designed to enhance fair payment practices as illustrated in figure 9.1. The framework is based on three cardinal principles, namely: (i) ring-fenced project bank accounts; (ii) an independent payment regulator designated the Special Purpose Payment System Regulator (SPPSR); (iii) periodic publicationof main contractors' and other clients' payment performance. For clarity, the framework is different from existing project bank accounts (PBAs) because the framework have mechanisms to internally regulate payments (i.e. the SPPSR); minimise the domineering commercial power of Tier 2 clients and above all, the SPPSR acts as trustee or guarantor for prompt payments to subcontractors and others in the supply chain. Another advantage of the proposed framework over existingPBAs is that the proposed SPPSR will govern, manage and provide oversight in termsof distribution and prompt payment of money due to requisite contractual parties. The framework is designed to ensure that the funds deposited in the ring-fenced accounts are secured, protected and free from insolvency risks. The purpose of SPPSR is to regulate the dictatorial and domineering commercial power of Tier 2 clients (main contractors) over their suppliers that are vulnerable to unfair payment practices.

The proposed SPPSR are to be appointed by contractual parties. There must be an independent regulator likened to an arbitrator or adjudicator overseeing agreements on current construction contracting requirements. The overarching purpose of the proposed framework is to sustain the transparency of information and good payment practices for many contractors and suppliers at the receiving end in the construction supply chain. Apart from the proposed framework, the study recommends that the contractual parties should set up electronic payments such as BACs or CHAPs linked to their bank accounts, that would enable the government and the proposed SPSSR to track and monitor any unwholesome payment actions.

The traditional power of Tier 2 clients (main contractors) to vet and approve invoices submitted by subcontractors and suppliers is not removed by the proposed framework. Rather, once payment applications are submitted by subcontractors or suppliers, the main contractor audits and certifies all the interim valuations, then notifies the SPPSR to release payments due to the contracting parties.

The onus of depositing monies (or amounts due) into a ring-fenced account lies squarely on the clients, but with the consent of main contractor. The notification will contain details of the amount to be paid, retentions that need to be deducted and any pay less notices. The independent regulator will update the account with information given, then the SPPSR will disburse the payments fortnightly (every two weeks) and simultaneously to contractors and suppliers. If the parties receive less from the interim (payment) application, the monies will be held in the account and then paid in subsequent interim payment certificates. Similarly, any retention monies deducted will be held in the same account to reduce insolvency risks to the main contractor and clients. It is imperative to note that the recent UK government Department for Business, Energy and Industry Strategy (2017) claimed that an estimated £4.5 billion of subcontractors' money were held as retentions from 2015 to 2018 but were never released. Therefore, the proposed framework will help to regulate both interim (monthly) and retention payment processes if implemented properly as illustrated in figure 9.1 below.

9.3 Benefits of the proposed framework

Arguably, the benefits of the proposed framework cannot be overemphasised because it has the potentials to enhance certainty, consistency and security of payments to contractors and suppliers that are at the forefront of executing 93% of construction works on sites.

Another benefit of the framework is that it offers protection against insolvency risks in the supply chain, as payments and retentions can still be made to members of the projectteam. For instance, where the contractor or client fails to remit payments and becomes insolvent, the retained balance in the ring-fenced account would be used for other parties to the contract. This will help to reduce disputes and costs associated with latepayments such as interest payments on credit, administrative charges and time lost in chasing payments.

Moreover, with the help of the framework, parties will focus on the project more efficiently and with better value service delivery that would encouragecollaboration and innovation in the industry. The Government and major private clients are targeted as key drivers to use the framework to encourage other categories of clients and contractors for its optimal use.

The initiative is not compulsory to contracting parties; but the suggestion is that those that sign up for the programme will be listed under the UK's "Excellent Construction Contracting Scheme" a proposed programme that will allow major contractors and listed subcontractors to remain in the good book with the UK government. Other positive is that it has potentials to open door for prospective and lucrative government contracts for those that signup for the programme. Comparatively, the proposed framework is similar to the not- for-profit Tenancy Deposit Scheme (TDS) managed by National Housing Associationand regulated by the Housing Act 2004. The TDS is a scheme that safeguards tenancydeposits from disputes between landlords/agents and tenants. Failure to comply withTDS results in severe penalties or fines issued by the Housing Act 2004.

For thorough scrutiny the propose framework was presented and validated by industry practitioners, academics and other stakeholders. In addition, the framework was presented for review at the Association of Researchers in Construction Management (ARCOM) 2019 and CIC 2020 construction conferences (see attached references for proceeding fromthese conferences). Below is figure 9.1 the initial conceptual framework that was developed and presented to construction professionals for validation.

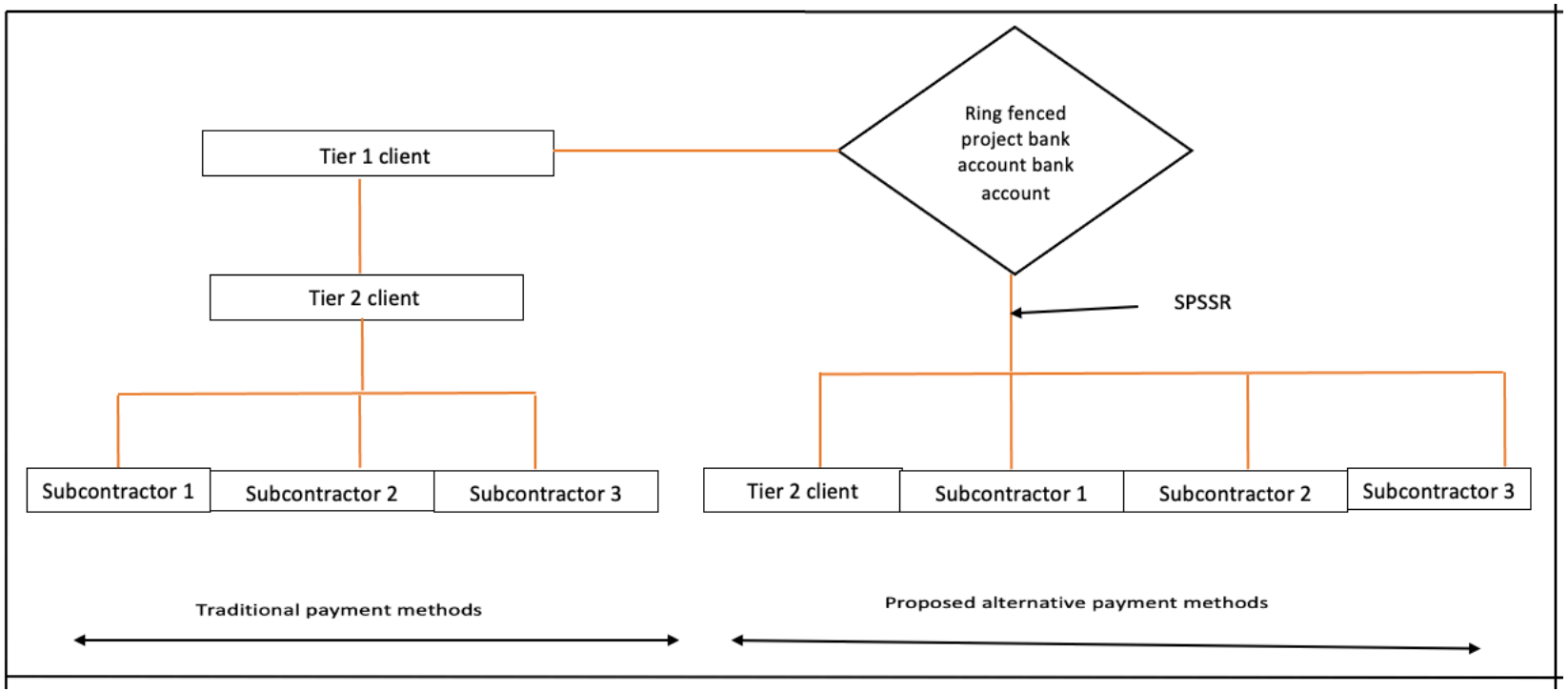


Figure 9.1: Proposed Conceptual Framework for enhancing Payment Practices in the UK construction Industry

Key:

SPSSR- Special Purpose Payment System Regulator

Tier 1 Client – Public / private

Tier 2 Client – Main contractors

Summary of the framework:

- The SPPSR is a necessary independent body, whose key roles are to monitor and facilitate payments, rather than payments being cascaded by the main contractor to the subcontractors and the supply chain.
- The process flow for payment applications from the submission of invoices by the subcontractors/suppliers down to payment is shown by the **red arrow**.
- All submitted invoices for work performed shall be electronic; Tier 2 clients MUST confirm their receipt, approval or rejection within seven days.
- When Tier 2 clients approve subcontractors' invoices, the SPPSR will disburse payment to subcontractors and suppliers within two weeks.
- SPPSR is designed to be legally and financial backed by a jurisdiction or Act of Parliament required to oversee and secure prompt payments for the framework to function optimally.

9.4 Validation of the proposed framework

In addition to the use of conferences to solicit ideas about the proposed framework; the researcher designed set of questionnaire and interview questions to test practicability and validityof the proposed framework using member process checking. Lincoln and Guba (1986) described member process checking as a crucial technique for establishing the credibility of a research process. Both formal and informal member process checking was employed, thus theframework was sent to study participants and other professionals working in theconstruction industry.

During the interview, the propose conceptual framework and brief notes about its functionality was presented to various participants. They were asked to provide their views and opinions regarding the proposed framework in terms of certainty, promptness, and potentiality to enhance fair payment practices in the UK construction industry. The participants that took part in the second set of interviews consist of three quantity surveyors, two project managers, one contract manager, one managing director of a small-sized construction firm and a Professor of Construction, Economics and Management. Below are some key excerpts from the study participants' concerning their views of the proposed framework:

> *"…In principle this is a good idea, but I am concern with implementation in terms of clients' willingness to give up some control of cashflow. Likewise, the same practice by main contractors who critically need cash to meet suppliers and labour' demands..." (Contract Manager)*

> *"…The framework is a brilliant idea … but the process will require robust managing andthere will be administration costs involved in ensuring that the framework requirements are met. This may increase the overall project preliminary costs in terms of the financial management of the framework ..." (Quantity Surveyor-Main contractor)*

> "…*In the UK we have seen many schemes such as the fair payment charter and initiatives widely ignored by the industry, … though the framework presents a potential solution taking lessons from other sectors… particularly where the issue of unethical practices have been observed … your framework is an excellent starting pointin terms of solution to the issue. However, if this is voluntary likethe other payment schemes, I don't think main contractors (the major culprit) will sign up … we need tit for tat rule (force) perhaps via primary legislation. … for your proposal to be effective" (Project Manager-Publicclient)*

"…. The proposed framework is clear and has potential to resolve the current payment issue in the construction industry including return of cash retentions problem to contractors … Ultimately, any scheme that has potentials to improve the cash flow is a positive development..." (Managing Director- Small-sized construction company)

"…The issue will be enforcement, as most subcontractors are ignorant of their contractual rights, and most are afraid to exercise their rights for fear of being called for future work. adjudication costs and relationship issues with the "big boys" … propose changes to current payment systems requires government intervention such as ombudsman for quick access payment cases resolutions..." (Quantity Surveyor-Subcontractor)

"…From what you explained so far and based on the proposed framework, two key aspect were addressed: domineering, balance power and managing the cashflow for the supply chain (suppliers and subcontractors) … While it is clear that the power of the main contractor is needed to approve the work invoices, controlling the cash is key and sometimes essential in order to achieve project objectives…" (Professor of Construction, Economics and Management)

A clear deduction from the validation exercise (see Appendix G, interviews and contribution from two construction conferences) is that the proposed framework has potential to enhance payment practices in the construction industry if it supported or back by law or an act of parliament. However, some participants expressed concerns about the implementation of the framework regarding possible resistance and lack of enforcement my main contractors who are the major culprit of unfair payment practices.

The researcher scrutinised all feedbacks from construction professionals in the validation exercises and were deemed to constructive and valid. Afterward, the proposed framework presented in 9.1 was modified slightly to include the use of statutory or an Act of Parliament for compliance and monitoring as illustrated in figure 9.2.

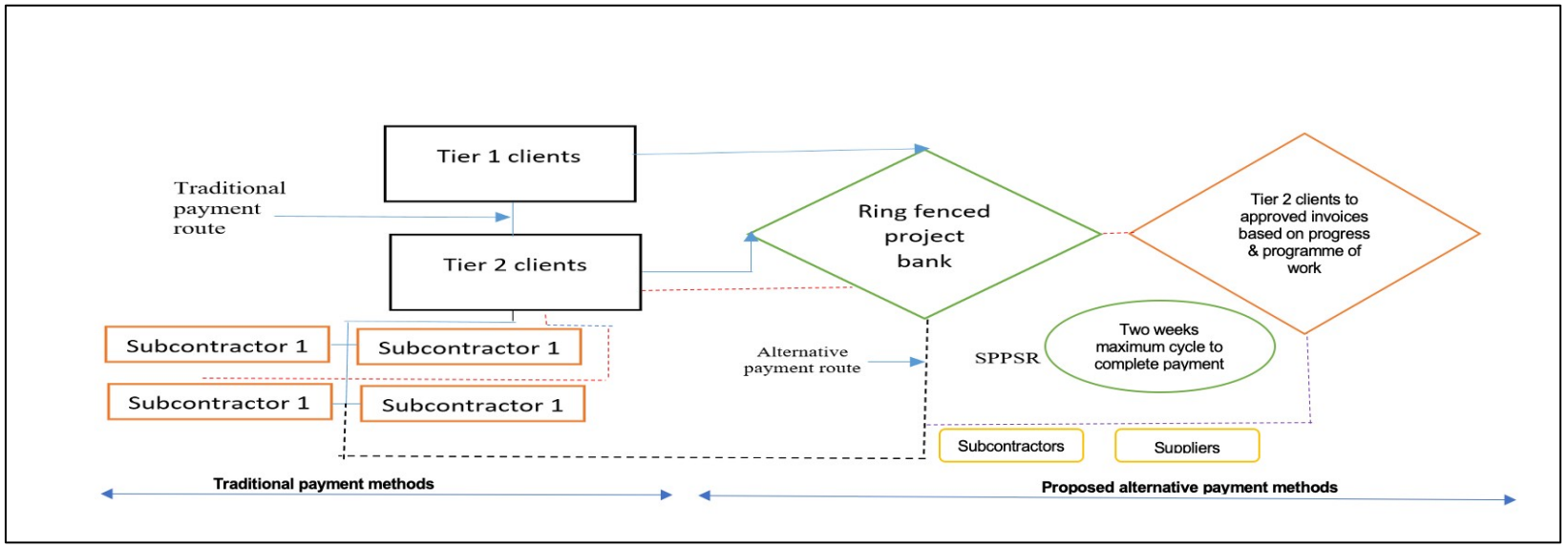


Figure 9.2: Modified Conceptual Framework for enhancing Payment Practices in the UK construction Industry

Key:

SPSSR- Special Purpose Payment System Regulator
Tier 1 Client – Public / private
Tier 2 Client – Main contractors
Summary of the framework:

- The SPPSR is a necessary independent body, whose key roles are to monitor and facilitate payments, rather than payments being cascaded by the maincontractor to the subcontractors and the supply chain.
- The process flow for payment applications from the submission of invoices by the subcontractors/suppliers down to payment is shown by the **red arrow**.
- All submitted invoices for work performed shall be electronic; Tier 2 clients MUST confirm their receipt, approval or rejection within seven days.
- When Tier 2 clients approve subcontractors' invoices, the SPPSR will disburse payment to subcontractors and suppliers within two weeks.
- SPPSR is designed to be legally and financial backed by a jurisdiction or Act of Parliament required to oversee and secure prompt payments for the frameworkto function optimally.
- The proposed framework is similar to the not-for-profit Tenancy Deposit Scheme (TDS) managed by the National Housing Association and regulated by theHousing Act 2004. A detailed explanation of the framework is presented in chapter 9 of the study.

9.5 Administration of the proposed framework

Based on the feedback received, some participants raised the issue of administrative costs for the establishment and operation of the framework, because most parties may not be eager to incur additional expenses of running the proposed framework. Thus, the study suggests that to remove such cost burden on contractual parties, the interest generated from holding the monies in a ring-fenced account could be used as operating costs for the proposed framework.

For instance, under the custodial Tenancy Deposit Scheme (TDS), the interests earned from the deposit are used to administer the scheme for landlords and agents that have themselves signed up to it. The scheme stipulates that parties will decide and agree on the interest rate at the start of the tenancy period (i.e. monthly or yearly) with the bank. For example, the scheme states that 1% interest would be paid from 1st January 2018 to 31 December 2018. This measure is to ensure that such a provision would reduce the financial burden and stress incurred to TDS administers. Hence, a similar approach could be used in the framework, i.e. a situation where a ring-fenced project account is set up to allow interest charges depending on the financial institution used.

9.6 Limitations of the framework

The key limitation to the framework is how to persuade contracting parties to sign up to it. The onus is particularly on convincing Tier 2 clients (main contractors) who are the main culprits of chronic unfair payment practices. This rhetorical question is important because current construction business models allow main contractors to hold on to subcontractors' and suppliers' monies to boost their balance sheets.

Therefore, to overcome this limitation, the proposed framework suggests the inclusion of incentives such as "preferred main contractors list" and "semi-structured framework agreement" that will support or provide a contract guarantee to the main contractors. Perhaps the incentive suggestions could be piloted by the Cabinet Office, Infrastructure and Project Authority to encourage main contractors to sign up to the proposed framework. Moreover, a main contractors' rating system such as gold, silver and bronze for excellent contracting payment practices could also be introduced for prioritised contractors selected for public procurement processes by the UK

Government's Cabinet Office.

Another limitation of the proposed framework is that it overrules privity of contract and the associated data management regulations. As previously discussed in chapter 2, contracts are usually drafted with a single contractual relationship with one of the participants (main contractors) but not with all the parties in the supply chain. For instance, the current provisions prevent subcontractors from seeking direct payments from clients, even when the main contractor defaults and likewise, if the contractor adheres to good practices and makes prompt payments. The framework outweighs this limitation by taking control of the contracts with stringent legal backing that will allow payments to be directly paid to subcontractors or suppliers.

The proposed scheme is designed without the inclusion of a dispute resolution procedure within the framework. In as much as payments and other disputes are included in the existing Alternative Dispute Resolution (ADR) mechanisms, most are deemed to be complex, time consuming and are often not pursued due to the client-contractor relationship. Moreover, the appropriate use of the framework for the size and detail of a project is limited for smaller contracts that are usually carried by sole traders (i.e. sub-subcontractors and suppliers). The specific criteria for the framework are therefore determined to be high value.

CHAPTER 10

Conclusion and Recommendations

10.1 Conclusion

This chapter presents the key findings and conclusions to the study with an emphasis on how the research aim and objectives have been achieved. The main aim of the study is to develop a framework that will enhance fair payment practices in the UK construction industry. In doing so, the study established five objectives that provided a guideline for the researcher to develop a sustainable framework with the potential to enhance fair payment practice issues in the UK construction industry. In addition, the chapter also discusses limitations and suggests sustainable recommendations forthe study problem.

For reference purposes, the first objective of the study was to evaluate the robustness of payment procedures in various standard forms of contracts (SFoCs) used in the construction industry. A common deduction from the study's findings and theories regarding this objective is that payment provisions in SFoCs are often modified and disregarded by parties to contracts. The study discovered that amendments to SFoCs allow clients to embed poor payment practices as a result of principal-agent and relational theories between contractor, subcontractor and the entire supply chain. Findings from both the quantitative and qualitative analyses indicate that the majority of the study's participants agreed that payment provisions in SFoCs do not help to alleviate unfair payment practices due to many factors such as payer attitudes, current payment processes, vulnerability within the supply chain and the client-contractor relationship.

The second objective was to determine the scale of unfair payment practices between tiers of construction clients. Findings from the study's archival data, qualitative and quantitative analyses revealed that unfair payments practices are an endemic problem and distort the cash flow of the entire supply chain in the industry. Late payment remains a common practice for all tiers of construction clients followed by retentions

and “pay when paid” and a range of other practices. However, the quantitative findings revealed that unfair payment practices were predominant, with main construction contractors acting as clients to subcontractors and other suppliers. For instance, paying a fee to be retained in a client’s supply chain list, lower interest on delayed payments, spurious deductions, discounts on retention release, supply chain bullying and elongated payment duration terms were discovered to be very common among Tier 2 clients.

Furthermore, findings from the archival analyses indicated that Tier 2 clients (main contractors) were the main drivers for poor payment performance and terms, with an average of 47 days and 86% invoices paid within 60 days. For example, the experience of Carillion Plc’s demise and the practices of many others, show that the routine withholding of invoices and extending of payment terms for their supply chains are common commercial strategies employed by this category of client to boost their weak balance sheets and profit margins. Also, the findings showed that tier 3 clients are worse payers due to the cascade effect of the upper tiers in delaying invoices or not paying others on time. All in all, the study revealed that the construction industry has a reputation for longer payment terms with an average of 31 to 50 days and 51 to 90 days, respectively.

The third objective was to identify contemporary causes of unfair payment practices in the UK construction industry. The study identified 23 contemporary causes of unfair payment practices and grouped them into five main categories, namely cultural, industrial, technical, regulatory and other causes. The findings concerning this objective revealed that most of study’s participants agreed some clients used unfair payment practices as a commercial (cashflow) strategy to squeeze their suppliers to boost their balances and financial performance.

Certainly, this strategy has opened a line of credit for many businesses to compete and enter the construction sector, with other bigger companies adopting similar practices. Other causes that were indicated by the study’s participants includes the industry norm ‘work first get paid later’, client-contractor relationship and the use of adhesion contracts. Generically, it is fair to argue that the use of cashflow strategy

is spearheaded by the unwilling attitudes of clients and underpinning power of client/contractor supplychain relationship.

The fourth objective was to ascertain if unfair payments influenced a contractor's business performance. As previously discussed in Chapter 2, measuring business performance is a vague concept given the list of indicators or metrics used to evaluate the performance of a business or industry. However, the study adopted traditional accounting practices based on the use of financial ratios to measure a contractor's business performance.

Findings from the quantitative inquiry revealed a weak relationship between perceived unfair payment practices and business performance. The correlation between the study participants' agreements and companies' average operating profit margins, return of capital employed, liquidity and debt ratios illustrate a weak relationship; with p-values of p =0.01, p =0.06, p= 0.02 and p= 0.06. However, the correlation analysis based on archival data somewhat revealed a relationship between perceived unfair payment practices and a contractor's debt ratio significantly at p=0.48. In reality, there is a tendency for a contractor's debt to increase because of late or unfair payments, spurring the need to borrow money to survive and continue trading.

On the other hand, the study qualitative inquiry reveals that there is a snowball effect of unfair payment practices on construction businesses. Interviewees claim that unfair payment have direct consequences on contractor's profit margins, cashflow, working capital and other indirect effects such as failure to pay salaries/overheads, low productivity, loss of credit rating, stress, reputational damage, failure to pay salaries/overheads, substitution of quality over price, etc.

The fifth objective was to evaluate the role of the client-contractor relationship regarding unfair payment practices in the UK construction industry. Findings from both the quantitative and qualitative analyses showed that most study participants agreed that the client-contractor relationship significantly influenced unfair payments issues in projects. The majority of study participants affirmed that maintaining good working relationships with clients, main contractors, subcontractors or suppliers often compelled them to forgo or accept poor practices that favours their clients, particularly

Tier 2 clients (main contractors). This is mainly due to the fear of damaging commercial relationships and risks to securing future work. Findings regarding this objective lend credence to the principal-agent theory discussed in Chapter 3 of the literature review, suggesting clients (principal) have better bargaining power over their agents (sub/contractors), thus using their commercial power to perpetuate unfair payments.

In summary, the key findings from the study suggest that the bulk of unfair payment practices in the construction industry lie with Tier 2 clients (main contractors) and that there is an overwhelming perception that if unfair payment practices were curtailed within this category of clients, the entire problem would be significantly minimised. Therefore, the study puts forward a framework that could significantly enhance fair payment practices between main contractors, their subcontractors and others in the supply chain. As discussed in Chapter 9, the framework has the potential to curb the domineering commercial powers of Tier 2 clients by securing payments into a project account that would be controlled by a Special Purpose Payment System Regulator (SPSSR).

10.2 Limitations

The study is limited in several ways. For example, the study collected data about unfair payment practice from clients (public and private), consultants, main contractors and subcontractors working in the UK construction industry. However, extra efforts were made by the researcher to obtain lower tier's views (particularly sub-subcontractors, suppliers, vendors, and so forth), but was not successful due to their periodic visits on sites and difficulties in getting responses from them. Nonetheless the study considered subcontractors' views as representative of the lower tiers' opinions and perspectives on unfair payments practices.

Moreover, the companies' financial information obtained from Companies House UK was limited to 34 out 179 construction companies that were considered for the study. The difficulty was that most participants did not have their companies' accounts and profit and loss statements filed in Companies House and made available on their website. There was a similar experience during the archival analyses, whereby the

researcher obtained financial data from 62 companies including both large and medium-sized contractors. Given that there are more than 300,000 construction businesses in the UK, not all of the information was available. Moreover, the majority did not want to take part in the study due to their company's reputation and discretion over payment practices. However, the combination of companies' data from both the questionnaire and the interviews proved to be sufficient to carry out the statistical analysis regarding unfair payments and a contractors' business performance.

Another limitation of the study stemmed from the fact that a severe financial crisis and uncertainties such as Brexit and COVID-19 were experienced during the research period that significantly impacted most companies' finances. Moreover, physical validation was not possible because of Governmental restrictions on movement due to COVID-19. Therefore, due to time factors, the validation of the framework was carried out through sending postal questionnaires and emails to participants who were familiar with the study's theme. This proved to be an effective method in validating the framework and the overall findings of the research.

Moreover, it was observed during the qualitative and quantitative data collection that some participants were not sincere about their company's payment terms and true financial position. However, the research overcame this barrier by conducting cross-checking references with archival data on company payment performance and practices. This was observed during the interviews when the researcher asked about payment terms. Some participants were being economical with the truth, as they did not want to tarnish the image of their company in public or to divulge the real nature of unfair payments in the industry.

10.3 Recommendations

Based on the study's findings and overall conclusions, this research puts forward the following recommendations:

- There is a need to encourage the use of the proposed framework as a means of addressing unfair payment practices between Tier 2 clients, subcontractors and other tiers in the supply chain.

- The study recommends that there should be enough education and training programmes in contract matters for stakeholders and practitioners, to enable them to fully understand and administer different obligations and rights that may arise under payment sections in contract forms or legislation used.
- Moreover, there is the need to design a comprehensive database for contractors that capture payment practices in the UK in term of inability (“I cannot”) and unwillingness (“I would not”) to pay. This database will be useful to understand the underlying nature of a company’s payment and cashflow position. This would be helpful for other businesses to negotiate better terms in forming contracts.
- Government and practitioners in the industry need to introduce proactive measures to strengthen existing legislations and provisions to promote fair payment practices in the construction industry. For instance, enforcement to non-compliance, automatic interest for late payers, a company’s tax incentives and restricted access to public sector contracts, etc.
- There should be historical payment data of ‘naming and shaming’ that would enable clients and stakeholders understand a contractor’s payment performance.
- The researcher recommends that further studies should be carried out to evaluate the role of the client-contractor relationship regarding unfair payment practices in the UK construction.

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APPENDIX A – Questionnaire Survey 1

Please read each question carefully and tick the appropriate box that best reflects your opinion, perception and judgement concerning unfair payments practices in the UK construction industry. Please endeavour to answer every question honestly and do not offer biased responses to portray your company or the construction industry off in a good light. Your anonymity and confidentiality are assured.

In the context of unfair payment practices in construction please provide your judgement regarding extent to which you agree or disagree with the following statements:

1. Unfair payment practices is a persistence problem to construction contractors
   - ☐ Very strongly agree
   - ☐ Strongly agree
   - ☐ Agree
   - ☐ Disagree
   - ☐ Strongly disagree
   - ☐ Very strongly disagree
   - ☐ Unsure

2. Unfair payment practices is rampant because of **"I cannot"** pay attitude of clients
   - ☐ Very strongly agree
   - ☐ Strongly agree
   - ☐ Agree
   - ☐ Disagree
   - ☐ Strongly disagree
   - ☐ Very strongly disagree
   - ☐ Unsure

3. Unfair payment practices exists due to **" I would not"** pay attitude of clients.
   - ☐ Very strongly agree
   - ☐ Strongly agree
   - ☐ Agree
   - ☐ Disagree
   - ☐ Strongly disagree
   - ☐ Very strongly disagree
   - ☐ Unsure

4. Clients strategic plan to boost cashflow exacerbate unfair payments
   - ☐ Very strongly agree
   - ☐ Strongly agree
   - ☐ Agree
   - ☐ Disagree
   - ☐ Strongly disagree
   - ☐ Very strongly disagree
   - ☐ Unsure

5. Payment provisions in standard forms of contracts (SFoCs) helps to minimise Unfair payment occurrence
   - ☐ Very strongly agree
   - ☐ Strongly agree

- Agree
- Disagree
- Strongly disagree
- Very strongly disagree
- Unsure

6. SFoCs (JCT/NEC/FIDIC) have sufficient mechanisms to protect contractors' from unfair payment
   - Very strongly agree
   - Strongly agree
   - Agree
   - Disagree
   - Strongly disagree
   - Very strongly disagree
   - Unsure

7. 28 days payment period stipulated by various SFoCs help to minimise unfair payments
   - Very strongly agree
   - Strongly agree
   - Agree
   - Disagree
   - Strongly disagree
   - Very strongly disagree
   - Unsure

8. Payments procedures stipulated within SFoCs are not robust enough to minimise unfair payment
   - Very strongly agree
   - Strongly agree
   - Agree
   - Disagree
   - Strongly disagree
   - Very strongly disagree
   - Unsure

9. Contractors are reluctant to use penalties stipulated in regulations, SFoCs and charterscconcerning unfair payments because of fear that will damage their business relationship
   - Very strongly agree
   - Strongly agree
   - Agree
   - Disagree
   - Strongly disagree
   - Very strongly disagree
   - Unsure

10. Unfair payment problems varies between tiers of construction clients
    - Very strongly agree
    - Strongly agree
    - Agree
    - Disagree
    - Strongly disagree
    - Very strongly disagree
    - Unsure

11. Unfair payment practices are frequent among Tier 1 clients (.i.e client to main contractor)
    - Very strongly agree
    - Strongly agree
    - Agree
    - Disagree
    - Strongly disagree
    - Very strongly disagree
    - Unsure

12. Unfair payment practices are frequent among Tier 2 clients (.i.e main contractor tosubcontractors)
    - Very strongly agree
    - Strongly Agree
    - Agree
    - Disagree
    - Strongly disagree
    - Very strongly disagree
    - Unsure

13. Unfair payments practice are frequent among Tier 3 clients (.i.e subcontractors to sub-subcontractors/ or supplier)
    - Very strongly agree
    - Strongly agree
    - Agree
    - Disagree
    - Strongly disagree
    - Very strongly disagree
    - Unsure

14. Unfair payments influences overall contractors' financial performance
    - Very strongly agree
    - Strongly agree
    - Agree
    - Disagree
    - Strongly disagree
    - Very strongly disagree
    - Unsure

15. Unfair payments significantly influence contractors' profitability
    - Very strongly agree
    - Strongly agree
    - Agree
    - Disagree
    - Strongly disagree
    - Very strongly disagree
    - Unsure

16. Unfair payment is a threat to contractors' business survival
    - Very strongly agree
    - Strongly agree
    - Agree
    - Disagree
    - Strongly disagree

- Very strongly disagree
- Unsure

17. Unfair payments do not significantly influence contractor
    - Very strongly agree
    - Strongly agree
    - Agree
    - Disagree
    - Strongly disagree
    - Very strongly disagree
    - Unsure

18. Emerging digital technologies (such as BIM, Agresso, et) have potentials to minimise unfair payments compared to traditional payment procedures in the construction industry
    - Very strongly agree
    - Strongly agree
    - Agree
    - Disagree
    - Strongly disagree
    - Very strongly disagree
    - Unsure

19. Could you indicate on average how long does it takes for contractor/subcontractors toreceive payment from clients.

    - 15 to 30 days
    - 30 to 50 days
    - 50 to 90 days
    - 90 to 120 days
    - Above 120 day

20. Please indicate type(s) of projects with common (frequent) cases of unfair payment.
    - Privately funded projects.
    - Government funded projects.
    - Public-private partnership projects.

21. From your experience rate the extent of your agreement to the following causes of unfair payment practices using; 5= very strongly agree, 4=strongly agree, 3=agree, 2= Disagree,1= Strongly disagree, 0 =Very Strongly disagree and was assigned unsure

S/N	**Cultural -related causes**	5	4	3	2	1
1	Client-contractor relationship					
2	Pay when paid					
3	I “would not” pay attitude of client					
4	I “cannot” pay attitude of client					
5	Prevailing culture					
S/N	**Industrial-related causes**	5	4	3	2	1
1	Cow bullying					
2	Corruption					
3	Supply chain finance					
4	Low barriers to entry and exist					
5	Industry norm ‘work first get paid later”					

S/N	Technical -related causes	5	4	3	2	1
1	Defective works					
2	Delay in approval of works					
3	Errors in submitting claims and valuation work					
4	Insufficient documentation and information					
S/N	**Regulatory -related causes**	5	4	3	2	1
1	Complex payment legislation					
2	Ambiguities within standard forms of payment provisions					
3	Multi-tiered hierarchical structure of contractual framework					
4	Complex payment legislation					
5	Widespread use of adhesion contracts 'take or leave it'					
S/N	**Other -related causes**	5	4	3	2	1
1	Lack of transparency					
2	Exploiting fierce competition among subcontractors					
3	Undue commercial interest					
4	Administration inefficiencies					
5	Cashflow strategy					

22. From the list below; please rate effects of unfair payments on your projects -on scale of1 to 5, (with 1= lowest and 5= highest):

EFFECTS	1	2	3	4	5
Creates cash flow difficulties					
Diminishes organizational reputation					
Affects the administration and management of company					
Results bullying to construction firms					
Increases credit crunches					
Result to liquidation or bankruptcy of a project					

Section B; General Information of Participants

A. Please indicate the number of years you have been working in the construction industry.
   - 1 – 5 years
   - 6 – 10 years
   - 11 – 15 years
   - 16 – 20 years
   - 21 – 25 years
   - More than 25 years

B. Please indicate your profession al designatory
   - Project Manager
   - Quantity Surveyor
   - Architect
   - Engineer
   - Contractor
   - Subcontractor
   - Client

C. Please indicate nature of business your construction company is involved in;
   - Residential building
   - Commercial building
   - Property development
   - Infrastructure
   - Heavy construction and others

D. Please indicate the very approximately the type of contract that your company is involved with;
   - JCT forms
   - FIDIC forms
   - NEC forms
   - Other Standard forms of contracts
   - Bespoke forms

E. If your member of profession body, please indicate the designator letters that you hold; you are free to tick more than one box if appropriate
   - ACIOB
   - MCIOB
   - MRICS
   - MRIBA
   - Others

Thanks for filling out this questionnaire

APPENDIX C- Interview

The purpose of the interview is to seek your opinion about unfair payment practices in the construction industry.

Please answer the following questions based on your experience in the context of unfair payments to construction contractors.

1. What is your view about chronic unfair payment problem in the UK construction industry?

2. What are your thoughts about client's interest concerning unfair payment issues? Do you think they are sympathetic or deliberate?

3. Do you believe that clients are indifference to unfair payments practices in construction?

4. How will you describe clients' attitude to unfair payments problems in the construction industry?

5. Most literatures suggest that current payments practices in the construction industry (such as payment provision in standard forms of contractors, project bank account and other administrative measures) are ineffective in resolving unfair payments practices in the construction industry. Do you agree?

6. Certainly, unfair payment affects contractor's cash flow. Apart from that, can you identify other aspect of business performance that unfair-payments and its practices affect most? e.g. profit, credit rating, cost of doing business,.etc

7. Unfair payments seem to vary between different tiers of construction clients' in the industry. From your experience which category of contractors are worst hit by unfair payment problems?

8. Apart from cash flow problems tell me how unfair payment affect your business negatively

9. Can you give some examples of how project attributes such as size, scope of works, contract sum, nature of clients, etc influences unfair payment?

APPENDIX D – PARTICIPANT INFORMATION SHEET

You are being invited to take part in research of development of a framework to minimise unfair payment practice in the UK construction industry. Laura Lazaro Peter at Coventry University is leading this research. Before you decide to take part, it is important you understand why the research is being conducted and what it will involve. Please take time to read the following information carefully.

What is the purpose of the study?

The aim(purpose) of the study is to develop a theoretical framework to minimise unfair payment practices to subcontractors and suppliers in the UK construction industry. Recent UK government report identified late payment, "pay when paid" culture, withholding retentions, disparagingly rate of items, imposition of rates, and exclusion of provisional remedy as common unfair payment practices bedevilling the UK construction industry.

The study objectives are:

1. To evaluate robustness of payment procedures in various standard forms of contract used in the UK construction industry.
2. To determine the scale of unfair payment practices between tiers of construction clients.
3. To identify contemporary causes of unfair payment in the UK construction industry.
4. To ascertain if unfair payment practices influence contractors' business performance.
5. To develop a theoretical framework that will help minimise unfair payment practices in the UK construction industry.

Why have I been chosen to take part?

You are invited to participate in this study because you have experience of industry's payment practices.

What are the benefits of taking part?

By sharing your experiences with us, you will be helping Laura Lazaro Peter and Coventry University to better understand the payment practices in the UK construction sector.

Are there any risks associated with taking part?

This study has been reviewed and approved through Coventry University's formal research ethics procedure. There are no significant risks associated with participation.

Do I have to take part?

No – it is entirely up to you. If you do decide to take part, please keep this Information Sheet and complete the Informed Consent Form to show that you understand your rights in relation to the research, and that you are happy to participate. Please note down your participant number (which is on the Consent Form) and provide this to the lead researcher if you seek to withdraw from the study at a later date. You are free to withdraw your information from the project data set at any time. You should note that your data may be used in the production of formal research outputs (e.g. journal articles, conference papers, theses and reports) prior to this date and so you are advised to contact the university at the earliest opportunity should you wish to withdraw from the study. To withdraw, please contact the lead researcher (contact details are provided below).Please also contact the Research Support Office research.eec@coventry.ac.uk and +44 (0)24 77658278. You do not need to give a reason. A decision to withdraw, or not to take part, will not affect you in any way.

What will happen if I decide to take part?

You will be asked a number of questions regarding construction industry and payment practices, terms, performance, etc. The questionnaire or interview will take place in a safe environment at a time that is convenient to you. Ideally, we would like to audio record your responses (and will require your consent for this), so the location should be in a fairly quiet area. The questionnaire or interview should take around 15- 30 minutes to complete.

Data Protection and Confidentiality

Your data will be processed in accordance with the General Data Protection Regulation 2016 (GDPR) and the Data Protection Act 2018. All information collected about you will be kept strictly confidential. Unless they are fully anonymised in our records, your data will be referred to by a unique participant number rather than by name. If you consent to being audio recorded, all recordings will be destroyed once they have been transcribed. Your data will only be viewed by the researcher/research team. All electronic data will be stored on a password-protected computer file. All paper records will be stored in a locked filing cabinet. Your consent information will be kept separately from your responses in order to minimise risk in the event of a data breach. The lead researcher will take responsibility for data destruction and all collected data will be destroyed on or before

Data Protection Rights

Coventry University is a Data Controller for the information you provide. You have the right to access information held about you. Your right of access can be exercised in accordance with the General Data Protection Regulation and the Data Protection Act 2018. You also have other rights including rights of correction, erasure, objection, and data portability. For more details, including the right to lodge a complaint with the Information Commissioner's Office, please visit www.ico.org.uk. Questions, comments and requests about your personal data can also be sent to the University Data Protection Officer - enquiry.igu@coventry.ac.uk

What will happen with the results of this study?

The results of this study may be summarised in published articles, reports and presentations. Quotes or key findings will always be made anonymous in any formal outputs unless we have your prior and explicit written permission to attribute them to you by name.

Making a Complaint

If you are unhappy with any aspect of this research, please first contact the lead researcher or If you still have concerns and wish to make a formal complaint, please write to director os studies as seen below:

Dr Andrew Arewa

Director of Studies (DOS)

Faculty of Engineering & Computing John Laing Building

Room 133

Tel: 02477657710

E-mail: andrew.arewa@coventry.ac.uk

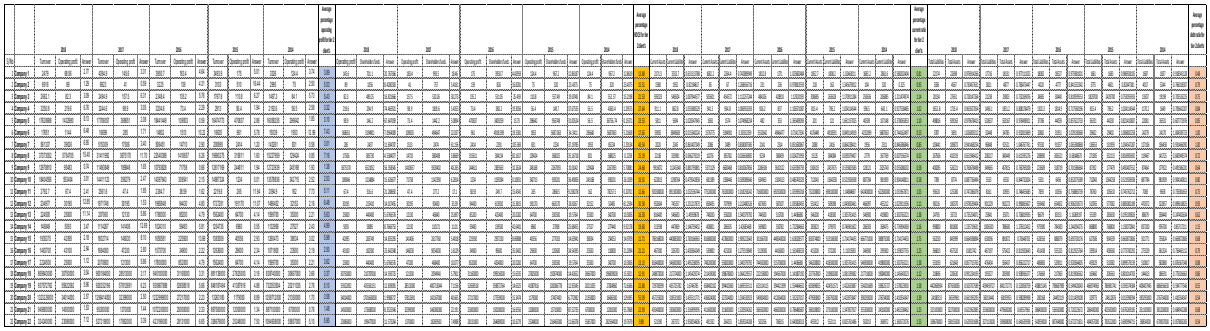
Laura Lazaro Peter Doctoral Researcher Coventry University Coventry CV1 5FB

Email: peterl@uni.coventry.ac.uk

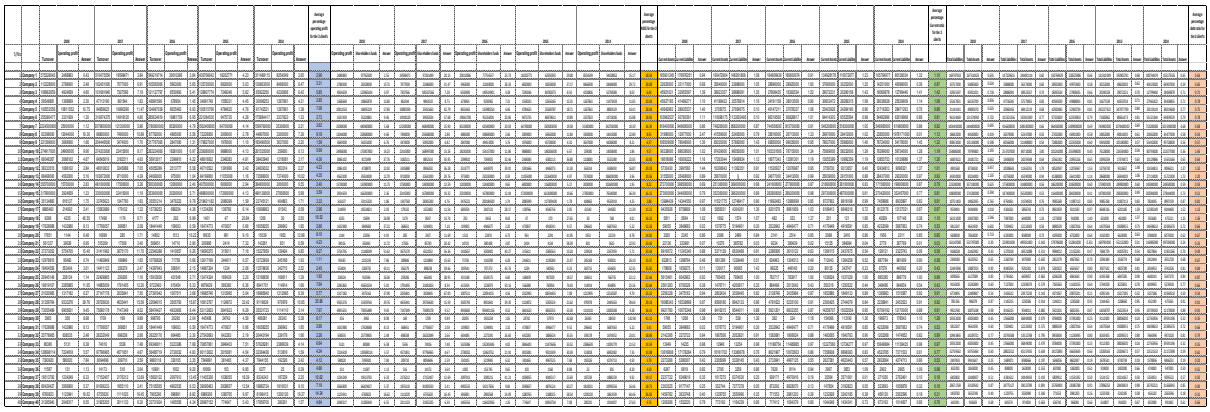
In your letter please provide information about the research project, specify the name of the researcher and detail the nature of your complaint

Appendix E

List of large (main) contractors' business performance in the UK construction industry



Appendix F List of small and medium sized contractors (SME's) business performance in the UK construction industry



Appendix G- Quantitative data analysis

QUESTIONNAIRE SURVEY-1	Unfair payment is a persistence problem to construction contractors QN.1	Unfair payment is rampant because of "I cannot" pay attitude of clients. QN.2	Unfair payment exists due to "I would not" pay attitude of clients. QN.3	Clients strategic plan to boost cash flow exacerbate unfair payment problems. QN.4	Payment provisions in standard forms of contracts (SFoCs) helps to minimise unfair payment occurrence QN.5	SFoCs (JCT/NEC/FIDIC) have sufficient mechanisms to protect contractors' from unfair payment problem QN.6	28 days payment period stipulated by various SFoCS help to minimise unfair payment problem QN.7	Payment procedures stipulated within SFoCs are not robust enough to minimise unfair payment. QN.8	Contractors are reluctant to use penalties stipulated in regulations, SFoC and charters concerning unfair payment because of fear that it will damage their business relationship QN.9	Unfair payment problems varies between tiers of contractors QN.10	Unfair payment problems are frequent among Tier 1 contractor (.i.e. client to main contractor) QN.11	Unfair payment problems are frequent among Tier 2 contractor (.i.e. main contractor to subcontractors) QN.12	Unfair payment problems are frequent among Tier 3 contractor (.i.e. subcontractors to other subcontractors QN.13	Unfair payment influences overall contractors' financial performance. QN.14	Unfair payments significantly influences contractors' profitability QN.15	Unfair payment is a threat to contractors' business survival. QN.16	Unfair payment do not significantly influence contractor profitability. QN.17	Emerging digital technologies have potential to minimise late payments compared to traditional payment procedures in the construction industry QN.18	Sum of responses from study participants
Q from P1	5	5	3	5	2	2	2	4	5	5	3	5	3	5	5	4	0	3	66
Q from P2	3	3	4	3	3	2	2	5	4	4	3	5	3	4	3	3	2	-	56
Q from P3	5	3	4	5	1	1	2	5	5	4	3	5	2	5	5	4	0	0	59
Q from P4	2	2	2	3	1	1	0	3	4	5	2	4	2	3	3	5	2	2	46
Q from P5	4	2	2	3	3	3	3	2	5	5	2	4	2	4	4	4	2	3	57
Q from P6	3	2	2	-	3	3	3	2	4	4	2	3	3	3	2	3	2	0	44
Q from P7	3	2	2	2	4	4	2	2	5	5	1	4	1	4	3	3	2	1	50
Q from P8	3	5	3	3	4	5	5	2	5	5	3	4	2	4	4	4	1	3	65
Q from P9	3	3	3	3	4	2	2	1	4	3	3	4	3	4	2	5	2	0	51
Q from P10	2	2	2	2	3	3	3	2	3	3	2	3	2	1	3	3	2	1	42
Q from P11	2	2	2	2	3	2	3	3	5	3	3	5	4	4	3	5	0	2	53
Q from P12	4	2	2	4	4	4	4	2	4	4	2	3	2	4	4	4	2	1	56
Q from P13	5	4	5	5	1	1	2	4	5	5	2	4	3	3	3	5	1	-	58
Q from P14	2	2	-	2	3	3	3	1	3	3	-	3	-	3	3	3	2	-	36
Q from P15	5	2	3	4	3	2	2	2	4	3	3	2	4	3	3	2	1	2	50
Q from P16	4	3	3	3	3	2	2	2	3	3	3	4	3	3	3	3	2	-	49
Q from P17	3	2	4	3	2	2	2	3	4	4	2	4	4	3	4	4	1	-	51
Q from P18	3	2	2	3	3	2	3	2	5	5	3	2	-	3	3	2	2	0	45
Q from P19	-	2	2	-	4	4	4	2	1	4	2	3	-	3	2	3	1	2	39
Q from P20	5	5	3	5	1	1	0	4	5	5	3	4	3	5	4	5	1	2	61
Q from P21	5	3	5	5	2	2	2	3	5	5	4	2	4	4	3	4	2	1	61
Q from P22	3	3	3	3	3	3	3	2	3	4	4	2	4	3	3	5	2	1	54
Q from P23	5	5	3	5	2	2	2	4	5	5	4	2	3	5	4	5	2	-	63
Q from P24	4	2	2	4	4	4	4	2	4	4	2	3	2	4	4	4	2	3	58
Q from P25	5	4	5	5	1	1	2	4	5	5	2	4	3	3	3	5	1	-	58
Q from P26	3	2	3	3	2	2	3	2	4	3	3	2	3	4	3	4	2	1	49
Q from P27	4	2	4	2	2	1	2	3	4	4	4	2	4	5	4	4	1	1	53
Q from P28	5	5	3	5	2	2	2	4	5	5	4	1	4	5	5	4	0	3	64
Q from P29	3	3	4	3	3	2	2	5	4	4	3	4	3	4	3	3	2	-	55
Q from P30	5	3	4	5	1	1	2	5	5	4	3	5	2	5	5	4	0	1	60
Q from P31	4	3	4	5	4	2	3	3	5	5	2	4	2	4	3	3	1	2	59
Q from P32	4	3	4	5	2	2	2	3	5	4	2	5	2	4	3	3	1	0	54
Q from P33	4	2	5	4	3	3	3	2	5	4	4	2	4	4	3	4	1	0	57
Q from P34	5	5	3	5	2	2	2	4	5	5	3	2	4	5	5	4	0	3	64
Q from P35	3	3	4	3	3	2	2	5	4	4	3	4	3	4	-	3	2	-	52
Q from P36	5	3	4	5	1	1	2	5	5	4	3	5	3	4	5	4	0	3	62
Q from P37	5	5	3	5	2	2	2	4	5	5	3	3	2	3	5	5	0	3	62
Q from P38	3	3	4	3	3	2	1	4	4	4	3	4	2	4	3	-	1	-	48
Q from P39	5	5	3	5	2	2	2	4	5	5	3	5	2	5	5	4	0	3	65
Q from P40	3	3	4	3	3	2	2	5	4	4	3	5	2	4	3	3	2	-	55
Q from P41	5	3	4	5	1	1	2	5	5	4	3	5	2	5	5	4	0	3	62
Q from P42	2	2	-	2	3	3	3	-	3	3	2	3	-	2	3	3	2	-	36
Q from P43	3	1	2	3	3	3	2	2	3	4	3	2	-	3	2	3	2	-	41
Q from P44	4	3	3	3	3	3	3	2	3	3	3	4	3	3	3	3	2	1	52
Q from P45	3	2	4	1	2	2	2	2	4	4	3	4	-	5	4	4	1	2	49
Q from P46	2	2	2	3	3	2	3	3	5	4	3	4	-	3	3	2	2	0	46
Q from P47	4	2	2	4	4	4	4	2	4	4	2	4	3	4	4	4	2	2	59
Q from P48	5	4	5	5	1	1	2	4	5	5	3	4	3	3	3	5	1	-	59
Q from P49	5	3	3	3	3	4	4	2	4	4	3	4	3	3	3	4	2	-	57
Q from P50	5	5	3	5	2	2	2	4	5	3	3	1	3	4	4	5	0	3	59
Q from P51	3	3	4	3	3	2	2	4	4	4	3	5	3	3	3	3	2	-	54
Q from P52	5	3	5	5	2	2	2	3	5	4	4	1	4	3	3	3	2	3	59
Q from P53	3	2	3	3	3	3	2	2	3	-	-	-	-	3	3	3	2	-	35
Q from P54	3	2	4	4	2	2	2	3	5	3	3	3	-	3	3	3	2	3	50
Q from P55	4	2	4	4	3	3	3	2	4	5	4	2	4	4	4	4	1	2	59
Q from P56	4	3	4	5	4	2	3	3	5	2	3	4	2	3	3	3	2	-	55
Q from P57	5	2	5	5	2	2	2	3	4	4	3	4	3	3	3	3	2	1	56
Q from P58	3	3	5	4	2	2	2	3	4	3	3	3	-	3	3	3	2	0	48
Q from P59	3	2	4	4	2	1	1	4	4	5	5	5	0	3	3	4	1	1	52
Q from P60	4	3	4	5	2	2	2	3	4	3	3	3	3	4	3	4	1	1	54
Q from P61	4	4	1	4	3	2	2	3	3	4	3	4	3	4	4	4	2	2	56
Q from P62	4	5	1	4	2	2	2	4	3	4	3	4	3	4	4	4	1	3	57
Q from P63	4	4	2	4	2	2	2	4	3	4	4	4	4	4	4	4	0	1	56
Q from P64	4	2	4	4	2	2	2	4	4	3	1	4	3	4	4	4	1	2	54
Q from P65	2	2	-	2	3	3	3	2	3	3	2	3	-	3	3	3	2	-	39
Q from P66	2	2	2	3	1	1	0	3	4	5	2	4	2	3	3	5	2	2	46
Q from P67	4	2	2	4	4	4	4	2	4	4	2	3	2	4	4	4	2	3	58
Q from P68	5	4	5	5	1	1	2	4	5	5	2	4	3	3	3	5	1	-	58
Q from P69	4	3	3	3	3	3	3	2	3	3	3	3	3	3	3	3	2	1	51
Q from P70	3	2	4	1	2	2	2	3	4	4	3	4	-	5	4	4	1	3	51
Q from P71	3	2	2	3	3	2	3	3	5	4	3	2	-	3	3	2	2	0	45
Q from P72	5	5	3	5	2	2	2	4	5	5	4	2	4	5	5	4	0	2	64
Q from P73	3	3	4	3	3	2	2	5	4	4	3	5	3	4	3	3	2	-	56
Q from P74	5	3	4	5	1	1	2	5	5	4	3	5	2	5	5	4	0	3	62
Q from P75	4	2	2	4	4	4	4	2	4	4	2	3	2	4	4	4	2	3	58
Q from P76	5	4	5	5	1	1	2	4	5	5	2	4	3	3	3	5	1	-	58
Q from P77	3	2	2	-	3	3	3	2	4	4	2	2	3	3	2	3	2	4	47
Q from P78	3	2	2	2	4	4	2	2	5	5	1	3	3	4	3	3	2	1	51
Q from P79	5	5	3	5	2	2	2	4	5	5	3	5	3	5	5	4	0	3	66
Q from P80	3	3	4	3	3	2	2	5	4	4	3	5	3	4	3	3	2	-	56
Q from P81	5	3	4	5	1	1	2	5	5	4	3	5	2	5	5	4	0	3	62
Q from P82	2	2	2	2	3	2	3	2	5	3	3	5	3	4	3	4	2	2	52
Q from P83	4	2	2	4	4	4	4	3	4	4	2	3	4	4	4	4	1	3	60
Q from P84	5	3	5	4	1	1	2	4	5	5	3	4	5	3	3	5	1	-	59
Q from P85	5	2	5	4	1	1	1	4	5	5	4	4	0	4	4	4	1	0	54
Q from P86	4	2	4	4	3	3	3	1	4	4	4	2	3	4	4	4	1	1	55
Q from P87	2	2	-	2	2	3	3	2	3	3	2	3	-	3	3	3	2	-	38
Q from P88	2	2	2	3	1	1	0	3	4	5	2	4	2	3	3	5	2	2	46
Q from P89	3	2	2	3	3	3	2	2	3	4	3	3	-	3	1	3	2	-	42
Q from P90	4	3	3	3	3	3	3	2	3	3	3	3	3	3	3	3	2	3	53
Q from P91	3	2	4	1	2	2	2	3	4	4	3	4	-	5	4	4	1	3	51
Q from P92	2	2	2	3	1	1	0	3	4	5	2	4	2	3	3	5	2	2	46
Q from P93	2	2	2	3	1	1	0	3	4	5	2	4	2	3	3	5	2	3	47
Q from P94	4	3	3	3	3	3	3	2	3	3	3	3	3	3	3	3	2	3	53
Q from P95	3	2	4	1	2	2	2	3	4	4	3	4	-	5	4	4	1	3	51
Q from P96	2	2	2	3	1	1	0	3	4	5	2	4	2	3	3	5	2	2	46
Q from P97	3	3	3	3	4	2	2	3	3	3	3	3	4	4	2	5	2	3	55
Q from P98	2	2	2	2	3	3	3	2	3	3	2	3	3	1	3	3	2	3	45
Q from P99	2	2	2	3	1	1	0	3	4	5	2	4	2	3	3	5	2	2	46
Q from P100	4	2	2	4	4	4	4	3	4	4	2	3	4	4	4	4	2	3	61
Q from P101	5	3	5	5	1	1	2	4	5	5	3	4	5	3	3	5	1	-	60
Q from P102	4	2	3	4	3	2	2	3	3	3	2	3	2	3	3	3	1	2	48
Q from P103	3	2	2	3	3	3	2	2	3	4	3	1	-	3	2	3	2	-	41
Q from P104	4	3	3	3	3	3	3	2	3	3	3	3	3	3	3	3	2	3	53
Q from P105	3	2	4	1	2	2	2	3	4	4	3	4	-	5	4	4	1	2	50
Q from P106	3	2	2	3	3	2	3	3	5	4	3	2	-	3	2	2	2	0	44
Q from P107	5	5	3	5	2	2	2	4	5	4	3	1	3	5	5	4	0	3	61
Q from P108	3	3	4	3	3	2	2	5	4	4	3	5	3	4	3	3	2	-	56
Q from P109	5	3	4	5	1	1	2	5	5	4	3	5	2	5	5	4	0	3	62
Q from P110	4	3	4	4	1	1	0	4	5	4	2	5	5	4	4	5	0	0	55
Q from P111	2	2	-	2	3	3	3	2	3	3	2	3	-	3	3	3	2	-	39
Q from P112	4	2	3	4	3	2	2	3	3	3	2	3	2	3	2	3	1	2	47
Q from P113	3	2	2	3	3	3	2	2	3	4	3	4	2	3	2	3	2	-	46
Q from P114	4	3	3	3	3	3	3	2	3	3	3	4	3	3	3	3	2	3	54
Q from P115	3	2	4	1	2	2	2	3	4	4	3	4	-	4	4	4	1	3	50
Q from P116	3	2	2	3	3	2	3	3	5	4	3	2	-	3	3	2	2	0	45
Q from P117	2	2	2	3	1	1	0	3	4	5	2	4	2	3	3	5	2	2	46
Q from P118	4	3	4	5	4	2	3	3	5	5	-	4	3	4	4	4	1	-	58
Q from P119	3	3	5	4	2	2	2	3	5	4	4	3	-	4	3	4	2	1	54
Q from P120	4	3	5	4	2	2	0	5	5	3	5	4	3	4	4	4	0	0	57
Q from P121	2	2	2	3	1	1	0	3	4	5	2	4	2	3	3	5	2	2	46
Q from P122	4	5	2	5	2	2	2	4	4	3	3	3	-	4	4	4	1	0	52
Q from P123	5	5	3	5	2	2	2	4	5	5	3	5	3	5	5	4	0	3	66
Q from P124	3	3	4	3	3	2	2	5	4	4	3	5	3	4	3	3	2	-	56
Q from P125	5	3	4	5	1	1	2	5	5	4	3	5	3	5	5	4	0	3	63
Q from P126	4	4	3	5	2	2	2	4	5	3	5	1	3	4	4	4	1	2	58
Q from P127	2	2	-	2	3	3	3	2	3	3	2	3	-	3	3	3	2	-	39
Q from P128	4	2	3	4	3	2	2	3	3	3	2	3	2	3	3	3	1	2	48
Q from P129	3	2	2	3	3	3	2	2	3	4	3	2	-	3	2	3	2	-	42
Q from P130	2	2	2	3	1	1	0	3	4	5	2	4	2	3	3	5	2	2	46
Q from P131	4	3	3	3	3	3	3	2	3	3	3	3	3	3	3	3	2	3	53
Q from P132	3	2	4	1	2	2	2	3	4	4	3	4	-	5	4	4	1	3	51
Q from P133	3	2	2	3	3	2	3	3	5	4	3	2	-	3	3	2	2	0	45
Q from P134	3	3	4	4	3	3	3	3	4	3	3	4	0	4	4	4	2	1	55
Q from P135	5	3	5	5	2	2	2	4	4	4	2	5	2	4	4	4	1	0	58
Q from P136	5	3	5	4	2	2	2	5	5	4	2	5	0	4	4	4	1	0	57
Q from P137	5	3	4	4	1	1	1	4	5	5	2	5	1	3	4	4	2	0	54
Q from P138	4	3	5	5	1	1	1	4	5	4	2	5	2	4	4	4	1	1	56
Q from P139	5	5	3	5	2	2	3	4	5	5	3	2	4	5	5	4	0	3	65
Q from P140	5	5	3	5	2	2	2	4	5	5	3	2	3	5	5	4	0	3	63
Q from P141	3	3	4	3	3	2	2	5	4	4	3	5	3	4	3	3	2	-	56
Q from P142	5	3	4	5	1	1	2	5	5	4	3	5	2	5	5	4	1	3	63
Q from P143	4	3	4	5	4	2	3	3	4	5	-	4	3	4	3	3	1	-	55
Q from P144	3	3	5	4	2	2	2	3	5	4	4	3	-	4	3	5	2	1	55
Q from P145	3	3	4	3	3	2	2	4	4	4	3	5	3	-	3	-	2	2	50
Q from P146	4	3	4	5	2	2	2	3	5	5	2	4	3	5	3	5	1	1	59
Q from P147	2	2	2	4	2	2	1	3	5	4	2	4	-	4	3	3	1	3	47
Q from P148	4	3	3	3	3	3	3	2	3	3	3	3	3	3	3	3	2	3	53
Q from P149	3	2	4	1	2	2	2	3	4	4	3	4	-	5	4	4	1	-	48
Q from P150	3	2	4	3	4	3	2	4	3	4	2	4	4	3	2	3	3	-	53
Q from P151	2	0	0	0	4	4	3	1	3	3	1	3	-	4	2	2	3	-	35
Q from P152	3	2	-	4	2	2	4	2	3	3	3	4	-	3	3	3	2	0	43
Q from P153	3	2	4	3	2	2	2	4	4	5	2	3	4	3	2	3	3	-	51
Q from P154	4	3	2	3	3	3	1	3	4	3	2	3	4	4	3	4	1	0	50
Q from P155	4	3	3	4	2	2	2	3	4	3	4	4	-	4	3	5	1	3	54
Q from P156	4	4	3	4	2	2	2	3	4	3	2	4	2	4	4	4	2	-	53
Q from P157	4	4	4	5	2	1	4	4	4	3	3	5	3	4	4	5	2	-	61
Q from P158	4	5	5	5	2	2	2	4	5	4	2	4	2	4	4	4	2	0	60
Q from P159	3	2	5	3	2	2	3	3	3	3	3	3	-	3	3	3	2	0	46
Q from P160	3	2	5	3	2	2	2	3	3	-	-	-	-	-	-	-	-	-	25
Q from P161	4	5	3	3	2	2	2	3	4	2	3	4	3	3	3	5	2	-	53
Q from P162	3	2	4	3	4	3	2	3	3	5	2	3	4	3	2	4	3	1	54
Q from P163	4	4	4	4	2	2	1	4	5	4	2	5	2	5	5	5	2	-	60
Q from P164	2	2	2	3	3	3	3	2	3	3	3	4	-	4	3	3	2	-	45
Q from P165	4	3	5	4	2	2	2	3	3	4	2	4	3	4	4	4	2	3	58
Q from P166	3	3	3	4	2	2	2	3	4	3	3	4	3	5	3	4	2	-	53
Q from P167	4	3	4	3	2	1	1	3	3	3	1	4	2	4	3	4	2	4	51
Q from P168	4	2	2	3	3	3	2	4	4	3	2	3	4	4	3	4	1	0	51
Q from P169	4	2	2	2	4	3	3	2	3	3	1	3	-	4	-	3	-	4	43
Q from P170	0	0	0	1	3	3	2	3	4	1	1	1	1	3	2	3	3	1	32
Q from P171	3	3	4	2	3	2	-	3	3	3	3	3	3	3	3	3	2	3	49
Q from P172	5	3	4	5	1	1	2	5	5	4	3	5	3	5	5	4	0	0	60
Q from P173	4	4	3	5	2	2	2	4	5	3	5	1	3	4	4	4	1	2	58
Q from P174	2	2	-	2	3	3	3	2	3	3	2	3	-	3	3	3	2	-	39
Q from P175	5	2	5	5	2	2	2	3	5	4	3	5	2	4	-	5	-	1	55
Q from P176	4	-	3	2	4	4	4	2	3	3	1	3	-	2	2		3	2	42
Q from P177	2	2	-	2	3	3	3	2	3	3	2	3	-	3	3	3	2	-	39
Q from P178	3	2	5	4	2	2	2	4	5	4	4	2	3	4	2	4	3	-	55
Q from P179	4	3	2	3	3	3	1	3	4	3	2	3	4	4	3	4	1	0	50
Mean Value for each question	**4**	**3**	**3**	**4**	**2**	**2**	**2**	**3**	**4**	**4**	**3**	**4**	**3**	**4**	**3**	**4**	**1**	**2**	53
Variance	**1.07**	**1.03**	**1.26**	**1.38**	**0.85**	**0.74**	**0.88**	**1.05**	**0.67**	**0.65**	**0.62**	**1.17**	**0.87**	**0.66**	**0.73**	**0.66**	**0.62**	**1.43**	
SDVA	**1.03**	**1.02**	**1.12**	**1.18**	**0.92**	**0.86**	**0.94**	**1.03**	**0.82**	**0.80**	**0.79**	**1.08**	**0.93**	**0.81**	**0.86**	**0.81**	**0.78**	**1.20**	

Appendix I Questionnaire Validation Survey

Development of a Framework to Minimise Unfair Payment Practices in the UK construction Industry

The aim of the study is to develop a theoretical framework to minimise unfair payment practices to subcontractors and suppliers in the UK construction industry. Recent UK government report identified late payment, "pay when paid" culture, withholding retentions, disparagingly rate of items, imposition of rates, and exclusion of provisional remedy as common unfair payment practices bedevilling the UK construction industry.

Objectives

The study objectives are:

1. To evaluate robustness of payment procedures in various standard forms of contract used in the UK construction industry.
2. To determine the scale of unfair payment practices between tiers of construction clients.
3. To identify contemporary causes of unfair payment in the UK construction industry.
4. To ascertain if unfair payment practices influence contractors' business performance.
5. To develop a theoretical framework that will help minimise unfair payment practices in the UK construction industry.

Brief insight of research methods

This study adopted concurrent mixed methods design for better understanding of the research problem. Total of 179 structured questionnaires were considered for quantitative data analysis and 19 interviews were conducted with seasoned stakeholders including clients, contractors, quantity surveyors, commercial managers, contract managers, commercial lawyers, managing directors of construction firms and business development manager. Furthermore, archival data and case studies were obtained from reliable sources such as Build UK and Companies House website concerning payment and business performance for both clients and contractors that are doing business in the UK.

Summary of findings to the Study

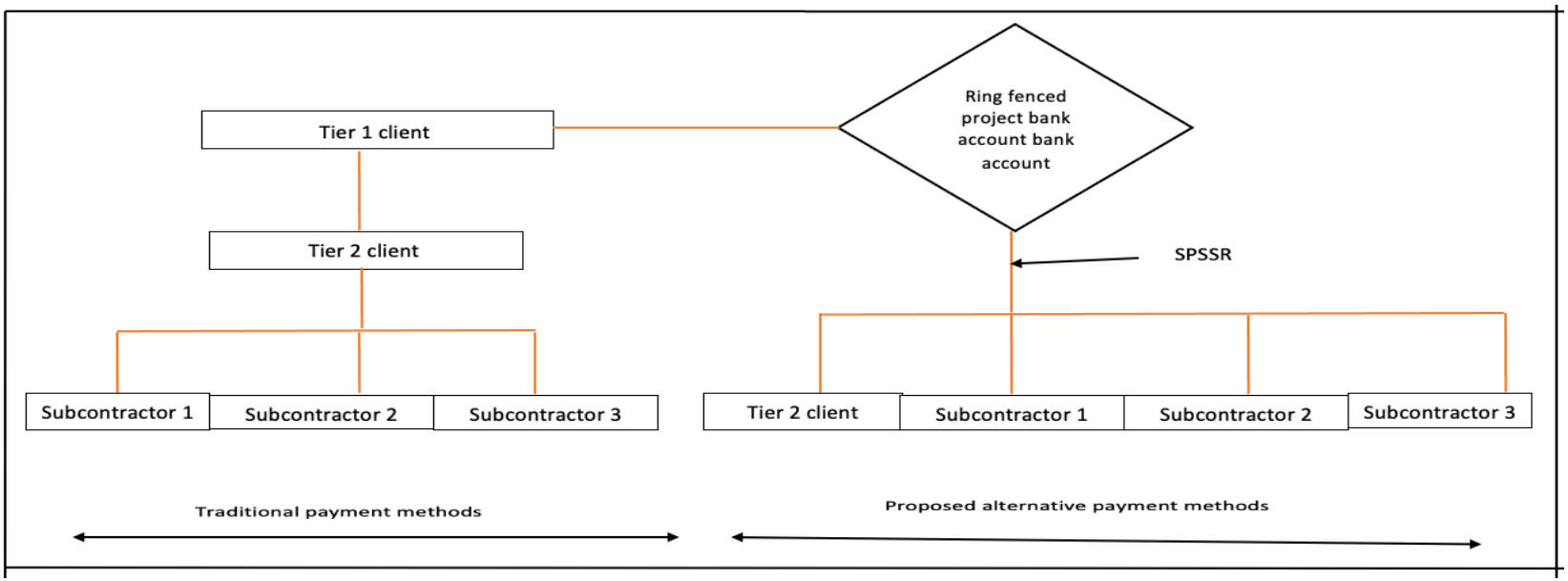
Key findings from the study show that Tier 2 clients' (main contractors) accounted for 82% of unfair payments practices, while 13% and 5% cases were linked to Tier 3 and Tier 1 clients respectively. Indeed Tier 2 has and does exert strong commercial influence over payments to construction supply chain. Other findings reveal that the industry is beset with host of unfair practices that range from late payments, withholding of retentions, pay when paid, cowboy bullying, spurious deductions, discounts for prompt payments, supply chain finance, pay to stay- fees and etc

The study also discovered that payment provisions in standard forms of contract are often ignored. In most cases the immediate effect of unfair payment practices on contractors is that it retards their cash flow; with resultant consequence on financial performance. Generically, the effect of unfair payments practices on construction supply chain is like a snowball effect; with direct consequence on business profit margin, incessant insolvencies and indirect effects leading to mental illness, stress, business reputational damage, etc.

Subsequently, the study developed a framework to minimise unfair payments practices to construction supply chain. The framework has potentials to encourage prompt payment of invoices from Tier 1main clients (private/public) to subcontractors and other suppliers by reducing excessive

payment bureaucracy and dominance of main contractors. Figure 1 illustrate proposed framework designed to ring-fenced project account; to be backed by a charter and protected by legislation. The project account is to be controlled by a Special purpose payment system regulator (SPPSR)

Figure 1: Proposed Framework to Minimise Unfair Payment Practices in the UK construction Industry



Key:

SPSSR- Special Purpose Payment System Regulator

Tier 1 Client – Public / private

Tier 2 Client – Main contractors

Summary of framework:

- The SPPSR need to be independent and their key role is to monitor and facilitate payments, rather than being cascaded by main contractor to subcontractors and supply chain.
- The process flow for payment application from submission of invoices by subcontractors/supplier down to payment is shown by **red arrow**.
- All submitted invoices for work performed shall be electronic; Tier 2 clients MUST confirm receipt, approval or rejection within seven days.
- When Tier 2 approved subcontractors invoices SPSSR will disburse payment to subcontractors and suppliers with two weeks.
- Legal and financial backup by a jurisdiction or act of parliament is required to oversee and secure prompt payment for the framework to function optimally.
- The proposed framework is similar to the non-for-profit Tenancy Deposit Scheme (TDS) managed by National Housing Association and regulated by Housing Act 2004. Detailed explanation of the framework are presented in chapter 7 of the study.

Questionnaire for framework Validation-Academic

The purpose of questionnaire below is to validate developed framework illustrated above.
In the context of attached the study aim, objectives and findings stated above please read each question carefully and put a tick (√) on the column that best describes your agreement with these statements below:

		Very strongly agree	Strongly agree	Agree	Disagree	Strongly disagree	Very strongly disagree	Unsure
1	Overall intention of the framework is good							
2	The framework has potentials to minimise unfair practices to subcontractors and suppliers							
3	With appropriate legislative backing the framework; has potentials to minimise unfair payment practices							
4	The framework provide insight concerning alternative payment methods to subcontractors and supplier in the construction industry							
5	If implemented properly the framework has potentials to enhance fair payment practices.							
6	The framework presents a new concept to paying construction supply chain							
7	The framework is logical							
8	The framework has potentials to minimise other unfair payment practices							
9	The framework has potentials to speed up prompt payment of invoices to subcontractors and suppliers within two weeks.							
10	As a construction professional I will recommend the framework to others							
11	The framework is capable of minimising late payment culture in the UK							
12	The framework can encouragement fair payment practices in construction							
13	The framework is too complicated and I will not recommend it to others.							
14	Perhaps Tier 2 clients will not sign up to use the framework							
15	The framework layout is easy to understand							

Please use spaces below to express your views about the study key findings and the developed framework:

Thank you!